Evidence-Informed Online Graduate Education: Best Practices, New Ideas and Policy Implications

Prepared for the Yeates School of Graduate Studies (YSGS)

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1 Introduction

As the educational needs of diverse graduate students grow and change, academic institutions are presented with new opportunities to challenge current approaches to graduate education while maintaining existing high caliber academic practices. Research findings suggest that both undergraduate and graduate students highly value the flexibility of an online learning environment (Alexander, Perreault, Zhao, & Waldman, 2009; Nollenberger, 2015; Varela, Cater, &Michel, 2012). In fact, for many graduate students across Canada online education is the only educational delivery modality utilized for degree completion.

The purpose of this project was to systematically explore and offer insights and recommendations related to the implementation of online graduate education at the Yeates School of Graduate Studies, Ryerson University. Data compiled for the project were drawn from extensive internal and external contextual scans responsive to the question, “What are the most effective evidence-informed approaches to online graduate education?' and "How can experiential learning be effectively incorporated into online learning environments?". The findings from this report will serve to inform the development and implementation of evidence-informed online graduate education responsive to the unique context of Ryerson University. Although both the terms instructor and educator are used by authors identified in the report, the term educator will be used for the purposes of this report.

This report presents best practices for educators to make informed decisions in the planning and implementation processes for online graduate education. In doing so, this report aims to stimulate an on-going discussion of effective practices that hold both the potential to enhance online education at Ryerson and the success of faculty transitioning to online graduate education.

2 Methodology

The primary guiding question for data gathering specific to this project was, "*What are the most effective evidence-informed strategies and tools to facilitate the engagement of graduate students in online graduate education?"* A secondary question was, "*How can experiential learning be meaningfully integrated into online graduate education?"* The following strategies were employed to gather data responsive to these specific questions:

Literature Search

Key concepts used to conduct the search included online education, distance education, student retention, graduate education, student engagement, and accommodation. Academic Search Premier, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Education Resource Information Center (ERIC), and bibliographies of retrieved articles were used in the search process.

The initial search was restricted to literature focused on graduate-level education. However, because of the limited research-based results found with this specific focus, the scope was expanded to include studies involving mixed graduate and undergraduate studies, literature reviews, the general higher-education literature, and best practices in high education. A total of 48 articles were retrieved. Studies and best practices that focused only on undergraduates or colleges were excluded. Twenty-three articles meeting the inclusion criteria, published since 2000, and written in English were included in the review.

3 Online Graduate Education

3.1 External Scan

3.1.1 Theoretical Perspectives

The following presents a review of select theoretical perspectives most frequently identified in the scholarly literature and determined to be of direct relevance to online graduate education. The following points summarize the key points of each theoretical perspective that are frequently cited in the literature:

- Social constructivism suggests that knowledge is co-constructed and that individuals learn from one another, thus argues that is critical for the learner to be engaged in the learning process.
- The community of inquiry (COI) model describes how learning takes place for a group of individual learners through the educational experience that occurs at the intersection of social, cognitive and teaching presence.

3.1.2 Social Constructivism Theory (Vygotsky)

Social constructivism (Vygotsky, 1978) views learning as a process in which a learner works to construct new meaning through active involvement. Vygotsky notes that the role of the educator is to establish an environment in which active participation between and among learners and the educator can occur. Learner must engage in interaction with their educator, peers, and content, and attempt to make sense of what they encounter.

In an online graduate education setting, the flow of information may potentially be constrained by technology, equipment, and the asynchronous nature of much distance learning. Information flow, therefore, requires attention and planning beyond that needed in a face-to-face educational setting. The educator must select technologies and tasks that will allow for the communication and exchange of information needed to support the construction of knowledge over a distance (Vrasidas, 2000). Learner–learner, learner– educator, and learner–content interaction function in an inter-

dependent manner, with each potentially contributing to and benefiting from the others as students and educators participate in an online learning environment.

3.1.3 The Community of Inquiry (COI) Model

The community of inquiry (COI) model is a theoretical framework proposed by a team of educator–researchers who aimed to identify the “crucial prerequisites” of a “successful higher educational experience” and “how these should function when that experience is computer-mediated” (Garrison, Anderson, & Archer, 2000, p. 87). A COI is "comprised of an educator and students, and both need to be present in different ways to cultivate an online environment that is conducive to “deep and meaningful learning” (Rourke & Kanuka, 2009, p. 23). In this model, three processes—cognitive, social, and teaching—work together to constitute a community of inquiry. These processes overlap and are highly interdependent: “A community of inquiry integrates cognitive, social, and teaching elements that go beyond social exchanges and low-level cognitive interaction” (Garrison & Cleveland-Innes, 2005, p. 135).

