Using the 3E Framework in Promoting Adult Learners' Success in Online Environments

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The growth of technology has facilitated a rapid expansion of online learning opportunities in postsecondary education, where adult learners are availing themselves of these classes and programs. To facilitate the success of adult learners in online environments, instructors must consider the learning characteristics of adult learners and intentionally design courses that leverage their strengths while addressing their challenges. The purpose of this paper is to utilize the 3E framework to analyze the implementation of e-learning technologies in order to achieve those goals. In this conceptual paper, first the 3E framework is described, and then the literature on adult learning in online environments is presented using a qualitative meta-synthesis approach. The 3E framework is then applied to examine e-learning technologies to highlight the implications this lens may have in the design and implementation of these technologies.

La croissance de la technologie a facilité l'expansion rapide des occasions d'apprentissage en ligne dans le monde de l'éducation postsecondaire, où les adultes se prévalent de ces cours et ces programmes. Afin de promouvoir la réussite des apprenants adultes dans ces environnements en ligne, les instructeurs doivent tenir compte des caractéristiques d'apprentissage des apprenants adultes et ensuite concevoir des cours qui exploitent leurs forces tout en abordant leurs points faibles. À cette fin, la présente recherche emploie le cadre 3E (en anglais enhance, extend, empower: améliorer, accroitre, autonomiser) pour analyser la mise en œuvre de l'apprentissage électronique. Cet article conceptuel commence par décrire le cadre 3E pour ensuite présenter, par une synthèse méta-analytique et qualitative, la recherche portant sur l'apprentissage par les adultes dans les environnements en ligne. Par la suite, le cadre 3E est appliqué à l'étude des technologies en ligne pour mettre en valeur les incidences que pourraient avoir cette perspective sur la conception et la mise en œuvre de ces technologies.

The increasingly diverse population of students attending our campuses means that postsecondary institutions need to be more responsive to many different types of learners who bring particular strengths and unique challenges in the learning environment (Gottheil & Smith, 2011; McGrath, 2010). Within this growing contingent of diverse learners is a very specific subgroup of learners, referred to as mature learners (Steele, 2010). Although the definition of a mature learner may vary somewhat, mature learners are those who are 25 years of age and older and are assumed to be an independent adult (Steele, 2010). In addition to the personal and academic challenges and strengths that all learners bring to the classrooms, mature learners

have a number of unique needs. According to Steele (2010), they may have been out of an academic setting for a significant amount of time, and they balance their academic commitments with their personal and professional lives. One of their biggest challenges concerns their personal responsibilities such as family support and additional financial commitments (Andres & Adamuti-Trache, 2008).

One of the ways in which adult students have chosen to address their life choice challenges is to access distance and online learning, which allows them the flexibility of choosing when to engage in learning activities (Steele, 2010). Okpala, Hopson, Fort, and Chapman (2010) noted in their study that convenience was the most common motivation for engaging in online courses. Cox and Belbin (2010) identified that students chose distance learning because of "(a) lifestyle choices, (b) financial expedience, (c) the challenge of learning, and (d) the excellence of the academic product" (p. 233). However, this approach to learning brings its own challenges, such as issues with using technology and the lack of personal interaction with instructors and peers (Donavant, 2009).

Purpose

The purpose of this paper is to examine the use of the 3E framework (Smyth, Bruce, Fotheringham, & Mainka, 2011) as a guide for faculty implementation of e-learning technologies; utilizing this model can be a pedagogical tool for determining technology use that most appropriately addresses the needs and styles of adult learners. There was one research question for this study: How can the 3E framework inform e-learning technology use in course design and delivery to maximize learning outcomes? Smyth et al. (2011) developed a conceptual framework that defined three broad uses of technology for learning that exist on a continuum: Enhance, Extend, and Empower. Enhance activities reinforce and actively support students' learning; Extend activities allow for deeper individual and collaborative learning through increased student control and choice; Empower activities support development and creation of higher order individual and collaborative knowledge and application. The Enhance, Extend, and Empower conceptual framework developed by Smyth et al. will be described and applied to e-learning teaching. Following this, a qualitative metasynthesis (Zimmer, 2006) of scholarly research will explore the learning styles and needs of adult learners, adult learners in online environments, and the unique challenges these learners present. The framework will be used to a) articulate the types of activities that can promote mature student learning, and b) investigate how to integrate technology to encourage mature learners to engage in more sophisticated applications of online learning.

