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Electronic Portfolios: Research Site in Internet Spaces

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In the mid-1990s with the birth of internet-based web technologies, ePortfolios emerged as a powerful tool in the institution of education. They are positioned within the online activities of courses and programs of universities, which are a subset of internet learning spaces. These interactions are located virtually on the internet and foster the development of various subcultures as demonstrated by graduate students completing their ePortfolio projects as a manifestation of internet culture. This paper reports on an ethnographic study conducted in three iterations of a capstone ePortfolio project course in a fully online post-secondary institution in western Canada. It also presents the interconnectedness of ePortfolios with the four constructs that underpinned my four years of online observation as a doctoral student in my role as a participant-observer of master's students in the final course of their program of studies. The findings based on the rich data collected on the perceived experiences of master's students offer stimulating discussion on the implications for future scholarship and research on ePortfolios as disruptive pedagogy for blended and online learning spaces.

Our ability to connect electronically through World Wide Web tools on the internet since the early 1990s has given rise to new forms of community (Kirmayer et al., 2013), where the members, as "citizens of the internet," establish a sense of collectivity and belonging (Porter, 1997, p. xiv). ePortfolios, which emerged as a powerful tool in the institution of education with the birth of web technologies, have become a key aspect in curriculum updates and are gradually being considered research sites in spaces of the internet. In my study, the ePortfolio is a reflective, curated repository that is then mediated through interaction with instructors and peers in spaces on the internet. It is a technology-enabled learning site where master's students in a fully online post-secondary institution in western Canada reflected and documented their learning growth over time during the final course in their program of studies.

As illustrated in Figure 1, ePortfolios are positioned within the online activities of courses and programs of universities, which are a subset of internet learning spaces. These online activities within a course and also across disciplines are located virtually on the internet and foster the development of various subcultures. In my study conducted in three iterations of an ePortfolio course in a graduate program at a fully online university, students completing their capstone ePortfolio projects gravitated toward a locus, an ePortfolio subculture as a manifestation of internet culture.

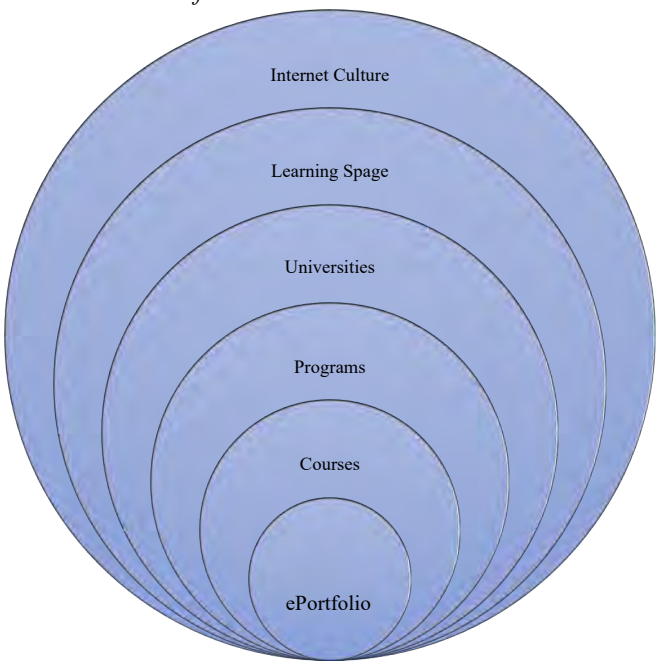
Community of Learners in Spaces of the Internet

In spaces of the internet, there are cultures and subcultures characterized by how we act, interact, and present ourselves (Kirmayer et al., 2013; Porter, 1997). The students in my study became part of a subculture which, as Foster (1997) described, is characterized by the sharing of common goals and the relationships the group generates and nurtures during the interactions originated among peers. These interactions, located virtually on the internet, foster the development of various subcultures and make it possible for online researchers to engage in meaningful observations of online learning communities.

Communities are comprised of actors who share a particular interest and engage in a similar activity; they are formed in different spaces, for various reasons, and their members share common goals during either a temporary or prolonged period of time. During my observations of master's students in an ePortfolio learning community, the members shared a sudden desire to search for more information and to produce new ideas (Dewey, 1938) both in the initial stages of the ePortfolio production and also after comments were made by peers on their product. Although part of a natural learning process, this strong feeling from within presented itself, as Siemens (2006) posited, to those able to speak into the process—the ePortfolio process. As the student ePortfolios (initially as products) were taking shape in the early stages of each of the capstone courses I observed, students articulated their difficulty in having to select only five artifacts for their ePortfolio collection. The emergence of a common goal during these preliminary social interactions among community members helped create a sense of community building, as members sought one another for further clarification on how to build the collection. In consequence, the difficulty in discerning which five experiences to include in their projects became the focus point in community gatherings during the weekly online information sessions.

Once the students started sharing their individual collection of pages in the community foyer (course forum), a new community goal emerged; in consequence, the members of this online learning community began to seek comments from peers on the products they were creating. This community, initially devoid of members, purpose, or defined space, was gradually being built by its architects—the students themselves. A certain commonality was now established, and the initial difficulty in discerning how to populate the collection of pages was then overcome. The

Figure 1
ePortfolio as an Internet Subculture



community builders now sought comments from one another on their creations in order to complete their projects and also, most importantly, to further reflect on the "aha!" and "oh, no!" moments experienced during course assignments throughout their programs of study.

As a subculture of a much vaster space in internet culture, the ePortfolio site is a place where students learn to interact with one another, thus building, maintaining, and strengthening a community. Bruner (1996) referred to these efforts as being aligned with a "subcommunity [that] specializes in learning among its members" (p. 20); these subcommunities seem to become a locus where students interact and help one another acquire various forms of knowledge to facilitate the development of their projects. As such, the students begin to experience, as purported by Wiggins and McTighe (1998), knowledge of self, which may then strengthen the ability to explain, interpret, apply, and empathize as well as have perspective of what they understand during the feedback interactions.

Community of Educators as ePortfolio Subculture

The field of teacher education has been ahead of other fields in adopting ePortfolios, and, as Butler (2006) suggested, continues to grow and advance in its thinking about and the use of ePortfolios. Since the mid-1990s, with the invention of the Web, we have seen a shift in teaching and learning paradigms which are partly underpinned by technology-enabled learning tools, among which is the ePortfolio—now seen as disruptive pedagogy in blended and online learning spaces (Zuba Prokopetz, 2019b). During these educational change processes, in order to avoid a technology push, it is crucial that the perspective of both learner and educator be considered; therefore, a solid foundation in the preparation of student-teachers is necessary (Aalderink & Veugelers, 2006).

In my perspective, technology and pedagogy have undergone a similar trajectory—from the 20th-century, one-way interaction (teacher as the knowledge holder) to the sharing of information and co-construction of knowledge in a community of learners in the 21st century. In the mid-1990s, consumers of knowledge passively received information via the commercialized web (i.e., Web 1.0). In early 2000s, the ubiquitous web (i.e., Web 2.0) capacitated the generation and dissemination of information by consumers, who had opportunities to interact in the vast spaces of the internet. After 2005, with the semantic web (i.e., Web 3.0), information began to be disseminated based on preferences; technological advances made it possible for computers to interpret such information in order to satisfy consumer request. In consequence, the field of blended and online learning evolved accordingly:

- One-way interaction (teacher centric): correspondence, radio, television
- Multiple-way interaction (collaborative): web-conferencing tools

The one-way interactions via correspondence or radio were transformed during the industrialization of distance education (Peters, 1988) in the 1900s, when institutions mass produced study packages for the consumers.

In the late 1980s, with home computers and proper connectivity, the expectation from consumers also evolved, thus requiring some adaptation by the craftsperson in charge of sharing knowledge. The world of online learning during the fourth generation of distance education (Taylor, 1995) transformed when the web made affordances for educational technology pedagogy, which included portfolios in a digital format. These innovative online instructional tools facilitated learning at a distance and enabled students to no longer rely on the efficiency of an assembly line for their study packages (Byrne, 1989; Taylor, 1995). Nowadays, at one end of the spectrum, we have educators who have failed to recognize the advantages of including pedagogically-sound innovation in their practice. On the other end, we have eager learners who want to rely on innovation to both learn and demonstrate achievements, as evidenced in the student development and presentation of their ePortfolios.

A report published in Dublin (Scully et al., 2018) that aligns ePortfolios with learning, assessment research, policy, and practice in education makes a number of recommendations and includes the need for more studies with a robust methodology that enables the triangulation of outcomes—the alignment of competencies on the artifact— with the self-reported attitudes and perceptions of ePortfolio creators (Bryant & Chittum, 2013). My four-year observation of graduate students completing their ePortfolio projects enabled me to capture their struggles as they attempted to align program competencies with their learning in each of the courses in their program of studies. My research focus, however, was on reflection (self-reflection) and feedback interaction (peer-to-peer reflection) during the development of a capstone project that included seven pages, five artifacts, the alignment of core competencies (and their respective sub-competencies), and student reflection on the learning to date.

As a subset of internet learning spaces, process ePortfolios have emerged as a powerful tool in the institution of education. This type of ePortfolio can be applied in both assessment for learning (e.g., active learning, self-regulation) and assessment of learning (e.g., strategies to demonstrate learning) and can be included in the curriculum (re)design of various disciplines and fields of study in higher education. As demonstrated in my online ethnographic study, the student ePortfolio projects are positioning themselves as future research sites in spaces of the internet.