The COI model is different from many other program-assessment strategies, and its focus is particularly useful in assessing online programs. While many assessment plans for online programs are simply designs that have been successfully used in face-to-face programs, the COI model was developed solely with computer-mediated communication in mind (Rourke & Kanuka, 2009). As such, its objective is to fold the online learning environment into the assessment process (Rourke & Kanuka, 2009). This focus helps educators and administrators to assess specific stakeholder concerns. The legitimacy and rigor of online programs are determined by evaluating if students are engaging in meaningful ways, and report that they experience a sense of connectedness to a community of student learners (Rourke & Kanuka, 2009). The unique evaluative component of the COI model offers data that can be used to enhance the experience of learners engaged in online education.

In summary, the focus of the COI model is to determine what student and educator behaviours and activities best contribute to student success in an online course and why they are effective. Garrison, Anderson and Archer (2000) use the three processes—cognitive, social, and teaching—as lenses through which to identify and assess these behaviours and activities. When students successfully exhibit cognitive

processes in an online course, they are actively engaged in creating meaning and confirming their understanding of complex concepts (Garrison & Cleveland-Innes, 2005). The goal of online learning is that students acquire the set of behaviours and actions that constitute cognitive presence, and the other presences (social and teaching) support the full engagement of each student's cognitive presence in the course. Garrison and Cleveland-Innes highlights that cognitive presence is characterized by students. They further argue that cognitive presence is sustained interaction and reflection and by an educator who models and scaffolds the process of critical inquiry. For example, educators can do so by setting up a complex problem, prompting students to research and reflect on it, and then encouraging students to test their new knowledge by applying it to the problem in meaningful ways (Garrison and Clevland-Innes, 2005). Garrison and Cleveland-Innes (2005) further posit that students need to cognitively engage in the material, assignments, discussions, and course tasks to achieve deep learning.

3.2 Online Graduate Literature Review

3.2.1 Social Presence

Garrison (2017) posits that social presence sets the overall environment of the online course and consists of the following three overlapping categories: personal connection, open communication, and group cohesion. In addition, course design and facilitation that provide opportunities for students to engage with each other and the educator is also considered to be a vital component of online education (Garrison, 2017). Social presence can be considered as opportunities provided or offered in the online environment to foster a high level of student-student or student- educator interaction. Garrison notes that such interactions can occur either through asynchronous or synchronous discussions, email, video conferencing, texts, blogging, and phone conferences. Essentially, any strategy used to assist in making students feel engaged and connected with each other and the educator is considered social presence (Lowenthal, 2010). Both student-student interaction and student- educator interaction have the potential to influence students' engagement in online learning (Buelowet al., 2018; Purarjom and Langrudi et al., 2016). Specifically, individual students are more engaged in learning when able to interact with the educator and other students (Dixon,

2010; Holzweisset al., 2014). Social presence can be facilitated through course design elements and facilitation techniques that encourage student-student interaction and student- educator interaction such as group projects, class discussions and discussion boards.

3.2.2 Student-Student Interaction

Educators play a salient role in student engagement in online classes by designing courses that encourage student communication, participation, and interaction (Johnson, 2003; Lewis & Abdul-Hamid, 2006). Students report a higher level of course satisfaction when there are opportunities to interact online with peers (Beaudoin et al., 2009), especially early-on in the course. Specifically, Martin and Bolliger (2018) report that students perceived icebreaker discussions at the beginning of a semester as the most important engagement strategy in an online course. Martine and Bolliger (2018) state that icebreakers and other introductory type activities foster students' sense of belonging, which is important in terms of establishing a social presence in an online class.

In addition to icebreaker activities, educators can encourage student-student interaction through weekly discussion boards (Martin & Bolliger, 2018). The use of discussion boards can further engage students who may not be as engaged in face-to-face courses. McBrien et al. (2009) found that students who infrequently participated in face-to-face discussions may be more likely to participate more in online discussions. Garrison (2017) notes that the role of the educator is to serve as the discussion facilitator to encourage discussion with students who are hesitant, and at the same time know how to make students sufficiently comfortable to allow for substantial discussion. To this end, educators can use discussion boards as a means for students to take part in collaborative problem solving and critical thinking activities, which can serve to further engage students in the online environment (Gaytan & McEwen, 2007; Robinson & Hullinger, 2009). Although collaborative work can be challenging in an online environment, students report that peer interaction through collaborative projects allows them to learn the course material on a deeper level (Holzweisset al., 2014). Student self-reports indicate that student-led discussions are the most effective online activities and online discussion boards also have the potential to play an important role in

promoting social presence, student engagement, and collaborative inquiry (Holzweisset al., 2014).

