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Mind the gap: Enabling online faculty and instructional designers in mapping new models for quality online courses

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Abstract Distance education has provided the foundation for new generations of learning, including courses delivered through various web-based educational technologies, also referred to as online learning. Many post-secondary institutions face the challenge of creating processes and systems to support instructors who are required to design, deliver, and frequently update online courses. Effective online course design prioritizes a student-centered pedagogical approach through active learning and meaning-making using modern technologies. This requires a wide spectrum of experience, technological skills, and pedagogical knowledge that is difficult to achieve. On one hand of the spectrum, are instructors with experience in online course delivery, learning technologies, and knowledge of online learning pedagogies. On the other hand of the spectrum, are instructors with insufficient experience, technological skills and awareness of online pedagogies. This disparity in instructors' experiences, skills and knowledge results at times in a gap in ability. By providing a flexible and interactive model of support to instructors, instructional designers can shorten this gap in theoretical knowledge and practical skills. This paper explores the skill gap that some instructors face in the online learning domain and presents selected approaches to support instructors when transitioning to online courses based on the authors' professional experiences. This paper considers two models of course design support from two unique higher educational institutions in the United States and in Canada, using different learning management systems. The results show that while these models have

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different contexts, they offer significant insights about common goals, flexible content, and learner-centered course design.

Keywords Instructional design · Online learning · Faculty learning · Communities of inquiry · Instructors' development programs

1 Introduction

Higher education has seen seismic changes due to the widespread adoption of new generations of distance learning including courses delivered through web-based educational technologies, also referred to as online learning. Initial resistance to online learning has slowly shifted to acceptance of a delivery medium that continues to rapidly evolve and change with new technological advances. While some educators accept and even embrace online learning, they may approach the medium with mixed assumptions, values, and beliefs on the use of technology to promote learning. Yet many other instructors resist distance learning in part due to their hesitancy to incorporate technology into their courses, inexperience with the medium, and unawareness of online learning theories. Barriers to successful online course design include instructor anxiety, a technological skill gap, lack of experience with online teaching and awareness ofonline learning pedagogies. Such discrepancies in instructors' knowledge, experience, and skills can be addressed through flexible support models that adapt to the instructor's needs and facilitate a negotiation of the interactions between instructors and instructional designers. The purpose of this inquiry is to explore the skills gap faced by instructors transitioning to online learning and present different approaches to course design support for instructors as they build meaning and create best practices in their online courses. Two case studies will be explored within the Royal Military College of Canada (RMCC) and the State University of New York (SUNY) and specifically the models for course design support adopted by these two higher education institutions. This study contributes to distance education research by exploring the wide range of technological ability, online pedagogical knowledge, and skill gaps among online instructors and proposing that flexible models of course design support can provide a way to bridge these gaps.

2 Research questions

Effective online learning requires instructors and course designers to partner together in building student-centered learning experiences. Instructors have individual needs, teaching styles, and goals related to their courses; accordingly, instructional designers need to consider all these aspects as well as the instructors' experience in online settings and skill level in learning technology in order to identify appropriate support, tools, and strategies. Therefore, this study asks the following questions:

1. What are some potential gaps in skills, knowledge, or experience that may influence how instructors transition to online learning?

2. To what extent can a flexible approach to course design support enable instructional designers and instructors to work together to select relevant pedagogies, learning strategies, and technologies when developing online courses?
3. In what ways can flexible models of course design support assist more effectively those instructors transitioning to online settings?

3 Methodology

This study adopts a comparative approach and a qualitative methodology using both primary and secondary sources. A review of educational literature was first conducted in order to provide a theoretical foundation for this inquiry. Secondly, two case studies were selected based on the authors' experiences to explore ways in which instructors work with course designers to convert courses for online settings. Third, primary data from the authors' respective institutions is included to provide students' and instructors' perspectives on their online learning and teaching experience respectively.

The two case studies allow a glimpse into the authors' first-hand experiences developing, delivering, and revising courses in separate institutions using the web-based Learning Management Systems (LMS) Blackboard and Moodle. Case studies that draw upon the researchers' knowledge and experience can ultimately influence practioners in the field. As Tony Harland (2014) notes, "to help understand complex real-life social situations requires either (a) experience or (b) learning from specific cases" (p. 1116). The authors' online learning and teaching experiences provide genuine accounts of the quality of the two online learning models. Furthermore, case studies prioritize human experiences and look forward to improving the practices and daily experiences of instructors at an individual and institutional level and within a specific context (Stake 2010). This study examines two distinct course design support models at two separate post-secondary institutions in Canada and the United States based on the authors' experiences within these institutions. Experiential evidence describes the situation from an insider's perspective and is a legitimate sampling source because it is practical and addresses the research questions. Harsh Suri (2011) notes that when using experiential evidence, "the nature of its use and associated caveats must be clearly described" (p. 8). To this end the authors' learning experiences with instructional designers using various support models and the authors' experiences teaching online undergird the study. A convenience sample from the authors directly involved with online learning provides insights about the instructional design methods, management, approaches, and resources used at these separate institutions. By using this data from the authors' institutions, they are able to assess the resources and processes used in their educational learning outcomes (McMillan and Schumacher 2010). As mentioned in the introduction, the sites for this study are the RMCC, in the province of Ontario, Canada, and a SUNY college in northern New York state, in the United States of America. RMCC offers both undergraduate and graduate degree programs whereas the SUNY college offers undergraduate terminal and transfer degree programs.

Finally, this small qualitative study examines the perspectives of two higher education institutional models of support for online course development. While the authors' accessibility to their respective institutions offers a deeper understanding of the models

and the challenges associated with online course development, the qualitative nature of this study suggests that the findings are not generalizable to all institutions. Rather, this study provides an understanding of the experiences from the two institution in the case studies, which could be 'borrowed' by other institutions, with appropriate adaptation to the different contexts.