Research Site in Internet Spaces

In the field of education, it is not uncommon for practitioners to apply what they know about a concept before more research findings on that concept are made available (Bryant & Chittum, 2013). Therefore, before we introduce new technology in our practice, we need to ensure that pedagogy precedes technology to prevent our initial enthusiasm from translating as a "silver bullet" or a quick fix in our practice (Bryant & Chittum, 2013; Watson, 2012). As an educator of English as a second language (ESL), I deepened my understanding of my experiences as an ePortfolio creator and user before I attempted to implement this innovative pedagogy in my practice (Zuba Prokopetz, 2019a, 2018b). In order to learn more, I embarked on a 4-year journey in which I was initially an observer and later also a participant in various communities of master's students completing their capstone projects as a manifestation of internet culture in a fully online post-secondary institution in western Canada.

Emergent Problem

It was while observing graduate students developing their capstone ePortfolio projects that I perceived the difficulties they had thinking through their learning to date, struggles in aligning competencies with learning experiences, and challenges while articulating their achievement of competencies. As I initially maintained an etic view during my observations, I aimed to focus on what the community members did rather than on what they said they did, as suggested by Margaret Mead, when she suggested, "What people say, what people do, and what they say they do are entirely different things." I began to compare the ePortfolio process (the reflective element) and product (the chosen platform) with an ethnographic approach to research.

Research Questions

My research questions were borne from the observable communications between students in the course and their communicated struggles with the capstone ePortfolio project. The questions are:

1. What are the overall perceptions of the development of reflection in an online ePortfolio project by master's level students participating in a capstone project as an instance of internet culture?
2. What value do students perceive in the reflective process as they develop their capstone ePortfolio project?

3. To what extent does the giving and receiving feedback provide students with a sense of being part of a subculture of an online community of learners?
4. How do students perceive their experiences as peer-feedback givers in the development of reflection as they participate in an online master's capstone ePortfolio project?
5. How do students perceive their experiences as peer-feedback receivers in the development of reflection as they participate in an online master's capstone ePortfolio project?

These questions formed the two layers of the study. The first layer raised Questions 1 and 2 about reflection. The second layer explored peer-to-peer interaction through Questions 3, 4, and 5. Answers to these five questions were pursued through a suite of data collection techniques comprised of (a) direct participant observations as recorded in a reflective journal, (b) recordings of 21 student presentations of their ePortfolio projects, (c) questionnaires with closed- and open-ended questions with six participants (Appendix A), and (d) semi-structured interviews with open-ended questions with the same six students (Appendix B). My reflective journal and personal notes were a rich data source on which I relied to reduce the influence of my perception (and personal bias) on my interpretation, and possible impact on my relationship with the students.

Research Instruments

In order to address the research questions and triangulate the findings, data were drawn from various sources: (a) questionnaires with open-ended and closed-ended questions, (b) semi-structured interviews, (c) recordings from student ePortfolio presentations, (d) reflective research journal with personal notes, and (e) field notes. Since the courses were live, I wrote my reflective notes after each visit to the community which, after ethics approval, became part of the study fieldnotes and research journal. My notes were archived in a collection of pages in my own ePortfolio where I documented my doctoral program of study from orientation to final dissertation defense.

These notes were a product of my ongoing participation in three iterations of the course via the discussion forum, ePortfolio pages, and synchronous information sessions. They also included excerpts of my discussions with my supervisor during moments of awareness and discernment throughout my research process. Some of my notes were organized as journal passages (reflective and reflexive) and others as field notes. Combined, they were of great assistance to me during my analysis and interpretation of the student responses.

The questionnaires were administered by email and included open-ended and closed-ended questions. The closed-ended questions were tallied and reported by number of responses to a given answer's option and not by percentages since the sample was small and not generalizable. The semi-structured interviews, originally scheduled as synchronous meetings via Skype, were eventually conducted by email. The participants were provided with the full list of interview prompts and given the option to choose which questions to discuss during the interview (see Appendix B).

Written student responses to the questionnaire and interview questions were emailed to me by the six study participants themselves. Audio recordings of 21 student presentations of ePortfolios were captured using the Adobe Connect recording function.

Emerging Challenges

One challenge in the data collection and analysis phase was addressing how to access the data within the Adobe Connect audio recordings of the students' final presentations of their ePortfolios. A technologist from the host institution converted the original Adobe Connect recordings into MP3 format. I was then able to import that file format into the data analysis software. I uploaded the student recordings to NVivo Transcribe, where each one-hour of data took only half the time to transcribe. I reviewed and corrected errors in transcription of several passages and returned to the recordings to verify the accuracy of my transcribed notes.

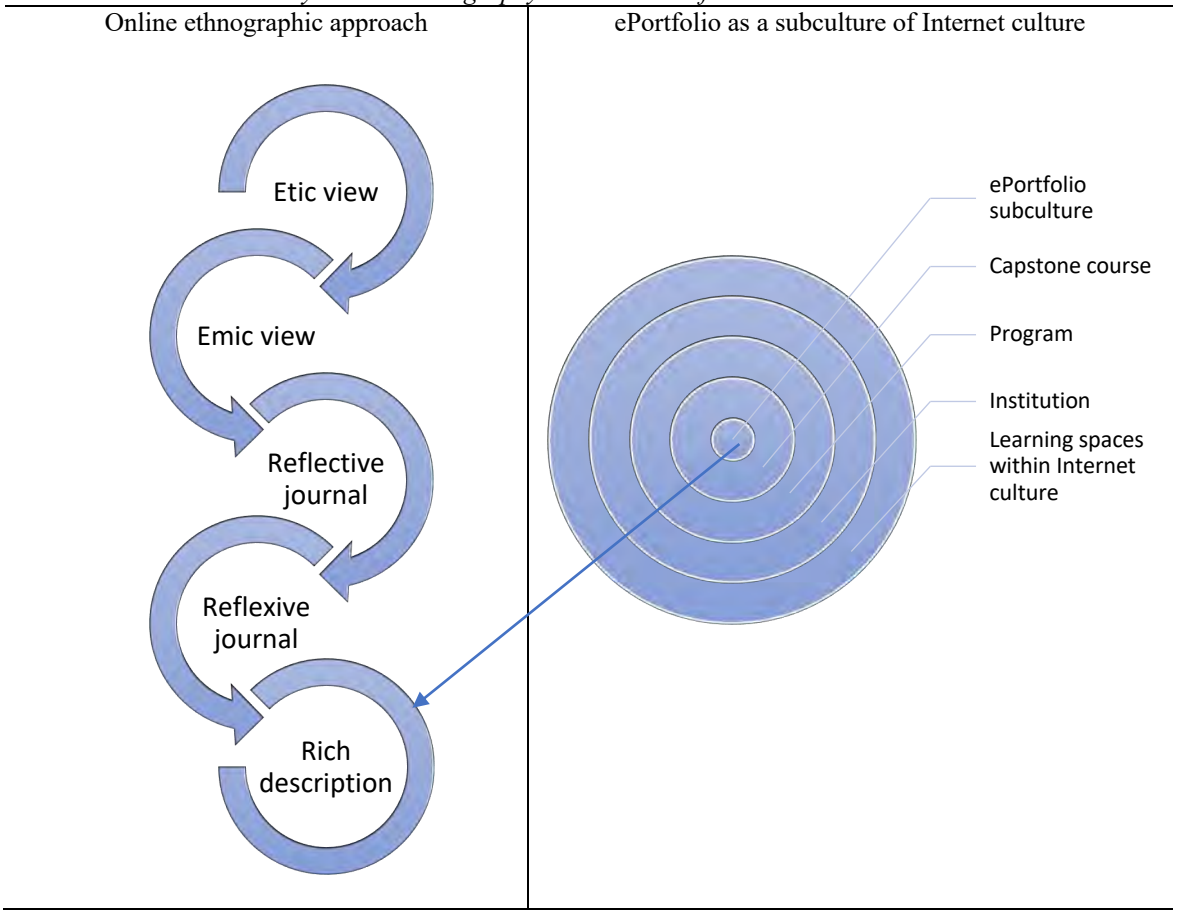
I also accessed online archives of students' ePortfolios. As a way of triangulating what the learners did with what they said they had done, during my analysis and interpretation of the findings, I viewed the artifacts of the ePortfolio pages. I selected ePortfolios based on my access to the site of the students and the corresponding recording of their presentations which were part of the course archives. Among the six respondents, only one had an accessible site. Although the artifacts on the ePortfolio pages are rich in content, they are beyond the scope of my data sources and were therefore excluded from the coding phase. These artifacts help tell the story of each learner in a meaningful way and could be used in a future study.

Maintaining my alignment with my philosophical positioning, theoretical underpinnings, and epistemologies of the research design also emerged as possible challenges. Engaging in daily writing and reflecting throughout the study kept me grounded.

Delimitations and Limitations

The focus of the study was on graduate students enrolled in three iterations of the same online university course using ePortfolios. This delimiting factor has

Figure 2
My Online Ethnography With the ePortfolio at the Center



impeded the generalizability of the results to all uses of ePortfolios in higher education due to the relatively small participant pool size. There were 65 students enrolled in the three courses from which data were collected. I chose to limit the research to those participants who had completed their ePortfolio projects, which reduced the number of possible study participants to 57 students. Among those students, there were six from two of the three courses who participated in the study. The six participants included three males and three females who worked as physiotherapist, paramedic, researcher, academic professional, and some who also taught at various professions. With only six respondents for the questionnaire and interview questions, the data were fortified by aggregating additional responses from answers to similar questions from 21 recorded student ePortfolio presentations.

Addressing Delimitations and Limitations

By choosing to apply an online ethnographic methodology with one small group of students, I sought a rich description of experiences knowing that a small number of study participants would prohibit the generalizability of the findings. I let observations guide my interpretation of what I was seeing, hearing, and experiencing in this learning space. I brought my outsider perspective (etic view) to the field site and enabled myself to see commonalities with the insider perspective of the learners (emic view) in this community (see Figure 2).