3.2.3 Student-Educator Interaction

Student–educator interaction can be considered one of the most crucial factors in enhancing graduate student satisfaction and engagement in online courses (Lohmannet al., 2018; Nandiet al., 2012). Martin and Bolliger (2018) found that students perceived that engagement strategies used to promote educator-student interaction were more valued than strategies used to promote student-student and student-content interactions. Some students report that their best learning experience in an online course is interaction with their instructors (Holzweisset al., 2014) with instructor accessibility being the key in their overall satisfaction (Boling et al. 2012). The rapport that educators build with their online students can also positively impact student outcomes (Glazier, 2016To enhance the level of engagement, student-educator interaction should be regular and consistent (Britto & Rush, 2013). Such interaction could include communication strategies such as recurring emails and announcement reminders (Martin & Bolliger, 2018). Student-faculty interactions should be open (Gaytan & McEwen, 2007; Garrison, 2017), timely (Robinson & Hullinger, 2009) and occur in a multitude of ways such as email communication, phone and video conference, texts and announcements (Dixon, 2010).

3.2.4 Course Design and Organization

Course design refers to the preparation of a course prior to its implementation and relation to the setting of course goals and objectives as well as diverse assessment processes and specific teaching and learning activities that are directly aligned with the stated goals, objectives and that include student choices to enhance student engagement (Proisman, 2015; Kumar & Wideman, 2014). Each component of course design and organization should aim to actively engage students with the goal of enriching their academic and personal development (Robinson & Hullinger, 2009 and that enhance higher-level thinking skills (Cundell & Sheepy, 2018).

Many students find highly organized online courses both effective and desirable (Jaggars & Xu, 2016; Lewis & Abdul-Hamid, 2006). Preisman (2014) states that students value a well-structured and organized course more than the educator’s social

presence in the course (Preisman, 2014; Beaudoin et al., 2009). A well-organized online course reflects intuitive navigation, a clear and consistent structure, clear expectations and directions, and navigation instructions on where to start and find course materials and resources (Fabianic, 2002; Cundell & Sheepy, 2018).

3.2.5 *Web 2.0 Technologies*

Web 2.0 (also known as Participative and Social Web) refers to websites that emphasize user-generated content, ease of use, participatory culture and interoperability (i.e., compatible with other products, systems, and devices) for end-users (source?). Web 2.0 technologies help develop a community of learners in online classes through the promotion of communication and collaboration between students and educators. Web 2.0 technologies allow users to create, share, find, and remix web-based content. The use of Web 2.0 technologies deeply engages students and promotes learning activities that encourage online graduate student participation and make learning more interesting, meaningful, and authentic (Wankel & Blessinger, 2013). There are numerous examples of Web 2.0 technologies, including discussion boards, blogs, wikis, social networking, podcasts, and mobile learning.

Research findings support the use of diverse technologies to engage graduate students in online classes (Dixon, 2010; Henrieet al., 2015). Researchers Chen, Lambert, and Guidry (2010) also found a positive relationship between the use of Web 2.0 technologies in online courses with both student engagement and the achievement of proposed learning outcomes. Educators can also consider other modes of technology to engage students in discussion and interaction. For instance, social media, such as Twitter, may be an effective online learning tool for promoting student engagement (Bledsoe et al., 2014). In Bledsoe and colleagues' work, they outline an evaluative project in which students were required to collaborate in creating new hashtags and opening up new and relevant interactions within the Twitter environment, as part of a fully online course. The use of Twitter as a mode of applied learning in a postsecondary context, particularly in online courses, has been documented and evaluated in the literature for over a decade (Bledsoe et al., 2014).

Web 2.0 technologies that use asynchronous discussion enhance student engagement by allowing students more time for critical reflection (Robinson & Hullinger, 2008). Web

2.0 technologies alone will not increase student engagement; rather the key elements are thoughtful integration of technologies in ways that purposefully aim to enhance engagement and ensuring ongoing evaluation (Ehrmann, 2004; Escheng & Usoro, 2016). The increasing use of innovative Web 2.0 and instructional technologies like VoiceThread, Flipgrid, and Prezi, as well as new and enhanced features in course management platforms, ongoing evaluation of the efficacy of such technologies is essential to ensure that these practices affect student engagement in a positive way. While these technologies represent promising ways by which to enhance students engagement, ongoing evaluation of students' perceptions of their usefulness, ease of access and use, and motivation to use them, is important (Escheng & Usoro, 2016).