Significance

Through the application of the Enhance, Extend, and Empower framework, faculty and instructors can better understand the potential outcome of the incorporation of the various types of learning technologies and tools. Determining effective strategies to support adult learners in online coursework will be beneficial for individual learners as well as for the institution in terms of the positive impact these technological strategies will have on improving access and persistence rates for adult learners. Of primary importance is careful consideration for using e-learning technologies in improving academic outcomes—including learning outcomes and degree completion—for adult learners.

This exploration is situated within the context of adult education in a Canadian context, specifically a Western Canadian university; the particular geographic focus is noteworthy because of the provincial jurisdiction of education. As such, each provincial government determines how to support post-secondary education, including the allocation of operational grants. The technological infrastructure and support for distance learning may vary from one province to the next, so application of the Enhance, Extend, and Empower model will be dependent on the particular context of the province and the post-secondary institution.

The 3E Framework

Smyth, et al. (2011) constructed their 3E framework to depict three levels of engagement with technology. The uses are aligned with the types of learning they enable. The uses of technology include applications that create efficiencies; improve accessibility and/or flexible timing; encourage enriching interaction; and facilitate development of key skills, abilities, and literacies (Laurillard, 2002). The 3E Framework, designed by Smyth et al. (2011) includes three areas of engagement: Enhance, Extend, Empower, which is depicted in Figure 1.

These stages are not discrete levels; depending on the intended purpose of the activity or application, tasks in one stage can appear very similar to a task in another. It is the purpose or intent of the task that defines the level that it represents. Additionally, even though these stages are on a continuum, the arrangement of the levels does not suggest that Empower is the ideal outcome for all tasks and purposes. Depending on the content, subject area, and identified learning outcomes, Enhance and Extend may be much more appropriate.

E-learning technologies may be incorporated to promote flexible access, facilitate review, encourage further discussion and collaborative work, and provide opportunities for reflection. As instructors develop online courses, structure blended classes, or incorporate a variety of e-learning technologies to support face-to-face delivery of material, the 3E Framework provides a
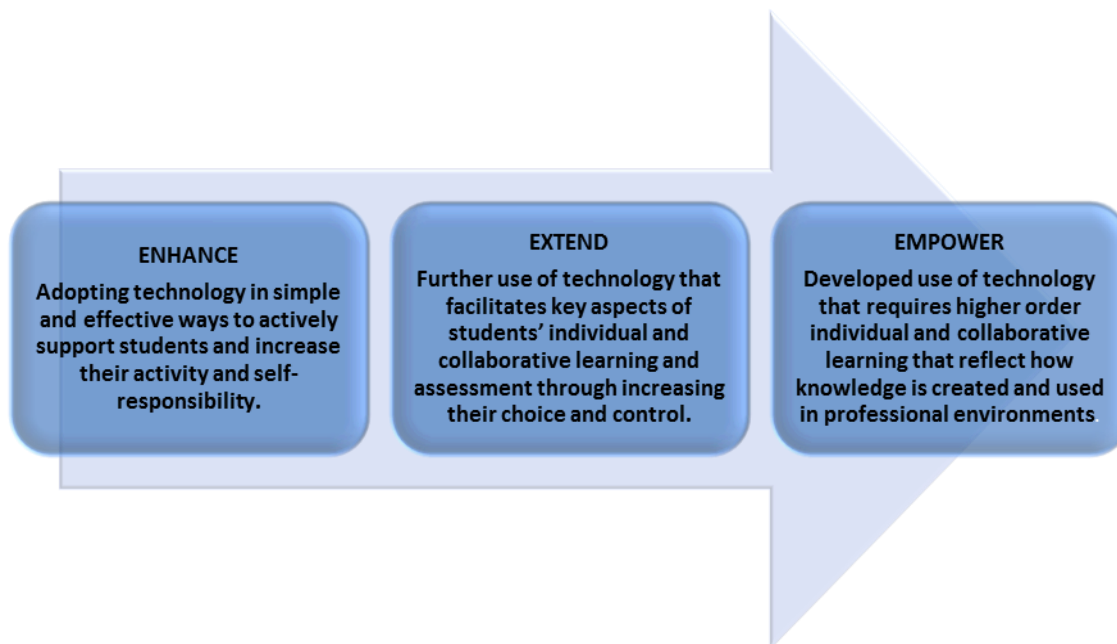

ENHANCE
Adopting technology in simple and effective ways to actively support students and increase their activity and self-responsibility.