This interaction brought me close to the students and made me aware of the inclusion of possible biases, personal beliefs, and philosophical assumptions in the analysis of findings. I used my reflective notes and field notes to help me think through my own biases and assumptions during the data collection and analysis phases of this study. In addition, I also relied on other forms of notes derived from moments of both reflectivity and reflexivity, which became part of my own ePortfolio (albeit in a redacted format). By choosing to conduct an online ethnographic study, I was able to address common limitations of research identified by Marshall and Rossman (2016) as cost,

time, researcher's stamina, access to field site, and formal approval to conduct the research. The last two limitations were more challenging to address. Access to some of the archived ePortfolios was limited due to broken links, and subsequently reduced the number of audio-files included in this study to 21. Receiving formal approval for this research was a multi-step, multi-stakeholder process that included support of my doctoral committee through the successful completion of the candidacy exam, research ethics approval showing compliance with both national and institutional standards for conducting research involving humans, and permission from the instructors of the three courses in which the study was conducted.

Methodology

The research design enabled me to observe, explore, and examine cultural phenomena of the development of reflection in capstone ePortfolio projects from the perspective of the participants who were master's students. I used mixed methods to capture the perception of the students in open-ended questions and added a quantitative flavor in the collection and analysis of close-ended questionnaire data. The qualitative approach provided guidance, insight, and knowledge (Nelson et al., 1992) for the design of analysis of the rich data collected during my fieldwork through the course site. Just as there is no single picture of the world, there is no single blueprint for an ethnographic research (Cohen et al., 2011). There are many varieties of qualitative research; the source of such information includes oral and written data drawn from direct experience and meanings that may take a different shape depending on the qualitative research being undertaken (Preissle, 2006).

In choosing an ethnographic research methodology, I relied not only on personal experiences as a direct participant-observer but also on maintaining field notes to render rich data in the form of thick descriptions (Geertz, 1973). Personal experiences, as cautioned by Mouly (1978), are the simplest and most basic form of wisdom. As such, in order to help me think through biases and assumptions influencing my field notes, I created a reflective journal where I posted my thoughts and later reflected on them. This ongoing process of using field notes and a reflective journal to think about my thinking at various stages helped me reformulate the interview questions (Appendix C) to more adequately address the research questions and provide the participants a broader choice of themes to address in their responses.

Ethnographic Process

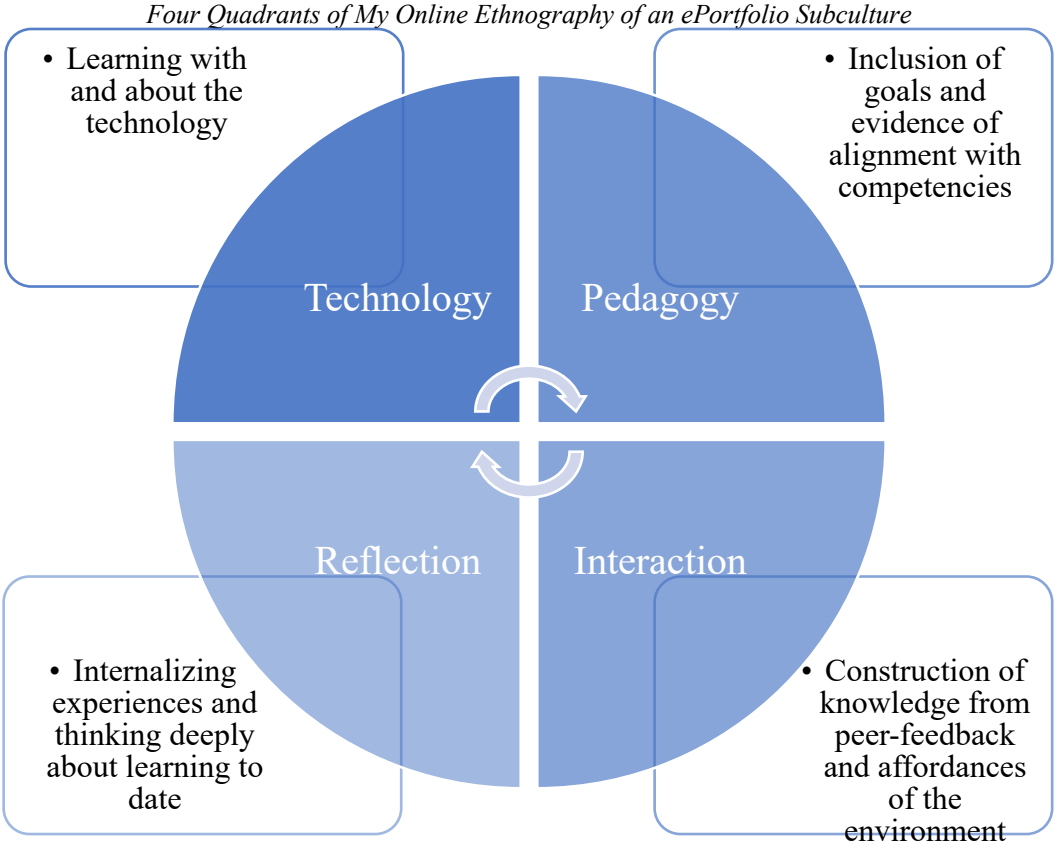
Initially, I saved all notes, symbols, and thoughts as part of my personal notes. Under careful consideration, these notes were later categorized as passages for my journals (during moments of reflectivity and reflexivity) and research notes with data from the field. To help me minimize inevitable biases, I triangulated my sources of data from questionnaires and interviews with the six study participants, observations in three iterations of the course, and recordings of the 21 archived student presentations of ePortfolios. I relied on the information from these 21 audio-files as a fallback approach to properly analyze the rate of appearance of certain themes, which I may not have otherwise identified due to the small number of participants in the one-on-one interaction phase of my data collection.

Institutional approval of my ethics application gave me access to the recordings in three courses, which would have been equivalent to approximately 60 hours of raw material; however, due to technical difficulties, some of the links to the recordings were no longer available. In the end, I had access to 28 hours of raw data from all three courses combined, which included 21 recordings of 1-hour student presentations. The remaining hours were from the live sessions, which, although rich in data, were not included in this project. These recordings included the very essence of what a process ePortfolio entails, which is the storytelling of the learning journey of each student, the alignment of program competencies, and their reflection on their chosen artifacts and on their learning.

Ethnography

Ethnography is a method that originates from the discipline of anthropology but is applicable to other disciplines. It differs from other research designs due to its in-depth study of an aspect of a culture, such as the ePortfolio subculture in the vast spaces of internet culture, which became my field site. Conquergood (1991) referred to ethnography both as a method (the fieldwork process) and as a product (the published monograph). He further posited that ethnographic rigor, disciplinary authority, and professional reputation are established by the length of time, depth of commitment, and risks taken by the researcher (emotional risks, rather than physical, in my online study) in order to acquire cultural understanding. Professional standards of ethnographic fieldwork were established by Malinowski (1922/1961, as cited in Roldán, 2003) who recommended participation in addition to observation to intensify cultural understanding. In response to a need to study communities in spaces of the internet, Hine (2016) introduced a new form or way of conceiving ethnography, virtual ethnography which was applicable for virtual, online, or digital spaces. A little more than a decade later, Kozinets (2010) referred to his online ethnography as netnography, a method, he posited, designed specifically for the study of cultures and communities online.

Figure 3
Four Quadrants of My Online Ethnography of an ePortfolio Subculture



Embodiment

In online communities, a researcher can personalize her ethnography by her embodiment of the fieldwork as aligned with Malinowski's revolutionized way of doing ethnography (Roldán, 2003). Such revolution resulted from Malinowski's praxis in the field (Roldán, 2003), and, as Kuper (1983) suggests, it espoused the premise that ethnographers were more than theoretical fieldworkers who visited the field and observed others. As a "privileged theoretician," the ethnographer "can understand from within how the system really works" as a result of an embodiment of seeing, reporting, and analyzing meaningful experiences (Kuper, 1983, p. 194).

By modifying his behavior in the field, Malinowski was able to experience this single-body experience (Roldán, 2003). Among the modifications he made regarding his behavior in the field included extending period of time in the field, focusing research on a few specific individuals, studying the participants in their present existence, speaking the local language, increasing the number of observations, and changing his style of reporting (Roldán, 2003).

My embodiment of myself as a researcher in the ePortfolio communities that I observed also necessitated a considerable amount of time to facilitate my embracing of experiences as they happened. After three years of ongoing observation (before beginning data collection), I spent a month entirely by myself in order to have the time and space to think, gather resources, return to previous learnings, make connections with new knowledge, and maintain awareness of everyday thoughts. It was during these moments of solitude that I fully understood my connection with ethnography. I visualized it both as a product (my writing of my experiences) and a process (the procedures I would follow). I began to sense that this innovative methodology seemed to have selected me as the storyteller of the activities of the learners in a community of ePortfolio creators. This embodied sensory experience, albeit a semester before I was officially declared a researcher in an ePortfolio community in a university in western Canada, capacitated my going beyond the here and now and further prepared me to properly observe the students as I conducted my research.

Observation is a mundane activity, one that is quintessentially human and highly personal. By participating inside the culture, I engaged in a gratifying way of knowing of others amidst others, and

thus began to embody the very essence of the culture—the emotional and intellectual aspects of a learning community with a common goal—the completion of a capstone ePortfolio project. My four years of observations of master's students completing their capstone projects were underpinned by four concepts (Figure 3) that guided this exploratory online ethnography and further facilitated the embodiment of my field work.