The literature indicates that adding technological elements results in an increase in retention in graduate and undergraduate courses. In addition, Fiorella, Stull, Kuhlmann, and Mayer (2018) found that the social and cognitive cues that the educator gives throughout a video lecture can influence a student's learning, attention, and or engagement in video lectures. Another study by Fish (2017), found that educators incorrectly believe that anywhere that informational technology is implemented in the online classroom, this equates to student learning. Thus, an educator's technology readiness or technology self-efficacy may affect the quality of technology inclusion, consequently having an impact upon student achievement. Technologies need to be incorporated based on need and implemented using some sort of evaluation tool to ensure that the technology serves a clear and important purpose. When incorporating technology into the online classroom educators should consider the following questions:

1. **Is the technology accessible?**
2. **Is the technology easy to use?**
3. **How will the addition of technology benefit student learning?**
4. **What level of digital literacy is required to engage with the technology?**

3.2.6 Summary of Online Graduate Education Literature Review

A literature scan conducted examined online education within the context of graduate education. Various studies have investigated what elements serve to create online classes that are effective and engaging. Student individual and behavioral

characteristics, course design, and course facilitation are elements proposed to impact the level of engagement in an online course (Purarjom & Langrud & Chen 2016; Nguyen, 2016). Nguyen (2016) further posits that teaching presence, as well as social and cognitive presence, also play an important role in terms of student satisfaction and engagement in online learning. Teaching, social, and cognitive presence also reflect the three interdependent elements of the Community of Inquiry (CoI) which Garrison (2016) identifies as the most widely used framework for online and blended learning. Garrison (2017) further posits that the CoI framework promotes critical thinking and collaboration both of which contribute to meaningful and engaging learning experiences.

The following literature review utilizes both the COI Framework and Social Constructivist (SC) lenses to explore the literature and guide a critical analysis of the holistic needs of both graduate learners and educators. Specifically, both COI and SC, consider cognitive, social and teaching factors within online learning and teaching environments. The outcome of this review is the identification of best practices in online graduate student engagement.

Key findings:

- Social presence in an online environment can be considered as the opportunities in the online environment where student-student or student-educator interaction happens. Lohmannet al. (2018) and Nandiet al. (2012) posit that social presence is critical to graduate learning in order to prevent social isolation, and is best facilitated through course design elements and educator facilitation techniques.
- Students self-report higher course satisfaction when there are opportunities to interact with peers online (Beaudoin et al., 2009), particularly when this engagement occurs early-on in the course.
- In an online graduate setting, student–educator interaction can be considered one of the most crucial factors in enhancing student satisfaction and engagement in online courses (Lohmannet al., 2018; Nandiet al., 2012). Martin and Bolliger (2018) found that students perceived that engagement strategies used to promote educator-student interaction were more valued than strategies used to promote student-student and student-content interactions.

- Learning and satisfaction in graduate online classes stemmed from teaching presence. The literature suggests that teaching presence can best be established through course design and organization, facilitating discourse, and direct instruction to graduate learners.
- Graduate online learning studies support the use of diverse technologies to engage students in online classes as in Web 2.0 technologies, including discussion boards, blogs, wikis, social networking, podcasts, and mobile learning (Dixon, 2010; Henrieet al., 2015).

3.3 Internal Scan

Interviews with Expert Informants within Ryerson University

Graduate faculty members at Ryerson were interviewed in-person to explore their experiences with online teaching and learning. Key informant interviews were semi-structured and, where possible, questions were open-ended to allow for explanations regarding underlying assumptions. Faculty members and administrators were asked to speak to their respective engagement with online learning experiences. The interview data has a specific focus on how online learning is perceived by graduate faculty members and operationalized within graduate studies at Ryerson.

Key Themes Derived from Interview Data

Promoting belongingness is key to addressing issues of learner isolation

- Educators point out that a learner's isolation is one of the challenges of online learning that needs to be considered and addressed.
- The range of online communication strategies that have become available in recent years has fostered students' sense of belongingness (e.g. Zoom, D2L discussion boards) and offer more connectivity between educators and students, as well as among students.

- Current synchronous communication technology affords students and educators the ability to communicate using real-time video and audio conferencing, virtual groups, online screen sharing, and interactive chats.
- Synchronous tools allow more authentic and interactive learning environments that are helpful for building trust and bonding among learners.
- Asynchronous online discussion forums, in which students respond to questions posed by the educator and/or fellow students and where they share their experience, tend to develop a sense of community among learners.
- Conversation initiated by students based on their needs, rather than by the educator, tends to heighten the experiential value of discussion forums.

Learner-centeredness must be considered in aspects of online learning

- Educators reported that, compared to an on-site classroom, an online class offers learners greater flexibility and control over the learning process
- A learner often decides when, where, and from what sources they learn from. It is important that educators endeavour to focus on an individual learner, their interests, and their prior experiences and learning styles.
- Drawing upon students' experience and encouraging students to reflect upon their situations in relation to the course materials and readings are much more effective in online classes.
- In an online environment, educators found students most engaged when they are allowed to take charge of the learning process (e.g. lead discussions), with the educator assuming the role of facilitator.