EXTEND
Further use of technology that facilitates key aspects of students' individual and collaborative learning and assessment through increasing their choice and control.

EMPOWER
Developed use of technology that requires higher order individual and collaborative learning that reflect how knowledge is created and used in professional environments.

Figure 1: 3E Framework (adapted from Smyth, Bruce, Fortheringham, & Mainka, 2011, p. 3)

useful theoretical model to examine the learning needs of the students and to intentionally structure the class to meet specific student learning outcomes that can address those needs.

Qualitative Meta-synthesis

In order to examine the issue of adult learners in online learning environments, the literature regarding adult learning in general, and online learning of adults specifically, was investigated using a qualitative meta-synthesis approach. Extensive data from related research was uncovered via the articles and books during a thorough exploration of the topic, and the data was subjected to an interpretive analysis (Zimmer, 2006). For qualitative meta-synthesis, the research question itself and the primary objectives suggest preliminary research criteria (Finlayson & Dixon, 2008). Some key research terms helped uncover resources that informed the study; in this case, terms such as *adult learners*, *online learning*, and *learning technologies* were used to uncover critical sources of information. The sources were further scrutinized by analyzing the abstracts and purposes of the articles and books; several sources were removed from added analysis because of the lack of focus on the specific research topic. Scholarly resources published within the last decade were used as sources for the meta-synthesis. The date of publication considering this topic was also a limitation: some sources were too dated to have currency. For example, an article published two decades ago referred to more than 35 percent of households having computers and over half of the workforce using computers regularly in their jobs (Eastmond, 1998); obviously the type of e-learning technologies that can support learning now are much more advanced, and thus this source was removed from consideration. Indeed, Cox and Belbin (2010) noted that distance learning has been in existence for many decades but was facilitated through paper and correspondence.

The data was then analyzed using a method of coding described by Saldaña (2013). After highlighting the overarching themes, some of the categories were subdivided and patterns and interrelationships among the data were determined; Saldaña described this stage as First Cycle coding. After initially coding the data, the author engaged in First Cycle coding using interpretation and reflection in the process of meaning-making. This initial coding and reflection were followed by Second Cycle coding, as suggested by Saldaña, which incorporates some of the emergent themes for a fresh perspective on the data. This coding process aligns well with the qualitative meta-synthesis approach, whereby researchers examine and organize previous theories and discoveries to construct new theories, ideas, and insights that can potentially inform practice, theory, and policy (Gewurtz, Stergiou-Kita, Shaw, Kirsh, & Rappolt, 2008). The process of qualitative metasynthesis is meant "to render what exists within a body of evidence-based qualitative studies into a coherent and synthesized product" (Thorne, Jensen, Kearney, Noblit, & Sandelowski, 2004, p. 1343) that can then inform practice and policy, and suggest further research possibilities. Thus, meta-synthesis was a useful methodological approach to examine the subjects of adult learners, adult learning, online learning, and e-learning technologies.

Describing the Adult Learner

In order to investigate this topic further, it is important to first provide a characterization of adult learners. Age is the common defining criteria for this demographic, and although there can be variance of a year or two, adult learners are described as those people engaged in formal

learning activities who are 25 years of age or older (Compton, Cox, & Laanen, 2006). Surprisingly, given that definition, the mature learners just entering this spectrum (the youngest learners in this category) may also be digital natives, a term that describes their familiarity with technology. That is, some adult learners may have been exposed to electronic technology sources their entire lives. "Accelerated changes propelled by technology characterize the 21st century" (Obizoba, 2016, p. 14): indeed, computers and technology are an integral part of most jobs, and infuse our daily living (Merriam, Caffarella & Baumgartner, 2007). Contrastingly, it is not useful to assume that much older adult learners have had limited exposure to e-learning and technologies. Assumptions regarding lack of requisite online skills or conversely assumptions that everyone possesses a certain level of technological skills can interfere with thoughtful analysis of the e-learning environment, and how best to support mature learners within this environment. Even with the constant exposure to electronic media in all aspects of the work and education environment, students may not be comfortable with utilizing particular programs or applications and may require careful mentoring in how to best use these technologies.