4 Gaps in meanings: Defining online learning

New and emerging technologies continue to bring rapid advances to distance education resulting in gaps in meanings and terms. Distance education, cites Desmond Keegan (1996). is a unique form of education that attempts to educate learners outside of conventional classrooms and in non-traditional forms. While the demographics and scope of distance learning varies, it is most often associated with adult learners, post-secondary education, educational technology, and non-traditional systems of learning (p. 13). However, Linda Harasim (2000) argues that distance learning is not the same as online learning, but they share similar traits. Online learning focuses on active student dialogue, access to open resources, collaboration, self-directed learning, and unlimited access to web-based sources. As she notes, "The critical differentiating factor is that online education is fundamentally a group communication phenomenon. In this respect, it is far closer to face-to-face seminar-type courses" (p. 49–50). For the purposes of this paper, online learning refers to Internet-based course delivery through a LMS. The post-secondary institutions in the case studies offer credit-bearing online courses through the Moodle or Blackboard LMS as part of students' degree requirements. Moore et al. (2011) highlight two specific characteristics of a LMS, namely, that learning is web-based and follows a specific design. Online courses have access to web-based lecture notes, links, apps, blogs, and other resources that contribute to specific learning outcomes. Students who take online courses are separated from the instructor and other students but they engage with each other through discussion boards and online technologies. Repositioning instructors and students in online courses results in different approaches to course design and instructional design support. Instructional design that improves student learning experiences informs how designers assist instructors (Moore and Kearsley 2011; Rothwell and Kazanas 2011). Some faculty may not fully understand the role of the instructional designer in course design and may have different expectations about how students learn online. These discrepancies may influence what can be achieved in the instructional designer-instructor liason.

5 Gaps in understanding: Theoretical frameworks

While most instructors have considerable experience developing face-to-face courses, the transition to designing online courses requires unique pedagogical approaches to create robust, student-centered learning experiences. The two-way communication that occurs between instructors and students is often idealized in learning contexts because dialogue allows all participants to construct knowledge. In online asynchronous courses however, communication in largely fragmented by time delays, which could result in a gap in knowledge and meaning making for participants (Moore and Kearsley 2011;

Wood and Smith 2005). This gap or transactional distance as Moore et al. (2011) describes it, may result in miscommunication or misunderstandings between the student-instructor relationship. Moore argues that transactional distance is not only physical but conceptual as well, influencing the instructor's pedagogical practices, dialogue, and course structure. While technology helps to bridge the geographical distance between instructors and students, this requires an appropriate course design. Instructional designers trained in multiple online theories, learning strategies, technologies, and activities work with instructors to overcome this conceptual gap by creating new social contexts online. Instructional designers and instructors often utilize the more common constructivist and connectivist theories of online learning to create student-centered courses that minimize the conceptual gap in learning.

The most widely accept paradigm for developing student-centered online learning experiences has been the constructivist approach (Anderson 2008). Some key traits of a constructivist view are that the instructor facilitates learning with students rather than disseminating knowledge. Knowledge is a process of creating fluid, contextual, and collaborative meanings in interactive settings. Students learn about real-world problems that require them to participate and interact with other learners, the content, and the instructor. One widely accepted framework for constructivist online learning is the community of inquiry framework by Garrison et al. (2001, 2010). Here, learning occurs in a community and students engage with other students and the instructor to discover new knowledge relevant to their course goals (Garrison and Arbaugh 2007; Shea and Bidjerano 2009; Swan et al. 2009). Teaching and learning experiences focus on three elements of online communication: cognitive presence, social presence, and teacher presence. Cognitive presence involves helping students engage in critical thinking skills through online content. Exploring and resolving complex ideas through sustained communication and interaction helps students apply new knowledge to real-world problems. Social presence involves establishing a safe, respectful online space where students can collaborate and share ideas. Teaching presence requires instructors to structure, process, and manage the online learning experience through direct instruction, discussion, and knowledge-sharing in order to achieve meaningful educational outcomes ideas (Akyol et al. 2009; Akyol and Garrison 2008; Akyol and Garrison 2011). Cognitive, social, and teacher presence are grounded in a constructivist view of online learning where dialogue, collaboration, and interaction shape online learning. A constructivist paradigm is a flexible approach to online course development because course designers work with faculty to adjust strategies and technologies that are suitable to the instructor and students' needs.

More recently, the connectivist paradigm acknowledges that students and instructors engage with multi-modal tools in online settings. While early research focused on distance education in a text-based environment, advanced technologies and open access, interactive Web 2.0 platforms have transformed distance learning to be more accessible, networked, and collaborative. Millennial students who grew up in a networked culture look forward to courses that have interactive, open technologies. A networked approach to distance learning views knowledge as embedded in a network of information and agents (Anderson and Dron 2011). Because people engage with Web-based texts, digital artifacts, and technologies in learning environments, information is more accessible and open. Related paradigms such as enactivism (Fenwick 2000) and ecologies of e-learning (Frielick 2004) address the interconnectedness of

human cognition with ever changing environments and acknowledge the chaos, complexity, and innovation inherent in all learning systems. A connectivist paradigm views learning in a Web 2.0 era as an interconnected system of invention, exploration, and meaning-making (Siemens 2005; Downes 2008). Learning and cognition are open to change depending on the technological environment. Unlike a constructivist paradigm that assumes learning occurs in a community, a connectivist theory goes beyond creating a framework for collaborative and interactive online experiences and considers that learning is random, autonomous, connected, and diverse for each individual (Tschofen and Mackness 2012). Both the constructivist and connectivist paradigms provide valuable theoretical frameworks to develop pedagogically sound online courses. When working with instructional designers, instructors should explore key online learning theories to identify those that work best for their courses.