Agency

- In an online learning environment, students are considered to be cognitive and responsible actors who persistently inquire and take responsibility for the learning process.
- Through dialogue and interaction in online lectures, group discussions and discussion boards, students share the responsibilities of the learning processes.

- Fostering a sense of agency amongst students online by building authentic experiences into their education and afford an appropriate level of challenge to engage students.

Social interaction and social presence is highly valued amongst online learners

- Due to the asynchronous nature of most online environments, it is necessary for online learners to develop social bonds, which fosters a sense of feel security and open communication with their peers.
- Online learners develop social bonds which foster a sense of security and an openness to communicate with their peers.
- Group based assignments, discussion board and break-out group discussions have been well received amongst students, and effective in the promotion of social interaction amongst students online.

4 Online Graduate Experiential Learning

4.1 Online Experiential Learning (EL) Literature Review

4.1.1 Methods

A literature search was conducted with a specific focus on EL within the context of online graduate studies. Key concepts used to conduct the search included "online education", "distance education", "experiential learning", "masters" and "postgraduate". Academic Search Premier, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Education Resource Information Center (ERIC), and bibliographies of retrieved articles were used in the search process. The initial search was restricted to literature that addressed graduate-level education. However, because of the limited research-based data found with this specific focus, the scope was expanded to include studies involving mixed graduate and undergraduate samples, literature reviews, the general higher education literature, and best practices in high education. A total of 35 articles were retrieved. Only those articles that described research or best practices supported by the research were included. A total of 11 articles meeting the inclusion criteria, published since 2000, and written in English were included in the review.

4.1.2 Benefits of Experiential Learning in Online Graduate Studies

Experiential learning has been found to build social presence and engagement (Garrison, Anderson, & Archer, 2001) in online courses, and because online learners may not have opportunities for a traditional campus experience, it is important to provide ways learners have the opportunity to interact with others outside of their online classroom. There are several types of EL models including problem-based learning, project-based learning, service-learning, and place-based education (Wurdinger & Carlson, 2010), as well as field experiences, practicums, internships, study abroad and inquiry-based learning. Any of the types of EL activities would allow learners to interact with others in meaningful ways. The online site becomes the learners' "campus" while allowing them to gain meaningful learning experiences (Gee, 2004, p.31).

4.1.3 Online Project and Scenario Based EL

The Buck Institute for Education (BIE) states that Project Based Learning (PBL) is a dynamic online classroom approach in which graduate learners actively explore real-world problems and challenges, and learners are inspired to obtain a deeper knowledge of the subjects they are studying (Buck Institute for Education, 2015). More specifically, it is through project-based learning that the learner investigates significant questions that require them to gather information and think critically (Buck Institute for Education, 2015). The core teaching approach of PBL also allows the learner to learn through motivation, interest, and to apply new knowledge in a problem-solving context. Some examples of PBL include integrating current events into learning or problems, creative writing exercises, experiments, debates, and oral presentations (Buck Institute for Education, 2015). PBL strategies include creative expression, role play, mentorship and apprenticeship and as a result are high-traffic spaces for innovation and learning in graduate education. It is conceivable that every online course can incorporate a PBL assignment – wherein learners believe their contributions matter and they feel socially connected. It was found that PBL in online courses was found to increase active and continuous engagement (Evans and Taylor, 2005).

Evans and Taylor (2005) define scenario-based learning as “stories focused on a user or group of users, which would provide information on the nature of the users, the goals

they want to achieve and the context in which the activities will take place" (p. 8). Scenario-based learning (SBL) has a significant advantage over more traditional learning methods within the online course environment (how and included source here) It is widely accepted that learners tend to learn best when their learning is part of a "highly motivated engagement with social practices which they value" (Gee, 2004, p. 33). Jenkins et al. (2009) note that educators have long known that learners learn more through direct observation and experimentation than from reading about something in a textbook or listening to a lecture.

Gee (2004) identified five types of PBL scenarios:

- Skill-Based Scenario (SBL): The learner is expected to demonstrate skills and knowledge that have already been acquired.
- Problem-Based Scenario (PBL): Ideal for situations where learners have to integrate their theoretical and practical knowledge to investigate a problem. Decision-making, logical reasoning, and critical analyses are integral components of these scenarios.
- Issue-Based Scenario (IBS): Learners get to take a stand on issues, usually with humanitarian perspectives, and explore these to understand how these affect decision-making in professional spheres.
- Speculative Scenario (SS): Learners have to predict the outcome of an event in the future based on their knowledge and deductions (Gee, 2004).
- Gaming Scenario (GS): The use of games as learning tools.