Even though adult learners should be seen as individuals with their own constellations of skills, previous experiences and attitudes toward learning can have an impact on their educational environment. For example, the classrooms that adult learners experienced in secondary and previous post-secondary educational environments have changed (Cercone, 2008); thus, they may not be as comfortable in different pedagogical surroundings such as a flipped class, which is a model whereby the course content is delivered outside of classrooms via web-based materials, and classroom time is devoted to activities and interaction among classmates and the instructor (Roehl, Reddy, & Shannon, 2013). The emphasis on collaborative learning and reflection is more prominent in contemporary classrooms, and may be less familiar to some mature students. Additionally, adult learners may have different motivations for returning to formal education than those under 25, including having focused goals for their education, that align with their career and long-term professional goals (Compton, et al., 2006). Park and Choi (2009) concurred that adult learners engage more in learning that has a practical purpose that can be applied to their real lives. They are also more likely to be enrolled in distance education because of their many responsibilities, including financial needs and changes in life circumstances, such as divorce or career changes (Compton et al., 2006).

Adult Learning

The scope of this paper prohibits an in-depth presentation of the wealth of literature concerning adult learning. However, for the purposes of situating the research within the context of adult learning, it is important to describe the principles of learning in adulthood. As Knowles, Holton, and Swanson (2005) noted, the characteristics of adult learners are not the same as those of children. Knowles et al. (2005) built upon Knowles' previous published works on andragogy whereby Knowles outlined a set of principles that underpin adult education. The six principles of andragogy are the: a) learner's need to know, b) self-concept of the learner, c) prior experience of the learner, d) readiness to learn, e) orientation to learning, and f) motivation to learn (Knowles et al., 2005). Knowles et al. (2005) acknowledged that other factors affect adult learning; specifically, individual learner styles and backgrounds, situational differences between learners, as well as their particular goals and purposes of learning. However, in designing courses and learning opportunities, the incorporation of these principles is critical in facilitating adult learner success.

Although Merriam et al. (2007) acknowledged that Knowles' widely cited theory of andragogy has come under recent critique for not explicitly addressing the sociological and contextual elements of adult learning, they contended that there is still widespread acceptance of these principles. Nonetheless, Merriam et al. (2007) proposed that reframing these principles as assumptions was perhaps more helpful in the discussion of adult learning. A key difference that makes adult learning distinctive from K-12 learning is the experiential component of learning (Merriam, et al., 2007). Adults bring a wealth of life experience to their learning, and they make connections between prior knowledge and experience with their new learnings. This constructivist perspective focuses on the process of reflecting on prior experiences and making sense of those experiences in light of new information. In spite of this, Ambrose, Bridges, DiPietro, Lovett, and Norman (2010) contended that prior knowledge could either help or hinder new learning. If the prior knowledge is inaccurate, insufficient, or inaccurately applied, the learners have difficulty interpreting and understanding the new information (Ambrose, et al., 2010). The implication is that adults may need to dismantle prior conceptions before building new learning. On the other hand, adults' depth of experience may lead to rich connections that meaningfully extend their understanding.

Among the prominent scholars of learning theory and adult learning theory, Bandura (1986) proposed a social cognitive theory, whereby individuals' learning and behaviour are influenced by the particular social environments in which the interaction or experience takes place. Behaviour, cognition, and the situation itself all mutually affect each other. According to Bandura (1986), individuals are "self-organizing, proactive, self-regulating, and self-reflecting" (p. 164), as they try to make meaning of new information and experiences. Their behaviour is a function of the way the person interacts from the environment and self-assesses the outcomes, which in turn affects subsequent behaviour and learning. Bandura's (1986) theory emphasizes the environment and learner interaction.

Similarly, Illeris (2004) examined the interaction of the three dimensions involved in learning: cognition, emotion, and the environment, which occur within the broader context of society. Individuals' learning occurs as a result of the multi-dimensional interplay, and our learning is shaped by the overarching societal context. As Merriam, et al. (2007) pointed out, the inclusion of the emotional element, in addition to the societal element of this model, provides a lens to expand our understanding of the complexity of learning and the relationality and impact of social context and emotions on learning.