Guiding Concepts

During observations of the development of capstone ePortfolio projects, the internet learning spaces that housed the course I was observing enabled me to become immersed in the community in two ways:

- Emotionally (my ability to express feelings as I processed emerging experiences)
- Intellectually (my development of social competence as I engaged in reflective thoughts)

During the development of the ePortfolios, the vast online learning spaces facilitated the creation of a community by the students, a place where they interacted with one another, and shared common interests and activities as depicted in my research results.

Research Results

Responses to the primary research question, which focused on self-reflection, revealed that students perceived some value in the reflective moments when they shared educational experiences, articulated information about their journey, and paused to think back on their learning to date (see Table 1).

Responses by the study participants in the second layer, which included peer-to-peer reflection, revealed that despite the difficulty with feedback giving and receiving, peer interaction had helped with community building (see Table 2).

Responses that included data from the archived student presentations also revealed a perceived need by the students (earlier in their program of studies) to (a) know more about ePortfolio process and product, (b) learn to apply reflective writing, (c) understand how to meaningfully engage in constructive feedback, and (d) receive guidance on how to be confident and effective feedback givers and receivers throughout the development of their projects (see Table 3).

Summary of Study Outcomes

Many of the students in the capstone ePortfolio project course were initially unaware of the type of ePortfolio they were required to create. In consequence, they began to see the importance of the live course information sessions as a community event where their questions would be addressed.

During these sessions, the course instructors allowed

- voices of students to be heard,
- emotions to be expressed in a safe environment,
- doubts to be shared and clarified within the group, and
- modeling by participants who leveraged the affordances in their online environment.

Table 1
Participant Perception of Reflective Process in Capstone ePortfolios

Closed-ended answer (Questionnaire Q1)	*n*
Some value	5
No value	0
Not sure	1
Total	6

Table 2
Extent to which Feedback Contributes to Sense of Community Belonging

Closed-ended answer (Questionnaire Q3)	*n*
Some sense of belonging	4
No sense of belonging	1
Not sure	1
Total	6

Table 3
Seven Aspects of Recommendations for ePortfolios

Aspects	ePortfolio recommendations
Prerequisite	• Completion of courses that have reflective component. • Knowledge of experiential learning theories. • Viewing of course resources before the first live session.
Protocol	• Establishing support groups. • Encouraging study buddies. • Making participation in live sessions a course requirement.
Structure	• Guidelines on the type of product and process required. • Directions on the process of creating an ePortfolio earlier in the program. • Timelines for each phase of the project including feedback giving.
Feedback	• Learning to provide constructive feedback. • Highlighting benefits of commenting on artefacts of peers. • Acknowledging value of feedback received to enhance the experience.
Reflection	• Recognition that ePortfolio journey is enhanced through interaction. • Awareness of self and peers in spaces of internet. • Attentiveness to the value of a community of ePortfolio creators. • Use of meta-analytical approach in live sessions to brainstorm ideas. • Sharing of goals coming into the program to trigger reflective thoughts.
Modeling	• Discussions on a generic ePortfolio in initial sessions of the course. • Presentations by former course participants to share their legacy. • Updates on ePortfolios in live sessions to generate engagement.
Affordance	• Access to practice room throughout the duration of the course. • Use of a dedicated link for all live sessions. • Availability of recordings in course calendar after each session. • Update of course resources to make the course site more user-friendly.

Many of these synchronous sessions were laden with emotions related to learner vulnerabilities and personal circumstances. These unstructured and informative sessions enabled the learners in the course to self-identify their attributes, and to promote accountability within the community. This learner self-awareness—fostered by an ePortfolio subculture—and this identification of personal attributes—as aligned with the layers of affect—worked in tandem with the course environment and resources left by previous ePortfolio creators.

As a physical compilation of the work of students, ePortfolios allow for the sharing and storytelling of their journey, which includes happy and sad moments, successes and failures, discoveries and transformations, and, most importantly, a sense of growth on a personal, academic, and professional level. Acknowledging the cumulative process of learning events experienced by the learners, a topic that emerged from the responses of the study participants, was the need to have prerequisites for participants registering in a capstone ePortfolio project course. Students suggested that courses with reflective learning activities be a prerequisite to enrolling in this final capstone ePortfolio course. Their rationale was that an engagement with experiential learning would be of value to students undergoing the capstone process. The students who had prior experience with reflective theories and practices revealed perceiving differences in their assimilation of the process ePortfolio format from the other students in the course. A further suggestion from the students was to generalize throughout their master's program some of the information garnered from this course namely core competencies, critical reflection, feedback interaction, and ePortfolio development.

In observing, surveying, and interviewing students, I gained insights into the experiences of students developing their capstone ePortfolios and participating in self-reflection and peer-reflection in an online learning community. Regarding the participants in this study, my findings highlight the affordance of ePortfolios to make observable the attributes of the students as they demonstrate learning, validate the importance of feedback interactions to the students, and elucidate the role of the students and value of reflection in ePortfolio projects. Regarding broader concerns of this study, the findings (a) provide insight into the development of process ePortfolios created by master's level students, (b) highlight the importance of affect in deep learning and reflecting, (c) demonstrate an application of the ecological constructivism learning theory, and (d) stimulate discussion on ePortfolio pedagogy and innovative assessment.

Recommendations

During various phases of the ePortfolio journey, community members revealed feeling confused, lacking information, and being uncertain of how to proceed. They put forth several recommendations to facilitate the journey of future students. I have added my suggestion to theirs, which were developed as a result of the findings. Together, these areas have been categorized into seven aspects of recommendations for ePortfolio courses and are encapsulated in Table 3. Each area will be discussed further separately.

Prerequisite Recommendations

Students suggested that it would be beneficial to take courses that included reflective learning activities prior to their enrollment in the final capstone ePortfolio course in the program. Their rationale was that prior engagement with reflective experiential learning would be of value to those undergoing the capstone process. Students perceived a difference in the assimilation of the process ePortfolio format between those students with prior experience of reflective practice and those without.

Protocol Recommendations

The list of recommendations compiled by the students included ways to foster connection between peers. A student revealed:

> Within my core group the interactions were integral to my success, they motivated me to keep going even when I was unsure my process was on the right track. I developed supportive friendships, and we were there to support each other through to the end of our work. I am definitely glad to have been part of their journey, and grateful they were part of mine.

One recommendation was based on the students' valuing the attendance of weekly synchronous group meetings as a means "to help encourage the growth of a strong feeling of class unity." The recommendation was that attendance be required. Another recommendation encouraged the formation of "study buddies" as a potential layer of support. By creating study buddy subcommunities, group members would be accountable to one another, and thus ensure the provision of more in-depth feedback on all seven pages of each other's collection rather than on just the first two. These subcommunities would develop a shared culture. Culture is both inside the head and also out there in the world, and encapsulates the views of the group regarding what is positive or negative, true or not, and rational or irrational (Ormrod, 2009). The students in each ePortfolio subcommunity would create their own framework, and thus determine the normalcy and feasibility of what type of support the buddies are able to provide.

Structure Recommendations

Among the suggestions that students made was a need for "strong direction provided, on a timely basis, whenever there are signs of confusion and uncertainty in the process of building an appropriate and meaningful e-portfolio." Another student expressed having some difficulty in the initial days of the course and wrote:

> In the first few weeks of the course, I struggled to relate the pedagogical elements (the artefacts and the underlying structure of the MEd program) to the desired end product. I also had to understand the use of terminology to provide precise descriptions of the elements. I think this represented an initial "zone of proximal development" for me. Fortunately, I was well supported by the academic scaffolding provided by the instructor team!

Although the course site stated that the learning environment was accessible to the new community members a number of days before the first day of the course, few students opted to log in and visit the site in anticipation of their first day in the capstone ePortfolio project course. Furthermore, since attending the first session was not yet mandatory, students who were not in attendance chose to watch the recording of the session at a more convenient time for them, which may have led to more questions than answers on their part. These factors may be contributors to a student perception of lack of course direction.

Feedback Recommendations

Students wrote that they would have "appreciated having more comments" on all seven pages of their collection. They received meaningful feedback from peers in the beginning of the course, but very little on the artefacts in the final pages. This factor is partly owed to the ongoing student presentations before the final weeks of the course, which resulted in fewer students providing feedback. Students further stated the importance of recognizing that the ePortfolio journey becomes "more meaningful through interaction with the group." They also suggested the need to "highlight the benefits of sharing feedback and mutual encouragement often, and with as wide a group of fellow students as possible." The rationale was that community members would then acknowledge the "value of feedback," and the ways it enhanced the ePortfolios when feedback was "careful, considered, and constructed" in a targeted, timely, and action-oriented manner.

Reflection Recommendations

Students referred to reflection as a tool for reviewing information in all the courses along with "many of the concepts and interactions" experienced in each of their courses and related course work. The participants who valued their reflective experiences stated that the capstone projects had been personally, academically, and professionally relevant. They further stated that these experiences had been of a reflective nature, and that the ePortfolio development had helped with their process of reflection. The recommendation was to continue and expand the use of reflective practice in online higher education.

Modeling Recommendations

Another recommendation was to structure the weekly sessions to include presentations from former ePortfolio graduates. Graduates of the program would present their own ePortfolios followed by scholarly discussions similar to the ones that follow the final student presentations. The benefits would be threefold: former students would share their experiences and highlight their accomplishments; current students would experience the protocol of a final master's presentation; and course instructors would be able to identify the students who may be needing additional support based on the questions asked following the presentations. One of the students shared the following:

> The peer review and instructor feedback and encouragement really helped focus my writing and helped me to flesh out my thoughts. Participation in the [synchronous Adobe Connect] sessions also helped quite a bit. The session by a former student specifically was moving and allowed me to see [the example of the student as] a guide to reflection.