A third theory that applies to this study is adult learning theory. In this context, instructors who are new to online course development can be considered as adult learners in terms of how their teaching experience will guide how they approach technology and make decisions about course design. Adults actively search for ways to address real-world problems. Based on the work of Malcolm Knowles (1970). adult learning focuses on four key premises. First, adults are self-directed and independent in their decision-making. They are not passive learners but actively engaged in the learning process. Second, adults draw upon an increasing arsenal of experiences to make meanings. Third, their approach to learning is related to their social roles and focused on immediate problems. Finally, adults process information in order to become increasingly competent in their performance (pp. 44–45). When approaching new online models, adults must actively engage with the instructional designers and master rapidly evolving computer-mediated tools to shape course materials. New technological experiences challenge educators to reexamine their previous assumptions about technology and learning. Social media, gaming, open access, and virtual tools now enable instructors and students to enage with each other and to become more critically reflective members in a community of inquiry. Learning to use these new tools with the help of instructional designers may occur in cycles. As Mayes and de Frietas (2013) argue, adult learners aquire and apply technological tasks incrementally. Even within an institution's standardized LMS, educators and students can control their learning through personalizing the content. These authors further describe online learning stages that, on one hand, begin with communities and peers to construct meanings and, on the other hand, move to learning tasks that require individuals to engage with the subject matter and produce results. Online learning theories require adults to practice a "bottom-up mastery of the components of a task" that will involve peer-checking and dialoguing with other instructional designers to refne a skill (Mayes and de Frietas 2013, p. 27). Understanding complex online learning theories and using complex technological tools as needed or in stages can help online educators overcome a skills gap and gain perspective about creating dynamic learning experiences. Instructors who are reluctant to accept technology can be motivated to find relevant, applicable ways to address problems on their own or with the help of an instructional designer. Intentional instructional design aimed at adult learners helps overcome these technology barriers, especially when explaining theories to online instructors who may have a range of technological ability or anxiety (Johnson et al. 2012; Power and Morven-Gould 2011). Instructors scaffold learning based on the immediate problems they face in their online

courses. Understanding how adults use technology to address these problems can help instructional designers and instructors find the best tools for online courses.

6 Gaps in technology adoption by instructors

Perhaps the greatest struggle in online course design is to keep up with the influx of technology which may cause a gap in technical skills for some instructors who are unfamiliar with online learning. Instructors approach online learning with different values and assumptions that are often linked to demographic barriers and institutional pathways to technology use. Online instructors have diverse histories that include traditional instructors with moderate technological awareness and technologically savvy instructors with a wide range of digital teaching and research experience. Instructors with less technological experience may resist adopting new strategies because they may not be personally motivated to learn new things or they fail to see how it relates to their subject matter, resulting in a potential gap between these instructors and digital native instructors and their students (Yu et al. 2009; Buchanan et al. 2013). Instructors new to online learning may feel anxious about integrating open access resources into their courses and question their relevance (Johnson et al. 2012). While some instructors value technology, they admit to needing guidance on how to use the technology (Díaz et al. 2010). Some instructors also work in academic silos and internalize disciplinary traditions that emphasize content-based lectures that often translate knowledge to passive learners. Instructors working in such silos create habits that elevate their own discipline without consideration of the differences between face-to-face and online learning which requires them to adapt their approach to course design and adopt new learning technologies.

Institutional barriers to technology use and online course design often hinder the instructional designer and instructor relationship. Administrators may approach distance learning with fiscal, personnel, and work limitations that often translate into instructors missing rich educational opportunities. Redesigning courses for online settings requires time. Instructors may resist learning new technologies without sufficient workload reductions or compensation, and most wonder whether or not the time and effort devoted to technology use is valued by the institution (Moser 2007; Aldunate and Nussbaum 2013; Allen and Seaman 2012). The inability of institutions to offer compensation for instructors and a lack of technical support means that instructors have less time to focus on individual research and writing (Birch and Burnett 2009). New instructional design models that focus on technology forums, learning communities, and resources can help instructors accept and adopt new approaches to online learning (Kukulska-Hulme 2012). Adopting new technologies also requires stronger institutional infrastructure and investment in online learning, which is difficult in the current economic climate. Many institutions resist hiring more instructional designers even though some instructors would welcome one-on-one guidance. Instructors desire more contact with colleagues and instructional designers during the development stages of their online courses, as well as time to develop a reciprocal relationship that provides opportunities for feedback and reflection (Lackey 2011; Puzziferro and Shelton 2008). Working individually with an instructional designer contributes to stronger online courses and helps instructors target specific areas in the course that need technological or pedagogical attention. Flexible models of course design support that emphasize

collaboration, cooperative relationships, and dialogue can help instructional designers adjust to instructors' technological skill.

7 Institutional approaches to online course development

Much research has focused on how to create strong, student-centered online courses, yet more research is needed on how to better support instructors during all stages of the course design process to create strong online learning experiences. Zawacki-Richter et al. (2009) argue that online instructional support for instructors has been identified as an area where there is the most need for more research. These authors believe that greater infrastructure "for online student and faculty support, professional development, and quality assurance" are needed to help instructors seize new opportunities for teaching and learning (p. 13). Instructors desire ongoing, critically reflective approaches to online course development and need support for online learning (Baran et al. 2011; Keengwe and Kidd 2010; El-Naga and Abdulla 2015). While the design process and efficiency vary for each situation, resources such as templates, media, visual and organizational order, learning strategies, quality reviews, specification sheets, online reviews, and feedback charts help instructional designers share effective tools with instructors through diverse teaching methodologies (Kampov-Polevoi 2010; Lawless and Pellegrino 2007; O'Sullivan and Irby 2011; Roytek 2010; Stes et al. 2010). Some instructors with greater technological ability will need less intervention compared to other instructors who face a skills gap (Allen and Seaman 2013; Lloyd et al. 2012; Meyer 2012). Despite ongoing resistance among some instructors to adopt new technologies, instructional designers transfer knowledge about online learning theories, pedagogies, and practices to instructors and support them in preparing online courses and appreciating the complexities of technology (Abrahams 2010; Brown 2012; Rienties et al. 2013). When the aim is to maximize student learning experiences, more work is needed to develop new instructional design models that assist instructors with varying skills and needs.