As is evident in the presentation of these few theories, the understanding of adult learning is ever evolving, and this evolution may be even more accelerated given the changing learning environment due to the implementation of e-learning technologies. The application of these understandings of adult learning to the context of the online learning environment is described in the following section.

Adult Learners in the Online Environment

The principles of andragogy can be applied to the context of online learning, and are useful as guidelines for the development of online opportunities that facilitate online learning success (Conaway & Zorn-Arnold, 2015, 2016; Tainsh, 2016). Brierton, Wilson, Kistler, Flowers, and Jones (2016) stressed that in keeping with the importance of personal experiences as a connection to learning (as highlighted in the theory of Andragogy), adult learners should have an opportunity to link life experiences to their learning. Furthermore, engagement can be

promoted by requiring that students take an active role, participating in discussions and interacting with fellow students. This design works well with adult learners who bring an array of experience to the class and who are self-directed in their learning; both of these elements are connected to Knowles' principles (Tainsh, 2016). Additionally, the incorporation of opportunities to apply course concepts in real world problem-solving and critical analysis is in keeping with Knowles' principle of the self-directed adult learners' focus on practical applications and relevance of the material (Tainsh, 2016). The self-directedness and autonomy that are crucial for online learning success aligns well with the andragogical principles of adult learners' orientation to learning and motivation for learning (Conaway & Zorn-Arnold, 2016). As well, adult learners have developed a stronger self-concept and may have well-defined goals (Conaway & Zorn-Arnold, 2016; Knowles et al., 2005). That sense of self is critical for developing awareness and self-reflection, which in turn promote deeper learning. Adult learners feel empowered when they can take charge of their own learning to achieve those personal and professional goals. Thus, adult learners most often come to the classroom ready to learn with a high intrinsic motivation to learn for the sake of learning (Conaway & Zorn-Arnold, 2015).

Although adult learners represent a particular age demographic, the group is comprised of individual learners who have their own learning styles, study habits, motivations for learning, and skill sets (Çakıroğlu, 2014; Cercone, 2008). Furthermore, they are self-directed and independent learners who bring past learning experiences to the new environments (Cercone, 2008). Okpala et al. (2010) corroborated these findings and pointed out that students who decide to engage in online learning usually exhibit a high level of self-directed learning strategies which supports their success.

There are many compelling reasons for adults to pursue online learning. Even early studies in adult learning and distance education identified the potential for adults accessing these types of online opportunities to address goals of career development, job security, career change, and promotion, in addition to other personal reasons (Eastmond, 1998). Those same reasons apply to the current context (Compton et al., 2006). Their life circumstances, such as careers, spouses, and children, make it much more likely that adult learners will engage in online learning than the more traditional students (Compton et al., 2006; Steele, 2010).

Donavant (2009) suggested that some of the drawbacks of online learning included the lack of personal interaction with instructors or peers, and issues with technology, including the inability to depend on smooth functioning of the technology. McDougall (2015) agreed with this finding and identified that encouraging students to share personal experiences and connect it to the course material is "an acknowledgement of the knowledge and understandings they bring to their formal education" (p. 109). Furthermore, adult learners need to feel socially connected with others, and opportunities for these connections need to be purposefully built into the online environment (McDougall, 2015). Additionally, in particular contexts, Donavant noted that hands on activities were difficult (or impossible) to structure or simulate. Student satisfaction and success was largely dependent on familiarity with technology including previous exposure to the tools (Donavant, 2009). Lee, Barker and Kumar (2016) found that students overall were more satisfied with their learning when they engaged in a learner-directed experience. In Lee et al.'s (2016) research using an e-learning opportunity, students who were supported in taking active control and responsibility for their own e-learning felt that the learning experience was more positive and constructive than a control group who covered the same material in a much more directed mode of delivery.

There are multiple factors that can impact adult learners' success in online environments.

Park and Choi (2009) pointed out that despite the growth in online learning, there continues to be a high dropout rate. They found that external factors were very influential in decisions to persist or drop out of online courses. For example, Park and Choi (2009) noted that family or organizational supports helped students persist. However, internal motivation was also an influential factor in persistence rates. Instructors who encouraged students and gave constructive feedback positively affected students' motivation to continue (Park & Choi, 2009). In addition, if the students were satisfied with the course, and if they felt the course was relevant to their job, prior knowledge and experiences, they were more likely to persist (Park & Choi, 2008). Park and Choi (2008) emphasized that adult learners prefer learning that serves a practical purpose as well as an academic one.