In this social learning environment, members of the community would serve as models in terms of behaviors, values, and attitudes. This bridging of cognition and affect would undergird the subsequent student awareness of the benefits of creating a reflective ePortfolio project.

Affordance Recommendations

The final grouping of recommendations is related to the affordances of the educational technologies used in a capstone ePortfolio project course. Students reported feeling uninformed when they were faced with an intense 3-month, 7-page reflective ePortfolio project as a graduation requirement. The overall sentiment was one of needing more guidance in the initial courses of the program in order to facilitate the selection of artifacts and the alignment of the competencies in their final course. The recommendations include providing extended and continued access to the practice room throughout the duration of the course, having a dedicated link for the synchronous online sessions, and making recordings of the synchronous sessions available within the online course calendar as well as updating the course resources to make the course more user-friendly.

The process ePortfolio as a holistic experience helped learners become comfortable with articulating the attainment of competencies as a meta-analytical approach to what they learned. Learners underwent a series of emotions, feelings, and reflective experiences during the development of their projects, which included peer-review of artifacts and self-assessment of one's own attitudes toward them. The seven aspects of recommendations provide a comprehensive overview for course improvement based on the strengths of ePortfolio use in higher education.

Discussion and Findings

My primary research questions pertained to self-reflection, which is the essence of the first layer of my study. My interest was in learning the value, if any, students perceived of the reflective process in the development of their ePortfolios. The questions of the second layer dealt with peer-to-peer reflection resulting from peer feedback giving and receiving interactions. I wanted to learn more about the extent feedback interaction provided the participants a sense of belonging to a subculture in an online learning community as an instance of internet culture.

Description of a culture is the result of ethnography, and such description can only emerge from a lengthy period of intimate study in a given social setting (Van Maanen et al., 1982, p. 694). For four years, I immersed myself in the capstone ePortfolio project course site as a direct participant-observer in various roles—intern, volunteer tutor, and researcher.

My emic role as an insider enabled me to gain better understanding of the intangibles (e.g., beliefs, ideas, values, perceptions of the students) in what was to become part of the data in this online ethnographic study. I was well positioned to observe what the participants did rather than having to rely solely on their recounts of what they did.

Since I had experienced an ePortfolio as a terminal project as a graduate student, I was ready to conduct my study and pursue ethnographic findings that facilitated my descriptions of local behaviors and truths within that context. Earlier in my observations, I began embodying (turning abstract ideas into rich descriptions) the interactive processes of the learners in the community, their culture, their ways of seeing, and even some of their

innermost feelings and emotions (e.g., elation and frustration, understanding and confusion).

The rich data collected on the perceived experiences of learners in three iterations of the capstone ePortfolio course have

- provided me with better insights into the development of reflection from the point-of-view of the students;
- elucidated the importance of feedback interactions, and value of self-reflection and peer learning during the creation of ePortfolios;
- contributed knowledge on the role and impact of capstone ePortfolio projects on learning and teaching;
- brought forth discussion on the role of ePortfolio use in assessment innovation; and
- stimulated conversations on contemporary theories of learning.

These findings confirm results of research previously done that led to the recognition of ePortfolios as an impactful instructional practice and its subsequent addition to the list of high-impact practices (Kuh, 2008; Watson et al., 2016). My findings also showcase the ePortfolio as a sophisticated field of research, where rich data and meaningful experiences are abundant, observable, and educational.

As posited by Fullan (2013), technology is what transports the students from one learning stage to the next; however, "pedagogy is the driver with student learning at the center" (p. 51). Technology and pedagogy are among the four constructs on which I relied throughout my immersion in the field site (i.e., online course) and participation in a community of learners (i.e., subculture of ePortfolio creators).

Four Constructs

My study considered the connections of ePortfolios as pedagogy, the process of reflection, and the feedback interactions that fostered learning and further reflection on the artifacts displayed on the collection of pages. The ePortfolio technology became the vehicle for culture sharing among students and positioned the capstone project as a significant part of a subculture in a manifestation of internet culture. As I continued observations of students developing their projects, I noticed how pedagogy, technology, interaction, and reflection worked in tandem in the various iterations of the capstone ePortfolio project course in which I participated (see Figure 3).

Pedagogy

ePortfolio pedagogy not only enriches student learning but also helps connect practitioners with what they do daily—teach students and facilitate their learning (Eynon & Gambino, 2017). This innovative pedagogy came as a surprise to initial users and implementers, as there was little literature or prior work done in the field at the time (Danielson & Abrutyn, 1997). As such, early proponents had a "feeling hampered by no prescription or even direction" (Cambridge et al., 2009, p. 2) of what might emerge when they attempted to implement ePortfolios in their practice. In consequence, those who continue to seek knowledge about ePortfolio pedagogy see the need for more research in the implementation of this educational innovation. Educators in various fields of practice (e.g., engineering, nursing, business) continue to seek ways to learn more about how to apply ePortfolio projects not only to help students learn better, but also support reflection (Jayatilleke & Mackie, 2011; Sepp et al., 2015; Slepcevic-Zach & Stock, 2018). The literature presents ePortfolios as an educational innovation that fosters new uses (e.g., as a capstone project of culminating experiences) and leads to new research findings (e.g., ePortfolio as a high-impact practice; Watson, Kuh, Rhodes, Light, & Chen, 2016; Kuh, 2008). When I began this study with master's students, my view of ePortfolios placed them as a technology-enabled pedagogy, and as a key part of a digital ecosystem in a specific instance of internet culture. My initial perception evolved as the study progressed. As such, I continued an ongoing quest for knowledge about this education innovation (Eynon et al., 2014). Consequently, I began to understand the importance of professional self-development mediated by ePortfolios (Zuba Prokopetz, 2018a) to help educators and learners attain the higher-order level of competencies required for the digital society. With the rapid development of information and communication technologies (ICT), the learning and teaching of these competencies are now essential (Benito-Osorio et al., 2013). The prevalence of social and emotional competences is now posing a challenge for institutions worldwide causing ill-prepared educators to be unable to properly prepare their students. Benito-Osorio et al. (2013) posited that some of the challenges universities currently have in preparing academic staff for the future results from the evolution of the Web.

For example, during Web 1.0, the read-only, one-way interaction web, the soapbox lecturing style was prevalent in higher education. In the second generation, Web 2.0, the read-write online social network web, teaching—rather than lecturing—became student-centric and collaborative. The third generation, or Web 3.0, began to allow data to be used across application and community boundaries, which enabled machines to not only understand but also respond to human requests. With the mobile web, or Web 4.0, consumers were able to connect their devices in real time. The

fifth-generation web, Web 5.0, however, is more sophisticated; it is open, linked, and intelligent. As the emotional web, it will require a higher level of competence, since it connects users with one another via data placed on the web by the users themselves. The linked data are based on documents, places, people, products, and events; the more connections provided by the data, the more powerful the data will be (Berners-Lee, 2009). This new generation is evolving the web into a world data space (Berners-Lee, 2009), thus positioning ePortfolios as a sophisticated research site in internet spaces.

I see a parallel between the evolution of the web throughout the previous 20 years (from web of content to web of thoughts) with the types of pedagogy applied in higher education (from teacher-controlled lecturing to guided student-managed production of learning). The fifth-generation web in this era of sensory and emotional knowledge, as evidenced in capstone ePortfolio projects, necessitates that educators "develop emotional competences and transmit them to their students in order to produce graduates who will be more adaptable to new socio-professional contexts" (Benito-Osorio et al., 2013, p. 274). In consequence, in order to help educators develop the interpersonal and intrapersonal competences required for the emotional web, policy makers in colleges and universities must engage in serious discourse about how to better prepare their academic staff for what is inevitable—the use of sound pedagogy in learning and teaching with ICT.

The future of ePortfolios—as I envision—encompasses changes in terms of theoretical constructs and educational practice, which include some form of differentiated teaching (rather than lecturing) and adoption of capstone ePortfolio projects to provide the proper venue for educators to:

- re-learn their craft,
- express their creative side,
- engage in self-reflection,
- develop social-emotional competence for online spaces, and
- achieve mastery learning and teaching with innovative tools.

As a result, the students in the courses of these instructors will be able to demonstrate their learning to date in more productive and artistic ways.

Technology

There are currently many technologies that make it possible for students to showcase their achievements and for their instructors to conduct assessments. ePortfolios, which I consider a form of "non-traditional learning" (Wedemeyer, 1981, p. 219), have emerged as a technological tool that

- enables teachers to assess their students (assessment ePortfolio),
- helps students to showcase their achievements (showcase ePortfolio), and
- makes affordances for the development of reflection (process ePortfolio).

Although initially seen as a technology, ePortfolio implementers such as Light et al. (2012) recognized that "pedagogy *must* lead the technology" (p. 148), as our students are undoubtedly the most important stakeholders in an ePortfolio development process. In addition, learning the technology on its own does not enrich student learning (Eynon & Gambino, 2017). Therefore, it is important for ePortfolio implementers and educators to be cognizant of the ways technology may at times help and at others hinder the ePortfolio development process of their students.

During my initial participation as a user (as a learner), and also as an implementer (as an educator) of ePortfolios, I noticed that there were challenges that both my students and I had to overcome related to learning how to use the technology and reflecting on the events afforded by ePortfolio technology. I also noticed that, as my students (adult language learners) learned to use the ePortfolio tool (a challenge in and of itself), they engaged in awareness and an ongoing process of thinking about what they were experiencing. In addition, there were some aspects of peer interaction among the students that facilitated the development of reflection and the subsequent articulation of not only what was happening but also how and why it was happening in such a way. These peer interaction efforts facilitated by this instructional technology gave birth to and even strengthened learning communities, as I observed both in my blended ESL class and also in the online master's level course in the study.