8 RMCC case study

The first case study derives from the RMCC in Kingston, Ontario. RMCC was established in 1874 "for the purpose of providing a complete education in all branches of military tactics, fortification, engineering, and general scientific knowledge in subjects connected with and necessary to thorough knowledge of the military profession" (Royal Military College of Canada 2015b). In 1959, the RMCC was given authority to confer degrees in Arts, Science, and Engineering. RMCC is a bilingual institution which now offers various programs at the undergraduate and graduate levels both on site and online through the Division of Continuing Studies (DCS) using Moodle as the LMS.

The RMCC is a small size university with a population of about 2676 students both undergraduate and graduate, of which about 1388 are distance students.[1] The number of distance students was significantly higher when DCS was responsible for delivering the Officer Professional Military Education Program (OPME) to a population of about

[1] Data from the RMCC College Information System as of November 2014.

6000 distance students, mostly officers and some Non-Commissioned Members. The OPME program ended effective spring 2013 and along with its demise, many of the human and financial resources that were supporting the program were also eliminated including the instructional designer positions which were downsized from seven to three, of which only two are funded. In light of these financial and human resources constraints, and to meet the changing needs of the instructors, there was a need for revisiting some of the DCS processes and organization.

The former model used to support instructors to develop or review online courses with the assistance of an instructional designer was very resource intensive and lengthy, requiring eight to twelve months. Not only was this model unsustainable, but it no longer met the needs of many instructors who were more and more comfortable with learning technology and on-line learning thus requiring a more flexible and engaging approach to course development. This called for a revisiting of the existing model of course design support. Therefore, a new model was created with three more agile approaches to provide support to RMCC faculty and contractors in charge of online course reviews and developments, namely: moderate support, limited support, and minimal support (see Fig. 1 for a visualisation of the model).

The moderate support approach is more suited to undergraduate courses particularly when developed by contracted instructors, and provides substantial support from the instructional designer including feedback on materials produced and advice on pedagogy, learning technology, copyrights, etc. The limited support is best suited for undergraduate and graduate courses developed by faculty members, and provides a bit less support from the designer and a bit more involvement from instructors or adjunct instructors. In the minimal support there is little involvement from the instructional designer and the instructor selects to conduct much of the work independently and asks for advice as needed; thus, this approach is mostly recommended for graduate

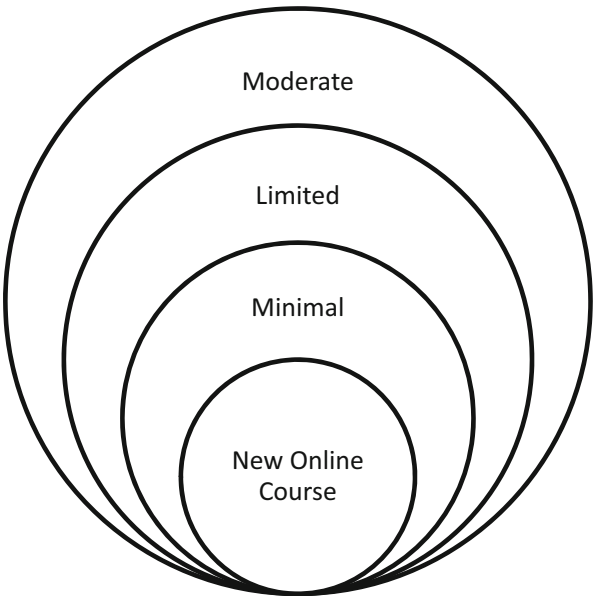

Fig. 1 RMCC course design model of support

courses developed by faculty members, which are seminar-based and have limited course design requirements. All three approaches consist of four phases of course development: start-up phase, development I phase, development II phase, and implementation phase. A key step in the start-up phase is the start-up meeting between the instructor and the course designer to establish the relationship between them, identify course goals as well as potential strategies and appropriate learning technologies.

he various responsibilities and tasks involved in course developments or reviews are outlined in the responsibility matrix and in the task checklists that are available in the Toolbox of Course Design and Development that was created in Moodle. All RMCC instructors have access to the Toolbox which contains valuable resources including: templates e.g. for course manuals, course notes, course readers, etc.; check-lists indicating which tasks are the responsibility of instructors and of the instructional designer; training aids e.g. how to add a file in Moodle, how to create a quiz in Moodle, etc.; and general guidelines such as the fair dealing policy, handouts on copyrights, literature on best practices in discussion forums, etc. (Fig. 2). In addition, workshops were delivered to RMCC faculty involved in distance learning, covering various topics such as copyrights, instructional design, and pedagogical consideration for on-line course design, and Moodle functions. Positive feedback and evaluations were received by workshop participants.

