

ATHABASCA UNIVERSITY

EXPLORING THE PROCESS EPORTFOLIO OF GRADUATE STUDENTS IN AN
ONLINE ENVIRONMENT

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Approval Page

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PROCESS EPORTFOLIO OF GRADUATE STUDENTS IN AN ONLINE
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Dedication

To my husband and life-partner, Mel

Thank you for your patience, understanding, and for the many late nights that you kept me company while I worked.

Abstract

This concurrent mixed methods study explored some of the factors that characterize student perceptions of the ePortfolio process as a capstone project in an online environment. Factors include: knowledge attainment, the understanding and application of critical reflection, and sharing of this knowledge with the broader community. The study also attempts to determine the influences that may have impacted these students in their decision to pursue the process ePortfolio versus the traditional thesis route. Through reflective processes and critical reflection on various digital artefacts collected, students demonstrate the attainment of various competencies that are mandated in this program. The epistemology and strategy of inquiry in this research incorporates a pragmatic paradigm (worldview) obtained through practical experiences. Recommendations to the program include incorporating ePortfolio preparation and overt critical reflective activities earlier in the Master program; both of which can be accomplished through improved communication and enhanced support.

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List of Acronyms

ALTC	Australian Learning and Teaching Council
ARM	Advanced Research Methods
ASPE	Accounting Standards for Private Enterprises
CDE	Centre for Distance Education
CDS	Core Data Service
COI	Community of Inquiry
CPA, CMA	Certified Public Accountant, Certified Management Accountant
ECAR	EDUCAUSE Centre for Analysis and Research
EPSPI	Electronic Portfolio Student Perspective Instrument
FGS	Faculty of Graduate Studies
GAAP	Generally Acceptable Accounting Principles
ISS	Interpretive Social Science
M.Ed.	Master of Education
MOOC	Massive open online courses
NCES	National Center for Education Statistics (US Department of Education)
NCLRC	National Capital Language Resource Center
SCETA	Survey of Current Educational Technology Applications
SPSS	SPSS, predictive analytics software
SSHRC	Social Science and Humanities Research Council

“Do not block the road to inquiry and look to the consequences”

(Cherryholmes, 1992, p. 16)

Chapter 1 - Introduction

Knowledge gained of any given phenomenon may be obtained through quantitative, qualitative, or mixed methods research, from popular belief based on our own personal experiences within the environment with which we live, or from individuals with which we associate. This mixed methods study explored the learning experiences and attainment of knowledge achieved by Master of Education (M.Ed.) students in an online environment. Through compilation and critical reflection by students on a selection of digital artefacts, the creation of an ePortfolio emerges. The end result is a final capstone project, which is a requirement for obtaining a M.Ed. degree at the online western Canadian university in this research study. The study sought to examine the experiences and resulting influences that may have impacted the graduate students to pursue the M.Ed. via the course-based route (ePortfolio) rather than the thesis route. Through this decision process to pursue the course-route ePortfolio, insights and challenges of the students in the creation, preparation, and submission of an ePortfolio were examined. Critical reflection and its role and application within the ePortfolio were also explored. I then explored if students perceived that the broader community would accept and value knowledge gained by the participants through the ePortfolio process.

The research study was based on a phenomenological research method, which allowed me to collect diverse types of data and to experience the research process on a first-person basis. By incorporating a pragmatic foundation (worldview) for the research,

I was able to explore the experiences of the participants through the scaffolding of the qualitative and quantitative results, with a view to understanding of the questions asked.

As a participant noted through the semi-structured interview to me,

- *“I think you get the best of both worlds, because you get to do the thesis, and learn about what was in the EP”* (Edu-12)

Significant findings and resulting implications are then provided for consideration, by the Faculty of Graduate Studies of this western Canadian university as suggestions for improvement to professional graduate education practice.