Interaction

Feedback interaction and assessment of self and others is one way of exposing educators and students to reflection. This assessment of self, or one's thoughts about one's actions, can also be referred to as reflection and metacognition (Blackburn & Hakel, 2006). The ePortfolio development facilitates metacognition because it enables the creators to engage in self-assessment and self-reflection (Commander & Valeri-Gold, 2001; Hamm & Adams,1992). This type of self-reflective learning is also evident during the feedback interactions among peers in an ePortfolio community of learners.

Feedback is an instructional tool with great impact on learning, and, as I observed, on the effective development of ePortfolios. Feedback, as defined by Hattie and Timperley (2007), is a conceptualization of comments from one person to another, where the provider of the feedback (the feedback giver) may be another person, a technology, an experience, or even oneself. As such, feedback may come as (a) corrective measure (from an instructor or a colleague), (b) learning strategy (from a peer), (c) support (from a peer, an instructor, or a tutor), and (d) self-evaluation (from a technology and course resources).

Alternative ways of one's perception of learning outcomes may either hinder or help with the proper use of feedback in the teaching-learning process. For instance, feedback received on an assessment is viewed by the receiver as a corrective measure; however, when a peer provides feedback, it becomes a learning strategy—a demonstration of students helping each other in a learning community. Whether students incorporate or not the comments made by a peer on their artifacts, they are still required to articulate directly on the ePortfolio pages the rationale for their choice of accepting or not the suggestions made; an activity that leads to moments of self-assessment. In the courses that I observed, peer review promoted peer-to-peer engagement, helped reduce instructor presence, and led to proper understanding and application of the inquiry cycle—social, cognitive, emotional, and teaching presences (Vaughan et al., 2013). This line of thinking aligns with some of the principles of *transactional distance* what Moore (2007) described as a space that engaged learners cross (and instructors observe) in the online learning process in order to reduce instructor presence while maintaining teaching presence. When the process is successful, it brings together structure, interaction, and autonomy (Wedemeyer, 1981), as demonstrated in peer-to-peer online interactions. In other words, when students recognize (knowledge utilization) and respond to (analysis of information) the feedback from their peers on the various artifacts of their collection, they begin to value the experience (Krathwohl et al., 1964; Marzano & Kendall, 2007).

The feedback construct is a complex instructional tool that necessitates proper guidance and application during project-based learning endeavors that include ePortfolios. I view feedback as a learning strategy that is emotionally laden for both the givers and the receivers. Key aspects to consider in feedback interactions include attentiveness and willingness of the feedback-receivers during the accepting and subsequent incorporating of the feedback received from peers. Learner disposition on a particular day is also an important element not to be overlooked during the placement of comments on the artifacts containing student reflection on the learning to date. Both feedback giver and receiver share equal responsibility on how they perceive the giving and the receiving of comments on each other's ePortfolio pages. By allowing the students to feel the emotions as they struggle during this feedback phase of their capstone projects, instructors are helping their students move to higher levels of comprehension.

Reflection

Reflection has been described by Dewey (1933) as "an active, persistent and careful consideration of any belief or supposed form of knowledge" (p. 118). Reflection involves more than thinking; it requires more than the quietness of everyday life, and it seems to be triggered, as I have had the opportunity to observe, during trying times in our educational journey. The ePortfolios foster reflection but having the ability to reflect requires time and effort. This fundamental thinking ability is presenting itself as a necessity in this ever-changing world, as Batson (2018) argued; however, learning how to reflect, he added, does not seem to be very compatible with the current structure and practice of higher education. As students participate in the development of their ePortfolio collection of pages in a community of learners, they engage in various forms of reflective thinking. However, reflection, as suggested by Rose (2013), involves more than just a careful thought, as "it connotes quietude, solitude, and a leisurely involvement of ideas" (p. 2). Reflection seems to appear when conditions of learning are such that they evoke our inner-most thoughts about our own learning. As posited by Hoven (2018), "reflection is what happens in the interstices in our minds between stillness and cognition. It is where creativity and deep understanding emerge—including creativity of thought and ideas."

During these moments of calmness, we find ourselves engaging in thoughts, some of which are quite difficult for us to properly explain (Dewey, 1933). As I learn about the various definitions and interpretations of concepts like thinking, thought process, critical reflection, and the process of reflection, I further understand Rodgers' (2002) description of reflection as "a skill that is vaguely defined" (p. 842), and I begin to view the concept of reflection as being often misunderstood, and sometimes even improperly applied. As educators, we may consider transforming the current structure and practice of higher education to make room for reflection, this fundamental thinking ability that continues to present itself as a necessity in this ever-changing world (Batson, 2018). In order to do so, we must first grasp what reflection means. In the past two decades, boards and foundations have identified systematic reflection "as a standard toward which all

teachers and students must strive" (Rodgers, 2002, p. 842). However, achieving such a standard has proven to be a difficult undertaking, since it is unclear "what reflection looks like," thus making it hard to "assess a skill that is vaguely defined" (Rodgers, 2002, p. 842).

Reflection is sometimes inaccurately referred to as critical thinking—a purposeful, reasoned, targeted, and goal-oriented endeavor (Rose, 2013), or as reflective thinking—a part of critical thinking that "consists of a succession of things of thought" (Dewey, 1933, p. 114). Reflection, according to Jacoby (2011), is more than "a neat and tidy exercise that closes an experience with a nice, tidy, little bow. Rather reflection is ongoing, it's often messy, and it provides more openings than closings" (p. 5).

During my observations and participation in online communities where the members were developing their ePortfolios, I noticed the serious attempts made by the graduate students to immerse themselves in reflective thoughts described by Rose (2013) as an ongoing "habit of the mind" (p. 9). During these moments, the students focused on their thinking to facilitate their immersion in deeper thought processes in order to reflect critically. Responses to my research questions are grounded on this deeper level of thinking by ePortfolio creators.

Future Research

Technology continues to change rapidly, and professionals in all fields have been pressured to introduce some form of innovation in their practice. Although training for new methods, procedures or equipment is a requirement in every job, such training is not always present in every profession. The field of education is among those where daily expectations often overburden many of its practitioners who require consistency, and some degree of normalcy in order to deliver their craft. We possess to some degree, as argued by Maslow (1968), an inner nature that is "intrinsic, given, and in a certain limited sense, unchangeable, or at least unchanging" (p. 3). This inner nature, he further suggested, can be easily overcome by habit and cultural pressure due to its subtle and delicate state. As educators, we help shape minds; as humans, we aim to shape our own.

In a community of ePortfolio developers, it was observable the changes that occurred resulting from, as posited by the students themselves, the "habit" of the learners and, to a certain degree, the "pressure" by the members of this culture-sharing community. The students were involved in varying forms of peer-pressure during the peer-feedback interactions translated as overt behaviors that ranged from unresponsiveness to attentiveness.

An interaction of practical and/or theoretical forces can either foster or discourage growth in an area of higher education; such interaction may result in one's growth or non-growth (Maslow, 1970, 1971). Therefore, further ethnographic observations could underpin a future study on feedback interaction in an online community of learners in both blended and fully online formats, which may include the concept of a study buddy. In addition, although different online groups of students also engage in interaction and reflection, the online cohort-based course, an area beyond the scope of my current research, could also be the focus of a study.

As discussed before, in the field of education, it is not uncommon for practitioners to apply what they know about a concept before research findings on that concept are made available (Bryant & Chittum, 2013). Therefore, with a growing need for research on online pedagogies, and an existing interest by institutions to provide professional development for faculty, the time has come for practitioners to engage in ePortfolio learning. As a high-impact practice and powerful pedagogy, the ePortfolio espouses innovation in teaching and learning and constitutes an elegant research area; as such, with proper guidance, practitioners have an opportunity to develop research skills. The findings from their studies may foster future research that can contribute to the shared knowledge of ePortfolios as a practical application or a theoretical pedagogy.

Table 4 lists eighteen diverse potential directions of future research clustered into seven distinct areas. They are interaction, technology, taxonomy, self-development, pedagogy, reflection, and feedback. Each of these areas will be discussed separately.

Interaction

Student engagement and interaction in both non-cohort and cohort-based programs at undergraduate, graduate, and post-graduate levels are concepts often aligned with student retention, satisfaction, and program completion. Future research could compare interaction through ePortfolios in programs that are cohort based and non-cohort based. In addition, observations of interactions between study buddies may be an area for future research in both blended and fully online courses and programs.

Technology

Educators and learners are positioned at two different ends of the technological spectrum. There is currently a technology dissonance between what instructors and students need in terms of knowledge, skills, and comfort levels using technology and what institutions are doing to encourage (and most often discourage) them to apply in their teaching and learning. There is a disconnect between what students

Table 4
Seven Areas of Future ePortfolio Research

Areas	Future ePortfolio research
Interaction	• Cohort-based versus non-cohort-based programs. • Groups with study buddies within the larger group. • Blended format versus distance education.
Technology	• Application and training while learning to use it. • Monitoring and guiding while teaching with it. • Availability of platforms and ease of application.
Taxonomy	• Analysis of the affective domain. • Approaches to domain integration. • Standard terminology for concepts.
Self-development	• Influence of ePortfolio application. • Awareness of positionality and perspectives.
Pedagogy	• Impact of ePortfolio pedagogy. • Influence on current practices. • Effect on assessment and demonstration of learning.
Reflection	• Value and application. • Cross-disciplinary terminology and framework.
Feedback	• Application and monitoring. • Analysis of approaches.

need and what instructors can offer them. Educators and learners are positioned at two different ends of the technological spectrum. At one end, the technologically savvy learners want to rely on innovation to both learn and demonstrate achievements. At the other end, the pedagogically inclined educators may have failed to recognize the advantages of (properly) applying innovation in their practice. Practitioners and theorists of ePortfolios benefit from the continued evaluation of the technology itself, making this an unending area of potential research. Future research may focus on the impact of having to concurrently learn to use the technology of ePortfolios and learn the curriculum of the course. Similarly, the focus of another study may be on monitoring the activities of instructors and the guidance they receive during the implementation of ePortfolios in their practice as they teach the curriculum.