In concurrence to the new support model, tools and workshops, the Dean of DCS spearheaded the creation of the RMCC Forum of Technological & Pedagogical Innovations in Education (TPIE or Tee Pee) started in 2013 as a small working group on Distance Learning which evolved to become College-wide and was renamed the TPIE in 2014. The Forum is held twice a year to provide a venue for instructors to share innovative ideas, experiences and research in online and blended[2] learning environments. Some of the subjects covered in the Forums comprise clicker in the classroom, ooVoo, e-learning, distance learners, course gamification, discussion forums, pedagogical innovations in second language training, virtual field exercises, e-books, flipped classroom, trends in higher education, active learning classrooms, and more.

As a result of the new support model for course design implemented in 2014, a greater number of online course developments were completed compared to the previous year of which 17 courses at the undergraduate level; ten courses at the post-graduate level; eight of the courses in French; 28 in English. The support approaches used varied from moderate, to limited to minimal.

To gather feedback on the new model and toolbox, a short informal evaluation questionnaire was sent through e-mail in January 2015 to all 27 instructors who completed one or more course review or development with the support of an instructional designer in 2014. The results of the informal evaluations show that, overall, the level of support received by instructors was well suited to their requirements; however, some were unsure of the 'type' of support that was used in their project. Most instructors indicated that the advice and feedback received by instructional designers and the Moodle Toolbox were useful; however, a few did not use the Toolbox or used other tools. The questionnaire also included two open ended questions, and the

[2] Blended learning or hybrid learning describe learning contexts that combine classoroom interaction with distance education using various learning technologies for example to provide electronic course materials, virtual discussion forums, e-quizzes, etc. (Singh 2012).

Fig. 2 RMCC moodle toolbox of course design and development

responses received vary greatly. The majority of the comments reflect positive experiences and provide interesting suggestions while a few participants forwarded some critiques. A few select quotes from the instructors who completed the informal evaluations are reflected below (Scoppio and Tregunna 2015):

> [The instructional designer] was particularly helpful in bouncing ideas off of for new technology and for reaffirming some of the evaluation methods that were being used. She was able to look into questions pertaining the LMS and integration of other support tools. This type of contribution would enhance our onsite courses as much as our DL.

> It would be great to be able to have a meeting with other course designers to discuss the challenges we have with course design/review and questions about how to teach best and design a course accordingly. The support I have received was absolutely top-notch. But it would still be great to have maybe one or two group meetings with all involved in course reviews to discuss pedagogical best practices and get ideas and learn from experiences with others.

> I see the value in helping professors use technology in/out of the classroom….. Must be cognizant of academic freedom of the professors. This is a fine line that must be monitored closely. It can be support not directive.

The feedback gathered shows that the support provided to instructors through the new model and tools was well received by most. In fact, a team approach is advocated by some instructors to share best practices; however, there is also a perception among a few instructors that the course designers' advice should focus more on such things as learning technology (i.e. to fill the e-gap), and less on pedagogy.

From the students' perspective, survey data gathered from April to May 2015 for the Institutional Quality Assurance Process of the Bachelor of Military Arts and Science (BMASc), the largest RMCC undergraduate programme, provides good indicators on

the quality of the programme which includes several courses that have been revised using the new course design model of support. The surveys were sent to current students, recent graduates and instructors of the BMASc. Specifically, the students surveys were sent to 306 current BMASc students. The survey questionnaires contained 14 multiple choice questions, where only one answer was possible on the following three areas: learning atmosphere; organization and resources; and overall assessment. The survey also contained one open-ended question to gather comments on any positive aspects of the programme. 160 student replied, providing a 52 % response rate. Overall, results for the closed-ended questions show positive outcomes of the BMASc as students indicated that: the BMASc is a good quality program; the learning and performance objectives were met; the learning atmosphere is positive; the program is well organized with sufficient resources; there was sufficient Information Technology support; and they will be able to put in practice in their future jobs what they learned throughout the program (average scores between 7.8/10 and 8.5/10) (Royal Military College of Canada 2015a). Additional qualitiative feedback from students was received through the open-ended question. The majority of students positively commented on the effective development of the courses; conducive learning environment; suitable content; good overall quality of the programme; interesting discussion forums; well developed course materials (e.g. course notes and readers); good student- instructor ratio; appropriate military relevance; applicability to the job; development of wide range of knowledge and skills; and suitable leadership content. Some sample answers from the student surveys are below in both French and English, as the programme is offered in both of Canada's official languages:

> Le programme Est bien dévelopé et facile d'accès sur l'internet. Les relations en lignes entre étudiants et professeurs sont tout comme en classe. [The programme is well developed and easy to access thorugh the Internet. The on line relationships between students and professors are just like in the classroom. – free translation].
>
> The learning environment is easy to navigate and is conducive to assisting with the course. I really enjoy learning through RMC and the online environment.
>
> Well developed program. Courses are well developed and the instruction is well structured.
>
> (Royal Military College of Canada 2015a).

9 SUNY case study

The second case study derives from a small, rural college in Watertown, in Northern New York State. This college was established in 1961 as one of 64 campuses and 30 community colleges that form the SUNY system. SUNY has the largest system of community colleges, colleges, and universities in the United States and serves close to a million adult learners. The SUNY college in Watertown is accredited by the Middle States Commission on Higher Education and offers various undergraduate degrees and programs. It partners with several state-wide colleges and universities to offer students

opportunities to earn Bachelor's degrees and Master's degrees on campus. This small college serves about 4120 full and part-time students. The college also serves the local U.S. Army base located near the campus. Many military personnel and their spouses enroll in face-to-face courses at the Army Annex or enroll in online courses through the GoArmyEd Online Degree programs (State University of New York 2015). Since the early 1990s, SUNY expanded its online course offerings to deliver thousands of online courses and currently offers over 80 fully online degree programs including Associates, Bachelors, and Masters.