As McCombs (2015) pointed out, learner-centred experiences are best practice in both face to face and online opportunities. These findings further emphasize the necessity of careful design and organization of online courses in order to engage students, and make the learning relevant while not overwhelming them. Obizoba (2016) posited that scaffolding experiences whereby particular technological skills as well as concept development is built upon from initial tasks to subsequent activities, is especially important for developing confidence and understanding. Obizoba (2016) contended that for online learning experiences, "the goal is educational learner-centred opportunities that enable them to construct knowledge through collaborative, engaging, and interactive learning experiences for efficient outcomes" (p. 22). Included in that development should be tasks to facilitate the development of study habits that are applicable to the online setting; no longer is note-taking in class required, but other study habits such as periodic review, may be easier to achieve within an e-learning experience (Çakıroğlu, 2014).

Applying the 3E Framework

Wang and Torrisi-Steele (2015) purported that despite the rapid advancement and introduction of online technologies into the world of higher education, the application of these technologies has been "largely embedded in traditional content delivery models" (p. 18) and used to enhance efficiency or access to the same material rather than focusing on innovative teaching strategies. They proposed that e-learning technologies should be used to support students in becoming self-directed and collaborative. When applying the vocabulary of the 3E framework, it appears that most learning technologies are employed at the Enhance level, whereby the needs of flexibility and convenience are achieved through ongoing access to course materials and content review activities. While these types of activities may enhance access, and promote deeper engagement with the course materials, other types of activities could support learning at the Extend and Empower levels.

Smyth et al. (2011) emphasized that incorporation of e-learning technologies should be based on the principles underlying effective teaching and learning approaches. For example, in designing the course and the activities, instructors need to first consider who the students are and what the subject is. Specifically, instructors need to determine the skills and online experience that students bring with them to the classroom, keeping in mind to avoid assumptions in this assessment. Understanding the current comfort and familiarity levels of the adult learners in the class is key in developing instructions that are explicit enough to facilitate the technology use without undue frustration or boredom and disengagement (Smyth et al., 2011). As well, instructors need to determine the appropriateness of types of technologies for

particular content areas and learning outcomes. That is, using clicker technologies is useful for engaging students with the material, but does not promote student to student interaction.

It is important to reiterate that these levels are not mutually exclusive categories and some activities may blur the boundaries between levels (Smyth et al., 2011). Moreover, the application of these levels of e-learning technologies cross over the variety of modes of delivery from face-to-face, blended, to fully online instruction. Smyth et al. (2011) stated that "although Enhance represents simple adjustments to existing practice, and Extend a more purposively blended approach, Empower does not imply fully online" (p. 4). In all cases, the incorporation of online technologies needs to be purposeful (Smyth et al., 2011). As Knowles et al. (2005) pointed out, adult learners need the tasks to be relevant and purposeful, in order for the learners to be fully invested in the experience. Instructors should provide the rationale for the task or activity, relate the task to the learning outcomes articulated for the course, and highlight the benefits of the task (Smyth et al., 2011).

Enhance activities include posting presentation and reading materials on the learning management system, and adding videos and supplementary explanations for course material. Even in face-to-face classes, the online posting and sharing of core resources and supplementary materials expands access and allows for review of material periodically throughout the term. This type of review supports particular learning styles and allows for flexible opportunities to access and examine the materials at times convenient for the students.

Extend activities promote more interaction and collaboration among the students, who in turn become more self-directed in their own learning. These tasks can include discussion forums whereby students lead discussions online, or develop and post presentations, blogs, or wikis. Other students can provide feedback on their peers' presentations or blogs. Review of material can be supported through student creation of questions to post online and through opportunities to engage in discussion with peers or small groups. Collaborative development of presentations or essays, or even generating peer feedback on materials are all helpful Extend activities that can facilitate adult learners' engagement with other students and the materials at a deeper level.