Taxonomy

The interest in domain integration has created a need for studies that are underpinned by the value system and that align competencies with learning experiences. Participants in a future study may be educators who embrace ePortfolio pedagogy, and who are willing (and able) to ignite a flame, spark a passion, and inspire a mind as a result of their professional self-development endeavors. The study may focus on how educators redefine their assessment methods to enable students to engage in meaningful learning experiences in the metacognitive and self-systems. Studies may also include students who have experienced ePortfolio as disruptive pedagogy in a course or program of studies. The study could focus on the perception of these students as it relates to their sentiments before, during, and after their articulation of learning experiences (knowledge, skills, attitudes) as they develop their capstone ePortfolio projects as an innovative form of assessment.

Self-Development

The ePortfolio projects enable their creators, students, educators, or administrators, to immerse themselves in an inward journey of self-discovery. This intellectual, philosophical, and educational experience allows for gradual transformation of thought processes in terms of theoretical constructs and educational practice. Future research could focus on the strength of ePortfolios as a form of professional self-development for educators. This innovative pedagogy is now becoming an appropriate venue for educators to re-learn their craft, to express their creative side, to engage in self-reflection, to develop social-emotional competencies for online spaces, or to recognize the importance of proper application of innovative tools in online pedagogy. Future research on student self-development through ePortfolios may identify patterns of influence or positionality of student perspectives on the curriculum and program of studies or on their learning experiences.

Pedagogy

Innovative pedagogies provide students and teachers with transformative ways to learn and teach, when opportunities are available. As previously mentioned, there is a disconnect between the 20th century curriculum adopted in many programs (writing for an audience of one) and a 21st century framework that includes projects such as ePortfolio development (co-creation of knowledge in an online learning community). Therefore, there is a need for studies which focus on the shared knowledge of ePortfolios as a practical application or a theoretical pedagogy. Future research could explore the impact of ePortfolio pedagogy on the application of contemporary theories of learning, educational practices, or learning assessment.

Reflection

As we continue using technology in our practice, we necessitate a certain daily dose of reality, consistency, and normalcy, so we can continue to thrive as human beings and prosper as learners and professionals. Reflection, which is an acquired skill, deepens our thoughts, soothes the soul, calms the mind, and lightens pressures of everyday life. Further studies on ePortfolios in higher education may focus on the following areas of this acquired skill: its acquisition and mastery, value and application, or cross-disciplinary terminology and framework.

Feedback

Feedback (either giving or receiving) is underpinned by both cognition and affect. The art of receiving and giving feedback can be learned and mastered. Feedback receivers initially undergo a form of inner turmoil and a period of disquieting mental activity that leads to awareness, discernment, and critical reflection. Similarly, feedback givers also experience emotional commotion as they craft feedback that is specific, gentle and yet targeted, action oriented, and timely. In an ePortfolio community of learners, feedback givers include instructors, tutors, interns, and peers. Feedback, as a skill that espouses cognition and affect, is emerging as an area of interest in online and blended learning spaces. Future research could explore effective methods of guiding and monitoring the application of ePortfolios as it relates to feedback interactions. The focus of a future study could be on an analysis of the feedback giving and receiving approaches used by members of an ePortfolio community, or through the observing eyes of a researcher.

Conclusion

The students in my study developed, revised, and submitted their capstone ePortfolio projects during the three months of their final course in a graduate program of studies. Each ePortfolio project was a compilation of one student's selection of artifacts, curated into a collection of pages, and housed in an electronic-enabled learning site. As an internet technology-enabled learning site, ePortfolios foster active learning, learner engagement, and the process of reflection (Watson et al., 2016). In this study, I considered aspects of ePortfolios as they relate to the pedagogy that undergirds the learning and reflective process, the technology that enables feedback interactions, and the development of reflection afforded by the combination of the technology and chosen pedagogy, which includes the interaction among community members. This study sought to elucidate the importance of technology, pedagogy, feedback interaction, and reflection as students experienced the creation of their ePortfolios. My observations and analysis of the student responses helped me view these four constructs as significant components in ePortfolios.

The ePortfolio ecosystem, underpinned by construction and co-construction of knowledge, is where the members of an ePortfolio community demonstrate cognition and affect, as they rely on the affordances of their learning environment to complete their ePortfolio projects. Once cognition (what), affect (how), and conation (why) begin to work in tandem, students begin to engage in deeper learning and reflection which result in the creation of different products (ePortfolio technology) to demonstrate their learning (ePortfolio pedagogy). They become self-motivated, curious, self-regulated, and passionate about including artistry and creativity to demonstrate the learning that has taken place over a period of time.

Emerging from my observations are areas that may cause significant impact of ePortfolio pedagogy on educational programming, and they include assessment and artifacts. In terms of assessment, instructors can develop ways to leverage ePortfolio capabilities in order to assess learning rather than judge learners. In other words, ePortfolio proponents can help shift the existing mindset of instructors from measurement of knowledge to application of learning. The second aspect is related to the artifacts used by instructors (to assess learning) and created by students (to demonstrate evidence of learning). Instructors tend to rely on rubrics and checklists, but students perform better when they engage in self-assessment and peer-review of their projects, as in a capstone ePortfolio project. In consequence, students begin to rely on critical self-reflection as they attempt to attend and respond to (affective domain) as well as understand (cognitive domain) the feedback they receive on each page of their collection.

This mixed-method study investigated the perceptions of participants from one particular educational institution; therefore, the results may not be readily applied to other courses where students

participate in the development of their capstone ePortfolio projects. Educators contemplating ePortfolio implementation in their practice may consider conducting studies using a mixed-methods online ethnographic research design that rely on the analyses of their learners' ePortfolio reflective passages in conjunction with observational methods; subsequently, they will be able to report on the mastery of complex competencies resulting from properly implemented ePortfolio projects, as suggested by Scully et al. (2018). In consequence, there will be implications for future scholarship and research on ePortfolios as disruptive pedagogy for blended and online learning spaces.

Final Reflections of an ePortfolio Researcher in Internet Spaces

My ePortfolio experiences have enabled me to discover the joy of observing learning. Since the early 2010s, I have benefitted from studying with and about ePortfolios on a personal, academic, and professional level. The essence of my experiences includes both "aha" and "oh, no!" moments.

Personally, I engaged in self-development while creating ePortfolios in various contexts. These professional learning experiences have brought forth the notion that learning is ubiquitous, ongoing, and energizing. Learning can emerge in moments of utter confusion, uncertainty, or realization. My ePortfolio experiences have also enabled me to see that critical reflection emerges amidst moments of both calmness and chaos and are (more often than not) accompanied by frustration, elation, productivity, or creativity.

Academically, I allowed myself to reflect critically on my learning while completing ePortfolios for courses in my master's and doctoral programs. I experienced the value of peer interaction and feedback (giving and receiving) as I began to understand "the connections that enable us to learn more are more important than our current state of knowing" (Siemens, 2005, p. 5). Learning from and with the application of feedback to the thoughtful and meaningful development of ePortfolios have enabled me to experience moments of critical reflection and deep learning.

Professionally, I relied on the collection of pages of master's students for my ongoing observations of peer-to-peer feedback interactions and subsequent alignment of the competencies to their learning. In my ESL practice, the capstone ePortfolio projects have enabled language learners to view their learning to date as they revisit (and aim to comprehend) their learning process over a period of time (within a semester).

In my learning journey during my research, I recognized my need to change my positionality and infuse my theoretical views with a more contemporary approach to better understand what I was undergoing. Participants of internet learning spaces, both educators and students, find the learning and teaching experience complex. Members of a community of capstone ePortfolio projects identify their experience as challenging. Therefore, there is a need for the institution of education to provide opportunities for the community to revisit the theories of learning, classical and contemporary approaches, to enable its members to experience the current way of perceiving, knowing, and applying knowledge.

In my practice, I moved from initially being the one who shared knowledge with my learners to gradually gravitating towards being the one who enabled them to seek knowledge as they made sense of the affordances in their online learning community; an environment where "learning is like a drug," as posited by a former ESL student. The student further added that, as a result of his collaborative learning experiences in the vast spaces of the internet, he "had become addicted to learning"—sentiments I share with all my students. This example demonstrates how the learning flame can be ignited by learners and educators alike when their online spaces are conducive to learning.

As previously mentioned, my ePortfolio experiences have enabled me to discover the joy of observing learning. As I stepped back and allowed for ePortfolio moments to occur, I experienced a pedagogical concept that (a) underpins learning at a distance; (b) fosters learning when actors are geographically separated; (c) facilitates interaction with peers, instructors, and content; and (d) encourages learner self-directedness (Moore, 2007). Transactional distance, a psychological and communication space that comes with geographic separation, manifests in specific patterns of behavior on the part of the students and instructors (Moore, 2007). This pedagogical concept describes learning spaces where instructors, students, learning structure, and learner self-directedness interconnect. Similarly, the ePortfolio projects, as both technology and pedagogy, allow for variations in behaviors on the part of the users; foster learner self-directedness; encourage peer-interaction; and enable growth on a personal, academic, and professional level. In my study, those students who allowed themselves the time and space for soul-searching thoughts of their learning to date reported having a more meaningful experience during the development of their projects.