The SUNY course design support model consists of an intensive two-day training period led by two instructional designers. After this initial workshop-style session, instructors collaborate with individual instructional designers and attend ongoing professional development sessions (see Fig. 3). First, instructors who volunteered or were chosen to transition to online courses were contacted about attending the mandatory training session. Full-time instructors were given release time or compensation to attend these mandatory workshops. The audience consisted of an array of full-time and adjunct instructors from the humanities, arts and science, and business fields. On the first day, the course designers explained new paradigms for online learning such as developing a community of inquiry, web-based and open access capabilities, building collaborative and social learning experiences, and redefining the role of the instructor. Understanding these new online concepts helped instructors reimagine how to incorporate readings, lectures, visuals, discussions, group activities, and digital media into their course templates. Blackboard was the LMS used at all SUNY institutions, so instructors quickly learned how to manage their system. Using a single template allowed the instructional designers to simplify their teaching and adjust their technology instruction to suit most instructors' need.

During the two-day workshop, the instructional designers provided short lectures about online theories with practical instruction. After short lectures, instructors were asked to think about these theoretical perspectives as they began shaping their course content. Instructors practiced creating discussions, short assignments, and importing lectures into the course modules with varying degrees of success. They practiced using Blackboard tools that embedded digital media, music, or other hypertext into the course. Instructional designers encouraged instructors to create online collaborative group activities using fictional students, and then respond to these students' questions in the discussion sections. This pattern of instruction, practice, and application was repeated throughout the day, for two days. This hands-on experience allowed novice

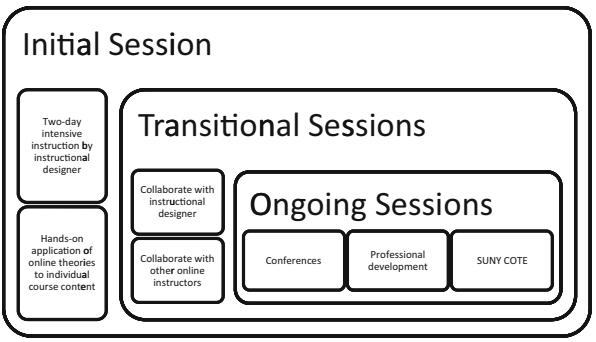

Fig. 3 SUNY course design model of support

online instructors a safe space in which to learn, practice, and make mistakes. Learning alongside a colleague meant that instructors were part of a physical, real-time community of learners trying to understand the overwhelming technological options available on Blackboard. Many fruitful conversations grew from this shared experience. When instructional designers assigned tasks to the instructors, they were able to review the task, share ideas, and ask each other questions about how the task was completed, and what went wrong. Making mistakes together in a group meant that instructors were not only unified by the activity, but they learned by interacting and making connections with other colleagues. This model of course design support encouraged active learning by having instructors isolate technology issues in order to solve immediate course-related tasks.

At the end of this two-day session, instructors returned to their regular teaching responsibilities and were expected to build their entire course on Blackboard. Instructors had to finalize their course in a few months so that the instructional designer could edit and review the course before being released. In time, instructors were better able to rearrange modules and import lectures on their own. In cases where the instructor was unsure about how to create collaborative tools or add digital resources, the instructional designer would meet with him or her to demonstrate the technology use and address the problem. Working individually with an instructional designer was time and cost efficient because designers could tailor their teaching to the instructor's needs. A mentoring and trusting relationship developed between the instructional designer and the instructor. The instructional designers were attentive, timely, informative, and always ready to work with any instructor on his or her course. This flexible approach allowed instructional designers to relate specific knowledge to diverse courses.

This mentoring relationship did not end after the first year of course development. In the months that followed, instructors collaborated with instructional designers about learning strategies and LMS tools. Collaboration and dialogue were important to this relationship as instructors who faced a technology skills gap had to keep pace with the rapidly changing online setting. Instructional designers reminded instructors to check if links or apps were working or how to streamline the tools with various mobile devices. Since the technology and the students' expectations were changing, instructional designers held workshops that were not mandatory, but strongly encouraged. Attending these workshops strengthened a real-time community as instructors were able to identify with other instructors who were experiencing similar struggles. Repeated professional development sessions were offered to all online instructors, regardless of their technological skill. As indicated in the model below (Fig. 3), this staggered approach to instructional design allowed instructors to self-direct their own technological learning based on their own skills gap. This model allowed instructors to focus on improving the quality of their courses and enabled instructional designers to support other instructors who required more direct assistance.

Recently, SUNY developed the Open SUNY Center for Online Teaching Excellence (COTE) (Fig. 4). The Open SUNY COTE is a faculty resource that supports online instructors by focusing on teaching and training (Open SUNY 2015; State University of New York 2015). The Center connects online instructors with a community of researchers, instructional designers, librarians, and technologists across New York State. This Open SUNY COTE was designed to promote teaching excellence by encouraging active learning through scholarship and professional development opportunities that directly enhance online teaching and learning. This site allows online