Following a pragmatic route allowed me to explore statements from participants through these consequences. James notes that, “the pragmatic method . . . is to try to interpret each notion by tracing its respective practical consequences“ (1907/2010, p. 36). I propose that knowledge, according to norms of the scientific community should be shared, challenged, questioned, and examined. This aligns with Merton’s (1942) norms of science, governance and quality. Quality is considered an evaluative norm that ensures careful examination by scientists/researchers and relates to methods used in research (Neuman, 2011, p. 14). I am interested in hearing the voices of the participants through their written words from the online survey that will be used as one means to gather quantitative and qualitative information. Subsequent to the survey were individual semi-structured interview meetings via Skype™ from nine of the participants, which allowed me to further question and examine their responses and challenged me to ensure the participant’s responses were accurate in this context. Of interest to myself is the first Mertonian norm of ‘communalism’ based on the principle that “scientific findings are always a product of collaborative efforts”, (Anderson, Ronning, DeVries, & Martinson,

2010, p. 4) as this approach lends itself to sharing of information, peer review and examination by scientists/researchers. Neuman concurs and notes “a key principle [of new knowledge] is to share one’s research findings and techniques with others in the community; that the findings of scientific knowledge are public property, available for all to use.” (2011, p. 13). I agree with Neuman, that knowledge belongs to all, and that “knowledge must be shared with others” (Neuman, 2011, p. 14).

Included in this thesis is a description of the research methodology, including an overview and rationale for use of a pragmatic paradigm as the philosophical assumption. This assumption employs a strategy of inquiry through concurrent mixed methods and the rationale for the use of phenomenological research methods for the qualitative component of the mixed methods research. The study also provides validation for the research by including information on a mini pilot study.

This thesis provides information on the phenomenon, which forms the basis of this study (description and purpose), the significance of critical reflection and its development within a long-term process ePortfolio activity, the role of the researcher, a statement of purpose and research questions along with limitations and delimitations (real and perceived). In Chapter 2, a brief review of the research and best practice literature relating to knowledge and the ePortfolio, and specifically, the role of the ePortfolio pertaining to Master of Education (M.Ed.) studies, as well as the contributions to distance education is discussed. Chapter 3 then provides procedures undertaken in summary and detail, along with forms of data necessary for the study, such as permission gained from the students (Letter of Invitation to Participate, Research questions, Reminder to Participate), and a brief discussion on ethics of the researcher. In Chapters 4 and 5, an

analysis of the quantitative and qualitative research results, discussion of the results, and significance of the research is provided followed by Chapter 6 and information on resulting implications, and further research recommendations.

Introduction of the Phenomenon

In this phenomenal study, the major premise is, that meaningful learning is gained through the creation of an ePortfolio that is submitted as evidence of knowledge gained by students in the Master of Education (M.Ed.) degree. Phenomenology is the study of a ‘phenomena’ or how we experience things and epistemology is known as the study of knowledge (Smith, 2013). The way and how our experiences appear help to form meaning from these experiences resulting in the formulation of knowledge. Smith (2013) notes “phenomenology itself claims to achieve knowledge about the nature of consciousness, a distinctive kind of first-person knowledge”. Knowledge attained is demonstrated through the selection and presentation of five digital artefacts and accompanying critical reflection components that are included in the ePortfolio and matching these to core competencies of the M.Ed. program. Other artefacts selected and presented may include feedback and/or interactions with peers, instructors, and other formal or informal personal or workplace experiences during the M.Ed. program culminating in an integrative capstone project. At the time of this study, the ePortfolio project was reviewed by one faculty member and later presented to all faculty and M.Ed. students (if they choose to attend), for discussion in a synchronous environment. Upon completion of the M.Ed. degree, the student may decide to share their ePortfolio with the broader community including peers, the academic and educational community, and/or use for personal, work, or professional purposes. The purpose of the M.Ed. capstone

ePortfolio is growth in student learning and to increase the student's ability to critically self-reflect, problem solve, and make informed decisions in the area of distance education. Alternatively, students may also decide not to share the capstone ePortfolio with the broader community. From the results of the research, students identified may decide to utilize the learning and knowledge gained only for personal reasons and that the knowledge they attain may be viewed as a form of accomplishment and completion of the capstone project. My research explores the ePortfolio and the student's perceptions of the ePortfolio.