Empower activities promote self-reflection and can include the establishment of a distance learning community, whereby students engage in shared experiences to support each other's learning. E-learning tools are used skilfully to generate deep discussion, to promote collaboration and introspection, or to facilitate self-reflection. Use of group interaction tools such as Collaborate and Webex support the development of an interactive virtual community and facilitate authentic engagement in the learning journey. These types of activities may be especially appealing to adult learners who have a wealth of experience from which to draw and make connections, and from which to share with classmates in the facilitation of group learning. For all levels of activities, though, familiarity with the e-learning technologies and carefully planned design and introduction of the activities are requisite elements for successful implementation.

In one Canadian study, the researchers (Squires, Turner, Bassendowski, Wilson, & Bens, [2017]), used the framework to structure the exploration of faculty use of e-learning technologies. Squires et al. (2017) identified faculty or instructors who employed e-learning technologies, and categorized their usage as Enhance, Extend, or Empower. They then conducted a series of eight focus groups and 11 interviews with faculty regarding the implementation of these technologies. In total, 32 faculty or instructors were interviewed. In all cases, the participants noted that their implementation of e-learning technology was driven by

the goal of improving outcomes for students. When using technologies that could be categorized as Enhancing the teaching, instructors identified that the technological tools improved access or flexibility in delivery, or added supplementary material that could improve understanding. For Extending the learning, instructors described technologies that allowed for additional opportunities to interact with the material or classmates; these interactions deepened the learning and application of the concepts. A few instructors who were most comfortable with e-learning technologies spoke about Empowering technologies. Using these tools allowed students to become co-creators of the knowledge, rather than merely consumers of the knowledge (Squires et al., 2017).

Based on the study of Squires et al. (2017), Table 1 identifies how the 3E framework can be used as a tool to examine the intended purpose of incorporating e-learning technologies.

These examples illustrate some uses that were mentioned in Squires et al.; however, this table does not present an exhaustive list of all the e-technologies and uses described by the participants. The intended use of the technology informs the categorization, rather than the e-learning technology itself. Additionally important to note is that these categories are not mutually exclusive. Occasionally, the same e-learning technology can be used in the same classroom multiple ways, and it may be the students' eventual use of the technology rather than the instructors' intended use that will change the categorization.

Implications for Practice

As described in the previous sections, adult learners have particular needs that may require specific supports. While many of these students appreciate the flexibility provided with the online and distance formats, they may need deliberate training and mentoring on how to use specific programs and tools. If the skills targeted for development in particular online programs are for the purposes of Enhancing the experience, most students will be able to use peer support or minimal training. For activities that target the Extending type of experiences, students may require more intensive training and further opportunities for practice. Furthermore, when the types of experiences align with Empowering levels of engagement, careful scaffolding of activities may be required to build comfort and confidence in utilizing the technologies to the intended level.

E-learning technologies that can enhance or extend the learning experiences or empower the learner can be evaluated using the 3E framework. The framework can assist instructors with matching the types of experiences and outcomes that are needed with the types of technologies that can be employed. Furthermore, by understanding the outcomes, instructors and Instructional Technology units can advocate for the required tools and infrastructure necessary to achieve those goals. Because the governance and resource allocation structure varies across Canadian post-secondary institutions due to provincial jurisdiction over education, the mechanisms for this advocacy and for implementation will depend on the provincial context. However, a stronger case may be built for support of e-learning technologies if the urgency of claim is situated in enhanced success for post-secondary students, a goal that the Conference Board of Canada (Lalonde & McKean, 2017) has recently highlighted.

In addition, course design, regardless of mode of delivery, needs to incorporate key principles of learning, motivation, development, and individuality: "The challenge is to incorporate these best practice principles in online instruction that prepares all learners (student and their instructors as learning partners) to be lifelong learners and innovators"