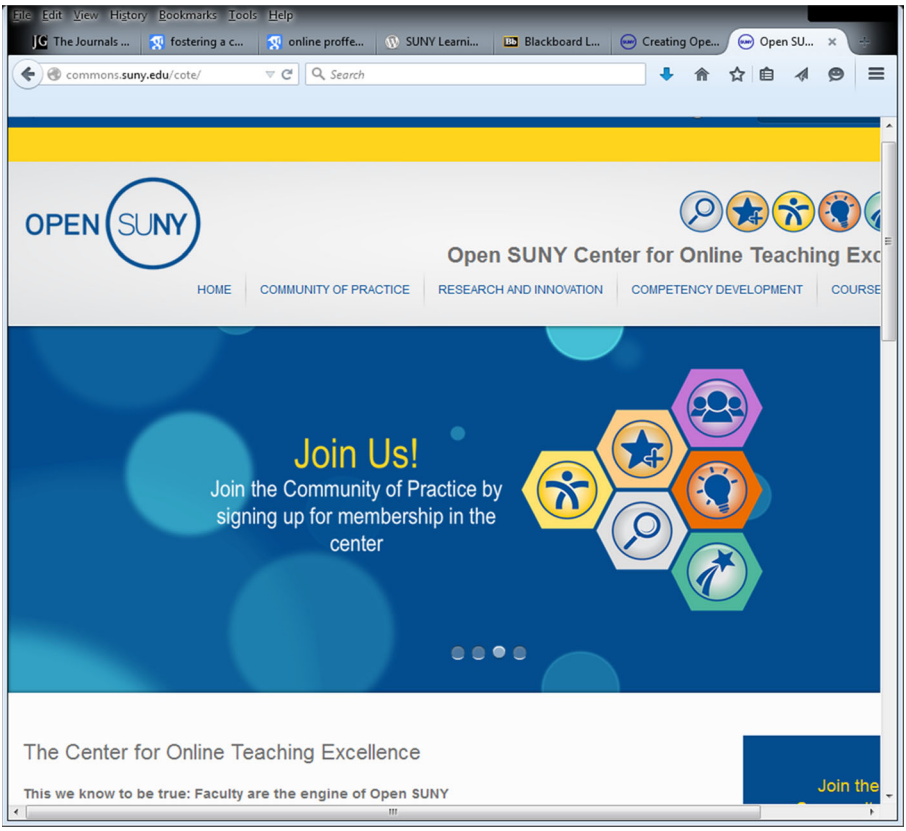

Fig. 4 Open SUNY center for online teaching excellence

instructors in the SUNY system to participate in a community of practice, identify new research and innovations, explore competency development, and retrieve course supports. In this community of practice instructors can register and submit a proposal for a new learning practice or participate in an online chat with online instructors. The research and innovation link provides full text links to research articles. The competency development link offers an example for online instructors and staff seeking to develop special skills in their online courses. This link offers core training for first-time instructors, online pedagogy certification, advanced courses, workshops, and multiple certification opportunities for online practitioners, including instructional designers. Finally, course supports on this site allow instructors to access the Open SUNY COTE Quality Review Rubric. This rubric, mirrored after the community of inquiry framework (Garrison et al. 2001). helps instructors assess their courses for social presence, cognitive presence, and teaching presence. Instructors are guided through this review process and have access to additional resources to help improve their courses. Creating this Open SUNY COTE encourages instructors to self-direct their learning based on their individual needs. Instructors can access its resources on Twitter, Facebook, Google or YouTube. This site also encourages instructors to be proactive in sharing ideas, improving their teaching, and engaging in SUNY-wide learning communities that examine the challenges and successes involved in online learning.

In Luyt's (2015) qualitative study exploring first-year online learning experiences in an online English class, both students and instructors show positive attitudes and satisfaction with new technologies and learning outcomes. When asked how online tools influence how she presents information, constructs meanings, and encourages students to think and write, one instructor indicated the following:

> Teaching online forces me to figure out different ways to explain things vusally. I am a visual learner, so I really value concepts being shown versus explained. For example, in the traditional class when teaching MLA formatting, I would open a Word document and using the projector, show students how to set up their documents. In the online class, I had so many issues at first with students not setting up their documents correctly. Finally, I found a You Tube video that did the same thing I woud have on on the projector in the traditional class. Now I share that wih my students at the start of the class and usually post it again later in the class.
>
> (Luyt 2015).

This instructor described learning to use tools in stages, first by acknowledging a need, then searching for a solution, and then applying new knowledge to the problem. Students also appreciate the versatility of multimodal learning. When asked about her online learning experience, one student indicated that group dicussions and digital tools expanded her research and writing skills:

> I think doing it online can be better because you get the input of many other people. There can be so many people you can talk to about a subject without the internet, but online you can go to many different articles and see a variety of opinions and points of view—that's brainstorming, reading other people's opinions. Then, revising and editing, having the online dictionary or even just the resources that you've looked at before that you can then quote. It's easier that way than getting a book and reading the whole book or trying to find what you want to put in your essay.
>
> (Luyt 2015).

Another student said that she "absolutely loved the discussions", while yet another student claimed that the learning community made her feel more engaged in the learning process:

> I believe online learning helps you to reflect just because you come into contact with so many different people. Like there are some people from completely different cultures, backgrounds, religions. Whenever someone tells you about their experience, it's like, I never even knew that or I never even experienced that, so you learn more about them and whatever different background they have.
>
> (Luyt 2015).

10 Discussion

These two instutions are significantly different in size, clientele, and support yet share unique similarities and differences. Because of its size, SUNYcan offer greater support to online instructors. Notwithstanding these differences, even a small institution such as RMCC is able to provide course design support in a more limited scope. The RMCC case study illustrates a flexible course design support that is responsive to the changing needs of organizations and instructors. The model in this setting fits within a constructivist and adult learning context whereby collaboration, information sharing, and providing support tools supplement the instructors' own experience creating courses, thus constructing new knowledge. The SUNY case study also recognizes the need for flexible, individualized, and institutional support. Preparing for online course delivery requires initial costs that require hiring quality instructional designers. Acknowledging the need for individualized support at the early stages of course development and continuing collaboration with a course designer during all stages of course delivery helps instructors to "buy-in" to online learning. Regardless of their skill level, instructors know they have the support of two full-time, on-call instructional designers. Both instutitions recognize the need for strong institutional initiatives that support instructors during rapid technological advances and draw upon their personnel and the instructors' background and experience to support ongoing online course development.