4.1.4 Peer and Cooperative Learning in Online Courses

Wankel and Blessinger (2013) outline the following benefits for both learners and educators when engagement in team projects is a requirement of the course. The opportunity to work with other classmates closely on an assignment provides the chance to learn a great deal from others. It is important to consistently engage online learners in the course content (Wankel & Blessinger, 2013). Team projects inherently bring a social aspect to the forefront. Opportunities for team meetings, sharing, and time to contribute to the overall project make learners feel more connected to others in the online course. In order for team projects to be most effective and accessible to all

students, educators should use surveys at the start of the courses to determine student's preferences (Wankel & Blessinger, 2013). Preference surveys ensure that learners are paired with peers who they would work best within an online environment by considering factors such as where students live, time zones and preferred working hours, digital tools for collaboration.

4.1.5 The Role of Assessments

While learner engagement has a well-established role in learning, comprehension, and academic performance EL is closely related to career or occupational outcomes (Kuh, 2008). There are several ways to assess EL activities in the online classroom. Similar to active learning, most of these assessment methods are based on individual or group reflections and reflective writing assignments that allow learners to focus their learning on particular events or scenarios while also presenting a final deliverable at the end of the course (Wankel & Blessinger, 2013). Wankel and Blessinger specify that oral presentations effectively informed educators of the key learning points that were either achieved or were a challenge among learners.

Given that learners are working on various assignments at different times, the educator cannot assume that every learning experience will be valued in the same way. The use of EL techniques to assess learning includes oral presentations, on-the-job or internship assessments, role-playing exercises, interviewing experts in the field, and workplace recommendations for improvement (Wurdinger & Carlson, 2010). These diverse assessment methods will continue to evolve over time, especially in online learning environments where timely and constructive feedback is key.

4.1.6 Asynchronous and Synchronous Learning in an Online Experiential Environment

The asynchronous learning model is self-paced and allows the learner to complete course materials at their own pace. Educators working within this learning modality can post course lectures, assignments and knowledge checkpoints that are completed individually by each learner (Wurdinger & Carlson, 2010). However, learner interaction in many asynchronous environments takes place solely through discussion boards and other designated areas using the LMS tools (e.g. blogs or wikis) assigned by the

educator where the learners are required to provide a response or feedback to one another (Wurdinger & Carlson, 2010). Creating opportunities for active and EL is found to help ameliorate the lack of collaboration and engaging activity in asynchronous online courses.

The synchronous learning model inherently requires active learner participation with the educator and their peers and occurs at specific dates and times throughout the duration of the course. Learners are required to attend and participate fully in synchronous learning activities and assignments. Educators working within this learning modality can also post course lectures and assignments, similar to the asynchronous learning environment. However, the key difference in synchronous learning is that it provides multiple ways in which educators and learners can share, collaborate and exchange knowledge in a virtual platform (e.g. real-time class discussions, live group collaboration) no matter the distance between them. Wurdinger and Carlson (2010) posit that learning in the 21st century calls for online learning environments to be participatory that does not depend on the learning modality (e.g. asynchronous or synchronous). It is important that online educators create instructional strategies that cater to not only diverse learning styles but also students' unique learning comprehension and capacity (Wankel & Blessinger, 2013). Some learners may prefer to go through the content multiple times, which can result in them taking longer to complete the content within a given timeframe. Other learners may prefer to get through the content more quickly. Through active and EL activities, these quality interactions present in synchronous online courses can be incorporated in asynchronous online courses by alternating the focus of the learning activities (Wankel & Blessinger, 2013).

The YSGS Experiential Learning Repository is a rich resource for the development of EL within the diverse graduate programs at Ryerson University. The repository is available in the D2L dashboard under the code org_ysgs_experiential_learning.

4.2 Summary of Findings

- In order to create authentic learning experiences for graduate students it is important to integrate EL within graduate education curricula. EL creates a

unique experience that allows learners to learn while doing (Dewey, 1938). EL literature highlights best practises specific to EL and strategies to incorporate EL into online graduate education.

- Project-based (PBL) and scenario-based learning (SBL) is an effective EL tool by way of supporting the learner, providing helpful activities designed to enhance their online learning experience (Wurdinger & Carlson, 2010).

A major key attribute of PBL and SBL culture is the opportunity for networking where learners connect with others in the online class environment (e.g., educators and peers) and are also able to interpret, share knowledge and construct real-world cases (Buck Institute for Education, 2015).

- The literature (Buck Institute for Education, 2015; Garrison, Anderson, & Archer, 2001) notes that team-based assignments, with a strong social educator presence, are effective in fostering EL. The educator must be mindful in how to organize teams effectively and engaged in facilitating participatory and peer learning activities.
- Evidence suggest that is critical for educators to utilize diverse assessment methods (e.g. oral presentations, on-the-job or internship assessments, role playing exercises) and align EL-specific assessment strategies to the course learning outcomes (Wankel & Blessinger, 2013).