Table 1

Examining E-learning Technology Incorporation Using the 3E Framework

Type of Technology	Activity	Enhance	Extend	Empower
Videos	Use of available videos to further explain a concept.	*		
	Instructor makes a video to demonstrate how the concept can be applied to a new situation or context; students discuss or reflect on the material.		*	
	Students or groups of students make a video to explain a concept or apply the concept to a new idea or process.			*
File sharing	Students or instructors share additional documents that support a concept.	*		
	Students work collaboratively on a document or presentation using Google Docs, Dropbox, etc.	*	*	
Screen sharing	Materials such as slide images are broadcast to the whole class and can be explained with drawing tools.	*	*	
Clicker or response systems	Students respond to questions using clickers in class and receive immediate feedback about their response.	*		
	Students use clicker technology to indicate answers then discuss in small groups the correct answer and rationale.		*	
	Students construct questions and responses to use in small groups or as a class to apply the concepts.			*
Webex	Students meet in a virtual classroom for discussion.	*	*	
	Students meet to work on presentations and essays together.	*	*	
	Students lead presentations, discussion, construct material that others interact with.			*
E-portfolios	Students construct a portfolio of their products that provide evidence of their competencies or learning achievements.		*	
	Students construct a portfolio to demonstrate their achievements, incorporate reflections, highlight their professional learning, and support their applications for job opportunities.			*
Learning Management Systems	Posting of learning materials and assignment folders to collect assignments.	*		
	Online groups to discuss material, add to others' posts, describe connections and applications.		*	*
Social media	Students contribute to a class webpage or Facebook group to discuss material, post deadlines, post additional materials.	*	*	
	Students establish a blog and contribute their reflections on and connections with the course material.			*
	Students disseminate projects or new understandings to the broader community using social media.		*	*

(McCombs, 2015, p. 68). The literature in this study examined adult learners' approaches to learning and situated their access of online learning within the unique challenges posed by their life circumstances. The implementation of varying types of technologies achieves different purposes; thus, the online coursework requires careful design and implementation to ensure that adult learners are successful in achieving the desired learning outcomes. If faculty and instructors understand the specific needs of adult learners, they may be able to identify additional ways to incorporate e-learning technologies to improve understanding, increase accessibility, extend opportunities to engage with the materials or with classmates, and support learners to become co-creators of knowledge. By understanding the ultimate goal of online learning activities, instructors and students can engage in a journey to further enhance, extend, and empower themselves in their learning.

Implications for Research

Further research is required to determine a) the types of specific supports that online learners need in order to utilize technologies to promote the deeper levels of engagement and b) to support adult learners in realizing their academic potential in an online environment. Specifically, future studies could examine the success of adult learners in Empower types of activities with given supports in place to ease implementation and use of unfamiliar platforms and technologies.

How adult learners approach online learning has not been studied extensively because of rapid technological advances; this field of research is one in which it is difficult to stay current and relevant. Indeed, social media platforms provide another unique and relatively recent venue for student engagement in classrooms, and research regarding use of these tools in classrooms is just emerging. Research examining adult learners' use of emergent e-learning technologies promises to be challenging because of the speed of innovation.

Additionally, with the incorporation of a variety of e-learning technologies in classrooms, online and face-to-face, there are implications for learning theory. For example, Bandura's (1986) model and Illeris' (2004) theory both highlight the role of the social environment, a context that can be entirely different in virtual communities. This element of learning thus requires further exploration given the dramatic impact that e-learning technologies can have on the learner's environment.

Conclusion

Online and blended learning opportunities particularly appeal to adult learners because of their flexibility and convenience. However, incorporating particular strategies and e-learning technologies requires careful planning and design to ensure maximum student success. Instructors need to consider the particular needs of the students, the delivery format (including synchronous or asynchronous approaches) and the learning outcomes that they hope to address when developing courses using these technologies. The three levels of e-learning technology integration are described in the 3E framework, and these categories provide a useful lens to examine the implementation of particular activities, targeted for particular groups of students. Enhance activities primarily focus on increasing flexibility and access to course material and content, as well as providing a platform to continue classroom discussions. Extend activities move towards more collaborative approaches and allow students to interact with the material.

Empower activities, on the other hand, focus on self-reflection, and further develop opportunities for students to engage in collaborative work aimed at critically analyzing, synthesizing, and interacting with the material and classmates in constructing shared understandings of the concepts. Regardless of the type of activity, student skills and confidence levels need to be carefully developed through scaffolding the materials and building upon previous skills. Furthermore, adult learners are usually very self-directed and motivated to learn; they also like social interaction with classmates. Extend and empower activities are important to facilitate adult learners' engagement with the course, and enhanced engagement is closely aligned with success. Another angle to consider is that Enhance applications of e-learning technologies are aligned with extending opportunities for learners to be consumers of content, whereas the Extend and Empower activities support learners as co-creators of the content. Ultimately, achievement of articulated learning outcomes is more likely when activities are thoughtfully designed with adult learners in mind, and are supported by carefully planned incorporation of e-learning technologies to promote deeper learning and engagement with the coursework.

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