Both models of course design support highlight the value of a non-linear approach to online course development. Instructional designers must adopt a flexible approach to assisting instructors in their online course development. Designers must tailor ideas to help instructors create student-centered courses that focus on knowledge construction, meaning-making, and collaboration. Depending on the instructors' feedback and skill level, instructional designers must work with instructors to select relevant online theories and appropriate strategies for developing and revising online courses. A constructivist approach to support helps instructional designers assess instructors' individual needs and online experiences and potentially address any technological skills gap. Designers can also advise instructors on online pedagogies and then help them apply these theories to course specific tasks. A flexible approach to course design support helps all parties to appreciate the value of technology and adopt guiding principles regarding course design. Both case studies demonstrate the need to assist instructors at their learning level and build supportive relationships that demystify technology and online learning. Furthermore, both models offer the freedom to select course-specific tools that promote strong student-centered learning experiences. These similarities also highlight key lessons that can be applied to other educational settings.

The first lesson learned from these two models is that dialogue is essential to any course designer-instructor relationship. Clarifying common goals about learning outcomes and student engagement precedes early discussions about the course design process. Course designers should discuss with the instructor their course goals and different strategies and techniques to shape the course content, learning activities, disciplinary expectations, lectures, and exams. Understanding how instructors want to engage learners in social, cognitive, and teacher presences informs these early conversations. The course designer explores the instructor's ease with technology through conversations and problem-based learning. Trust and open communication are essential in any community of inquiry (Shea et al. 2005; Richardson et al. 2012). Just as students

must feel comfortable speaking and learning online, so must course designers develop open and trusting relationships with instructors at all stages of course design. Establishing dialogue and listening carefully to instructors' issues promotes deep thinking and critical reflection. Conversations about online theories, teaching practices, and LMS challenges can foster a stronger relationship between designers and instructors and contribute to long-term success.

A second lesson learned is the overwhelming need for collaboration. Instructional designers work across disciplines that have competing priorities and learning outcomes. Working within these different disciplines means that designers must not only discuss the course with an instructor, but must also consider collaborating with other individuals and groups on campus. Groups can be intentionally formed based on the instructors' digital expertise, and course designers can tailor their teaching goals to meet instructors' needs. Instructional designers must also collaborate with other colleagues and share their best practices. Sharing diverse perspectives and learning what does and does not work well helps instructional designers communicate with instructors about how to navigate the technology. Reviewing the achievements and setbacks of other instructional designers helps uncover digital patterns unique to each LMS. Collaboration also builds consensus among designers and instructors about best practices. Best practices vary depending on the instructor's technology skill, so these team discussions can help course designers review and restructure diverse courses. As technologies change, the instructional designer works with the instructor to develop strategies that address different learners and different learning outcomes. Collaborating with other instructors and designers fosters intellectual growth and a community of inquiry that works together to create cohesive, engaging online courses.

A third lesson learned is the need for flexible course design support. Instructional designers have practical knowledge and skills that enable them to perform complex tasks quickly and easily. Yet instructors who have a spectrum of technological skill should be able to access, select, and retrieve course-specific resources that pertain to their individual needs. Virtual tools such as Open SUNY COTE or the RMCC Moodle Toolbox provide an array of online resources that help novice, intermediate, and expert online instructors with their course design and delivery. Online resources that engage instructors in a community of inquiry promote feelings of competency and engagement. Flexible resources enhance a community of inquiry by building skills and knowledge about course design. Evidence-based research articles, checklists, blogs, discussion, and live chats are a few options that enable online instructors to self-direct their own course design strategies. Such resources re-position the instructional designer as a facilitator, rather than a teacher. Instructors who self-direct their professional development require less one-on-one guidance from the design team, allowing instructional designers greater flexibility to help other instructors. A flexible approach to course design support can truly help instructors resolve real online problems and ease the online transition process.

A fourth lesson learned is the added value of ongoing professional development opportunities. Workshops, forums, and conferences about online or blended learning allow instructors to share ideas with other online practioners. In cases when instructors may not have time to attend professional development sessions, emerging technologies allow access to online conferences, webinars or other networking opportunities from the comfort of their own offices. For instance, the Open SUNY COTE website offers

virtual conference opportunities. This website allows faculty to share ideas and participate in an online learning community. Research related to connected learning and professional development (Beach 2012; Lock 2006; Njenga and Fourie 2010) attests to the importance of new web-based venues for professional development, especially as online instructors are expected to become more adept at teaching an increasingly mobile study body. Professional development opportunities can help instructors self-identify their own technological skills gap and work with instructional designers to adapt support sessions to the instructors' ability.

11 Conclusion

The purpose of this inquiry is to explore the skills gap faced by instructors transitioning to online learning and how instructional designers can best support these instructors. Instructors face a number of challenges related to online course development. Individual knowledge about online theories, comfort with technology, experience teaching online, and institutional support systems influence how instructors build meaning and create practices in their online course. These strategies are unique for each course designer, instructor, and institution. These two case studies suggest multiple strategies to support quality online course development. Instructional designers must take a flexible approach to course design support that prioritizes dialogue and collaboration. Designers should explore ways to acknowledge gaps in instructors' skills, abilities, and contexts that shape online experiences. Team-based learning, critical conversations, and online resources differ from institutional practices that estrange and isolate instructors in their silo disciplines. Instructors who collaborate and share ideas with other educators and instructional designers promote more focused, substantive sessions that address real problems. More importantly, engaging in conversations with other instructional designers and instructors contributes to an evolving community of inquiry that builds on successive achievements. Mapping progress through non-linear approaches to course development can alleviate some of the pressures instructors face when preparing a course for online delivery. These diverse strategies provide opportunities for instructors and designers to engage in larger learning communities that can strengthen the caliber of teaching and promote innovative online programming.

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