5 Accessibility and Inclusion in Online Learning

Several institutions with online undergraduate and graduate programs have implemented an Online Course Accessibility Support Model to ensure students and educators have adequate resources and support in a virtual environment (Sher, 2009). The evidence demonstrates that implementing the Online Course Accessibility Support Model (OCASM) improved communication between various departments on campus that provide faculty support services (Bastedo et al, 2013). Using OCASM, meetings are scheduled each semester with representatives from these departments to determine whether there are ways to improve these processes, increase the efficiency of meeting the needs of graduate students, and prevent duplication of efforts between departments (Bastedo et al, 2013). Thus, the workflow processes and communication between accessibility services staff also improved and became more efficient. Another benefit of creating this model has been an increased awareness across universities of the need to make online course materials accessible (Sher, 2009).

This model consists of three pillars that support and promote the overarching theme of accessibility in the online environment (Bastedo et al, 2013). Each pillar represents a process specifically designed to address the three types of accessibility requests. The base of the model represents a continuum of where the primary responsibility falls: from

faculty centric, in which the faculty has primary responsibility, to services centric, in which accommodations are mostly provided by student accessibility services (Sher, 2009).

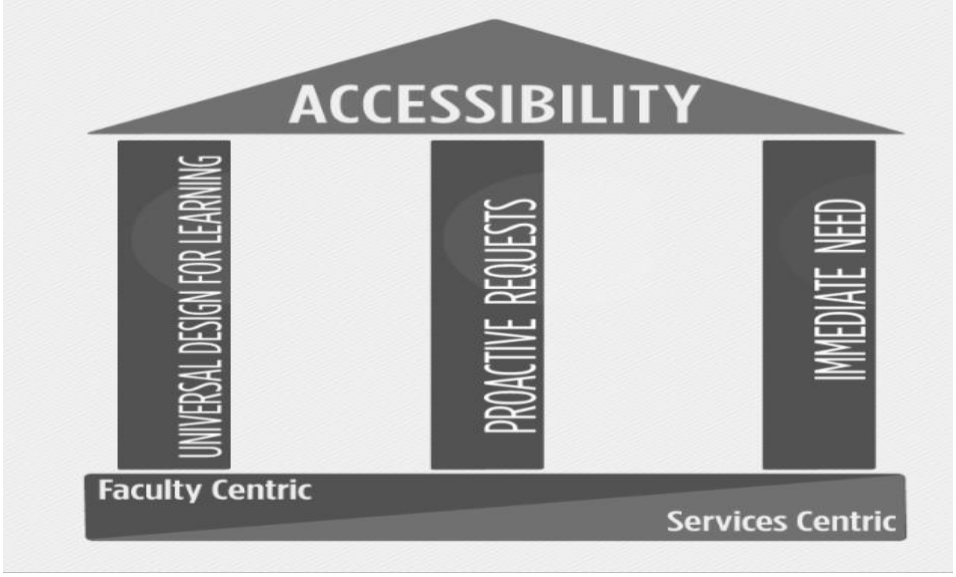

Figure 1 Online Course Accessibility Support Model

A. Universal Design for Learning

The first pillar, Universal Design for Learning, represents the application of Universal Design for Learning principles to the design and development of new online courses (Bastedo et al, 2013). When faculty apply these principles to online course materials, it not only benefits students with disabilities, but it also benefits students of varying abilities (e.g., reading level, age, English as a second language) (Bastedo et al, 2013). This pillar is on the faculty-centric side of the continuum for faculty members who choose to design and develop their course with UDL principles and accessibility in mind. University accessibility offices can provide support and assistance as appropriate to faculty implementing this approach (Bastedo et al, 2013).

B. Proactive Requests

The second pillar, Proactive Requests, represents situations in which either the faculty member seeks assistance in making their current online course materials accessible or an instructional designer working with a faculty member offers assistance in making the online course materials accessible (Sher, 2009). The proactive requests represent a

process to help these faculty members review and improve the accessibility of their course materials even when there is not an immediate need for accommodations (Sher, 2009). This pillar is in the middle of the faculty-centric and services-centric continuum since the responsibility is shared by student accessibility services and faculty (Bastedo et al, 2013).

C. Immediate Need

The third pillar, Immediate Need, represents situations in which a student with a disability or a unique learning need is enrolled in an online course and accommodations are required for the current semester (Bastedo et al, 2013). This model suggests a workflow to identify the tasks and responsibilities of university accessibility offices and faculty members in making online course materials accessible (Sher, 2009). A best practice indicated is that meetings are scheduled each semester with teaching faculty and accessibility offices to determine whether there are ways to improve these processes, increase the efficiency of meeting the needs of students, and prevent duplication of efforts between departments (Bastedo et al, 2013). Another benefit of creating this model has been an increased awareness across campus of the need to make online course materials as accessible as possible. All three approaches work together to address the potential need for accessibility accommodations (Sher, 2009).