The concept of this research study began to take shape when I experienced the electronic version of portfolios in my own practice as a language instructor and college educator (2013). It evolved and was conceptualized during my 3-year immersion in the community of graduate students (2015-2017) and subsequent 1-year research in three iterations of a capstone ePortfolio project course in a university in western Canada (2018). These rich experiences have

enabled me to grow personally, academically, and professionally. They have also cemented my passion about ePortfolios for learning and teaching and have contributed to my study.

This paper has provided me with a platform to share my journey as a doctoral student who observed how meaningful educational events can cause, as Ragan (1999) described, sustainable behavioral changes, and substantial student learning. As a learning site, ePortfolios provide the terrain for such changes to happen.

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Appendix A
Open-Ended Questionnaire

Capstone Electronic Portfolio of Master's Students: An Online Ethnography

Principal Investigator (Researcher): Rita Zuba Prokopetz Email: rprokopetz1@athabasca.edu

Date: _____ Code: _____

This study proposes two layers of investigation into the experiences of students in an online master's program in a fully online university in western Canada. Your participation in this first part of my project includes your response to this open-ended questionnaire (via email). The expected length of time is approximately 15 minutes of your time. You have between January 15 and January 22, 2019 to complete this part.

1. When you were participating in your capstone eportfolio project course, what value, if any, did you perceive regarding the reflective process? (choose one)

Some value	No value	Not sure
◯	◯	◯

2. What were your overall perceptions of the development of reflection during your experiences with your capstone eportfolio project? (please explain)

3. To what extent does giving and receiving feedback provide students with a sense of being a part of a subculture of an online community of learners? (choose one)

Some sense of belonging	No sense of belonging	Not sure
◯	◯	◯

4. How did you perceive your experiences as peer-feedback giver in the development of reflection as you participated in a capstone eportfolio project? (please explain)

5. How did you perceive your experiences as peer-feedback receiver in the development of reflection as you participated in a capstone eportfolio project? (please explain)

Thank you for participating in my research project. If you have any questions at any time during your participation, or if you require more information, please contact me by email at rprokopetz1@athabasca.edu or my supervisor by email debrah@athabascau.ca or by toll-free phone: +1 866-441-5517.

Appendix B
Semi-Structured Interview Prompts

Capstone Electronic Portfolio of Master's Students: An Online Ethnography

Principal Investigator (Researcher): Rita Zuba Prokopetz
Email: rprokopetz1@athabasca.edu

Date: _____ Code: _____

This study proposes two layers of investigation into the experiences of students in an online Master's program in a fully online university in western Canada. Your participation in this second part of my project includes an in-depth semi-structured interview (via Skype) with your subsequent approval of the transcript. The expected length of time is between 30-45 minutes, plus an additional 15 minutes to allow me to share the transcript of my notes with you. You may choose the questions you prefer to answer in each of the themes. You have between January 25 and January 31, 2019 to complete this part.

What is your overall feeling toward the capstone eportfolio project?

What areas of your process eportfolio journey were the most challenging for you?

What areas of your process eportfolio journey were the most rewarding for you?

What aspects of your capstone eportfolio project development do you feel have helped your ability for critical reflection as you were completing your collection of pages?

What aspects of your capstone eportfolio project development do you feel have hindered your ability for critical reflection as you were completing your collection of pages?

What is your opinion about the peer-feedback interactions, as a feedback giver, during the development of the capstone eportfolio projects?

What is your opinion about the peer-feedback interactions, as a feedback receiver, during the development of the capstone eportfolio projects?

What aspects of the process eportfolio as they relate to the technology did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the pedagogy did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the development of reflection did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the technology did you find were the most rewarding for you?

What aspects of the process eportfolio as they relate to the pedagogy did you find were the most rewarding for you?

What aspects of the process eportfolio as they relate to the development of reflection did you find were the most rewarding for you?

What aspects of the eportfolio journey helped trigger your ability to engage in critical reflection as you were completing your collection of pages?

To what extent have the peer-feedback interactions in this course provided you with a sense that you belonged to an online community of learners?

At what point during your capstone eportfolio development did you feel that you were able to fully immerse yourself in the critical reflection required for the completion of your eportfolio project?

NOTE: You may also opt to be present during my viewing of the recording of your capstone eportfolio project presentation between February 01 and February 10, 2019.

Thank you for participating in my research project. If you have any questions at any time during your participation, or if you require more information, please contact me by email at rprokopetz1@athabasca.edu or my supervisor by email debrah@athabascau.ca or by toll-free phone: +1 866-441-5517.

Appendix C
Revised Semi-Structured Interview Prompts

Capstone Electronic Portfolio of Master's Students: An Online Ethnography

Principal Investigator (Researcher): Rita Zuba Prokopetz Email: rprokopetz1@athabasca.edu

Date: _____ Code: _____

This study proposes two layers of investigation into the experiences of students in an online Master's program in a fully online university in western Canada. Your participation in this second part of my project includes an in-depth semi-structured interview (via Skype) with your subsequent approval of the transcript. The expected length of time is between 30-45 minutes, plus an additional 15 minutes to allow me to share the transcript of my notes with you. You may choose the questions you prefer to answer. You have between March 01 and March 08, 2019 to complete this part.

CAPSTONE EPORTFOLIO PROJECTS

What is your overall feeling toward the capstone eportfolio project?

What areas of your process eportfolio journey were the most challenging for you?

What areas of your process eportfolio journey were the most rewarding for you?

CAPSTONE EPORTFOLIO PROJECTS / CRITICAL REFLECTION

What aspects of your capstone eportfolio project development do you feel have helped your ability for critical reflection as you were completing your collection of pages?

What aspects of your capstone eportfolio project development do you feel have hindered your ability for critical reflection as you were completing your collection of pages?

What aspects of the process eportfolio as they relate to the development of reflection did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the development of reflection did you find were the most rewarding for you?

What aspects of the eportfolio journey helped trigger your ability to engage in critical reflection as you were completing your collection of pages?

At what point during your capstone eportfolio development did you feel that you were able to fully immerse yourself in the critical reflection required for the completion of your eportfolio project?

CAPSTONE EPORTFOLIO PROJECTS / CRITICAL SELF-REFLECTION

At what stage of your capstone eportfolio project development did you begin to experience the need to go deeper inwardly as you attempted to connect some of the program competencies to your learning experiences to date?

What is your perception of the affordances provided by the capstone eportfolio development as they relate to facilitating a process of awareness: awareness of self; awareness of learning (ah, ha! and oh, no! moments); awareness of community; and awareness of your own gifts?

What aspects, if any, of the eportfolio as a product (the platform, the technology) and as a process (the capstone eportfolio project development) hindered your ability to travel inwardly as you attempted to align learning goals (from both beginning and end of your program) and competencies with your learning to date?

What aspects, if any, of the eportfolio as a product (the platform, the technology) and as a process (the capstone eportfolio project development) facilitated your ability to travel inwardly as you attempted to align learning goals (from both beginning and end of your program) and competencies with your learning to date?

CAPSTONE EPORTFOLIO PROJECTS / TECHNOLOGY

What aspects of the process eportfolio as they relate to the technology did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the technology did you find were the most rewarding for you?

CAPSTONE EPORTFOLIO PROJECTS / PEDAGOGY

What aspects of the process eportfolio as they relate to the pedagogy did you find were the most challenging for you?

What aspects of the process eportfolio as they relate to the pedagogy did you find were the most rewarding for you?

What aspects of learning (about self, about the process eportfolio, about the community of learners) were the most helpful for you as you attempted to complete your project?

What aspects of cognition (what I am learning), affect (how I feel about what I am learning), and conation (why I am learning this) have been helpful during your eportfolio development journey?

CAPSTONE EPORTFOLIO PROJECTS / MODELING

What is your overall feeling toward the modeling provided by instructors and peers (former and current) during the development phase of the capstone eportfolio project?

What is your overall feeling toward the modeling you have personally provided to your peers (in this or previous eportfolio course iterations) as they relate to facilitating the completion of the capstone eportfolio projects?

What is your perception of the modeling that peers (from this course or previous course iterations) have provided as they relate to facilitating the completion of the capstone eportfolio projects?

CAPSTONE EPORTFOLIO PROJECTS / FEEDBACK

What is your opinion about the peer-feedback interactions, as a feedback giver, during the development of the capstone eportfolio projects?

What is your opinion about the peer-feedback interactions, as a feedback receiver, during the development of the capstone eportfolio projects?

What were your overall feelings before, during, and after some of your feedback-giving experiences?

What is your perception of your own feedback-giving experiences as related to the beginning of your project?

What is your perception of your own feedback-giving experiences as related to the time when you were completing your project?

What is your opinion about your experiences with feedback-receiving from your first acknowledgement of the comment by a peer up to a possible inclusion of the suggestions in your artefacts?

What is your perception of your experiences with feedback-receiving during your discerning and evaluating of what suggestions to include in your artefacts after your first acknowledgement of a comment by a peer?

PEER-FEEDBACK INTERACTIONS / COMMUNITY OF LEARNERS

To what extent have the peer-feedback interactions in this course provided you with a sense that you belonged to an online community of learners?

What aspects of interaction, if any, via feedback giving and receiving contribute toward strengthening a community of learners?

What is your experience with interaction, via feedback giving and receiving, and your bonding with members of an online community of learners?

NOTE 1: You may also opt to be present during my viewing of the recording of your capstone eportfolio project presentation between February 01 and March 08, 2019.

NOTE 2: You may withdraw from the study at any time during the data collection between February 01 and March 08, 2019 by contacting me via email rprokopetz1@athabasca.edu, and I will remove from my records all data along with the codes associated with your responses.

Thank you for participating in my research project. If you have any questions at any time during your participation, or if you require more information, please contact me by email at rprokopetz1@athabasca.edu or my supervisor by email debrah@athabascau.ca or by toll-free phone: +1 866-441-5517.