6 Discussion

One of the primary challenges in online education is to develop a sense of community in the online environment. To establish such a community, several studies highlighted the significance of promoting social presence, interaction, and collaboration (Brindley et al., 2009; Cox & Cox, 2008; Kehrwald, 2009; Sher, 2009; Swan et al., 2009; Whipp & Loentz, 2009; Yuan & Kim, 2014). Findings highlight the importance of learners and educators making a joint effort to engage deeply in constructing collaborative interaction to create an effective online learning community.

Recognizing that student-centered learning is the key to effective online education, this report focused on evidence that reflected best teaching and learning practices and strategies as well as what constitutes a well-organized online course. One study by Bastedo and colleagues (2013) highlighted the experiences perspectives of students with disabilities on how this group of students perceives online learning. Bastedo and colleagues also address the views and challenges students with disabilities encountered when learning online. The study outlines best practices for institutions with online courses, emphasizing the need to clearly define roles related to making course materials accessible, and investing resources to ensure students gained access to accessible online course materials more quickly.

Effective online instruction includes, but is not restricted to, well-designed course content, motivating interaction between educators and learners, well-prepared and fully supported educators and institutional support more generally. The literature and research related to high-quality online graduate education presented in this report further confirms that educators play a critical role in the development and implementation of online graduate education.

Despite a common understanding that online learning leans toward more independent and self-regulated learning, graduate students have identified educators with a high online presence as the key to learning effectiveness and satisfaction. Observational and interview data indicates that graduate students hold the expectation that educators possess the knowledge and skill to facilitate and moderate online discussions, provide

prompt and meaningful feedback, and monitor and support students at an individual level.

Online learners benefit greatly from online learning communities in the following ways: (1) valuing of connectivity with one another that fosters sharing of knowledge and fulfillment of common goals (2) development of positive relationships and interactions between the educators and learners and among peer learners has the potential to enhance student performance and course satisfaction; and (3) through their interaction with peers individual students can receive, and contribute to knowledge and skill development a (Yuan & Kim, 2014).

Guided by the findings from the presented literature, research findings and educator interviews the following guidelines are offered for the development of an effective and engaging online learning community:

- establish a learning community at the outset of a course and nurture the ongoing engagement of community members throughout the term.
- ensure flexibility and responsiveness in your approach to student engagement in an online environment, i.e., if what are doing isn't working, make a change.
- involve both students and educators in building and sustaining the learning community.
- use a mixture of asynchronous and synchronous technologies to create a shared space in which students and educators can interact in a variety of ways.
- employ diverse strategies to stimulate discussions.
- encourage both task-oriented discussions and social interaction within the teaching/learning experience.
- integrate EL to enhance active engagement.
- create assignments and other evaluative tools that require student engagement and collaboration.

7 Conclusion

This review revealed many opportunities for YSGS to develop a comprehensive online graduate education strategy. It also reflected a shared understanding of the importance of engaging students, a commitment to creating meaningful and relevant learning experiences for and with students, and a wish to enhance and/or expand online learning activities, inclusive of EL.

The following recommendations **for YSGS** are guided by the data presented throughout the report:

- It is recommended that educators and faculty access professional development related to best practices in online course design and online teaching offered by the Centre for Excellence in Learning and Teaching (CELT). These following list resources are available by the CELT for educators delivering courses online:
    - Tips for asynchronous and/or synchronous content delivery
    - Overview of online learning video resources (e.g. Zoom, using polls, scheduling meetings)
    - Adapting courses to online delivery
        - Planning course framework
        - Adapting Content Delivery
        - Planning student-to-content interactions
        - Planning student-to-instructor interactions
        - Revisiting assessments
    - Guides with instructions and best practices for using technology to deliver content (e.g. tools, activities, templates for course content)
    - Course design tools for online delivery based on sound educational principles
    - Virtual consultations for personalized guidance and support
- It is recommended that educators and faculty review the ***YSGS Experiential Learning Repository*** which is a rich resource for the development of EL within the diverse graduate programs at Ryerson University. The repository is available in the D2L dashboard under the code org_ysgs_experiential_learning.

- Identify opportunities for early intervention for graduate students who may need accommodations to successfully engage in online learning and teaching.
- Provide guidelines for how a tracking system of academic consideration requests can be used by graduate program directors and administrators, associate deans, or directors of research for early intervention processes.
- Actively collaborate with Student Affairs and the Career and Co-op Centre to develop an orientation/transition program for incoming students with disabilities that reflects all aspects of the graduate experience (course work, extracurricular work, employment).

8 References

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