This research study explored how students demonstrated their ability to resolve challenges and critically reflect on the processes, objectives, and goals involved in the creation of an ePortfolio within an online environment. Also studied was how M.Ed. students were able to effectively identify and translate their experiences into meaningful learning, reflect upon acquired knowledge, and how students used or perceived the utilization of that knowledge within their own environment.

Background to the Phenomenon

Prior to the commencement of this study, there were different routes identified for obtaining a Master of Education (M.Ed.) degree at this online university in western Canada. The first path is through the traditional thesis route consisting of completion of courses (core and optional), culminating in exploration of a question or problem and conducting research that addresses this question. The course-based route (second path) had been in existence for some time at this university and had evolved from courses and a composite exam or project, to (similar) courses plus the preparation of a capstone ePortfolio created over time. A faculty member reviews the ePortfolio and upon

completion, the student prepared an oral presentation of the ePortfolio and presented this defense to faculty members and M.Ed. students in attendance. For those individuals who choose the coursework (non thesis) stream, the ePortfolio becomes a compulsory component of the M.Ed. degree.

I determined from a review of literature that there are three types of ePortfolios, namely: process, showcase, or assessment portfolio. A showcase portfolio demonstrates accomplishments with a focus on achievements rather than those digital artefacts or assignments that may have been more challenging, were not graded favorably, or not viewed by the students as worthy of showcasing. An assessment portfolio is used to demonstrate learning gains. It often requires collaboration with peers or members of their communities and is often referred to as having greater authenticity of learning and knowledge attained. Assessment portfolios include reflections and discussion of the learning and competencies attained (Athabasca, 2014a). The process or capstone ePortfolio documents the students' growth over time, preferably from the beginning of the degree program, through self-evaluation, decision-making, reflection, and self-correction (Athabasca, 2014a). By utilizing the process ePortfolio from the beginning of the students' degree program, the ePortfolio serves to document long-term cognitive and skills development that form the foundation for lifelong learning. The process ePortfolio is mandated in this program and therefore the object of this study. Participants, in this study, were queried as to their understanding of the type of ePortfolio that was required to be developed for their M.Ed. Participants may have a perception of creating an ePortfolio that is different from that which is mandated by the university, or have a different

understanding of the meaning of process (capstone) ePortfolio. The meaning of ‘process’ and ‘capstone’ ePortfolio is interchangeable in this research study.

Through the ePortfolio process the students provide evidence of intellectual and professional growth achieved, through critical reflection on selected digital artefacts, resulting in a capstone activity. This activity is an integrative culmination of digital artefacts documenting students’ newly acquired proficiencies. Students are required to complete five core courses, six elective courses, oral presentation and discussion of the ePortfolio. Of the core courses, students must complete a technology course consisting of either Survey of Current Education Technology Applications (SCETA) or Technology in Education and Training. Acquisition and internalization of the competencies required for creating an ePortfolio are introduced in the online SCETA course, which provides hands-on experiences in various educational technologies including the ePortfolio. Students may or may not take this course (optional), but the course provides the opportunity to learn different technical platforms and take their first steps towards initiating their own e-portfolio. The university website describes the ePortfolio as a means to make “authentic learning visible” and is a useful tool for students, faculty, and professionals to use for the purpose of assessment, learning, reflection, and for promotion (Athabasca, 2014b).

Competencies of the M.Ed. In building the ePortfolio, M.Ed. students are required to address and provide evidence of six core competencies including (a) problem solving, analysis, and decision making; (b) instructional design, and development; (c) communication technologies and networking; (d) communication and interpersonal skills; (e) research; and (f) management, organization, and leadership (Athabasca University,

2014c). Each of the core competencies includes requirements to critically evaluate, analyze, review, discuss, compare, and construct coherent arguments (requiring a critical reflection component). Individuals can determine and assess their level of progress, training, and experiences (assessment), where authentic learning becomes visible, with evidence in the form of various digital artefacts.

Artefacts and reflection. The digital artefacts within the ePortfolio may often consist of collections of various assignments, blog posts, notations on conferences attended and subsequent reflections, and/or critical reflections on learning experiences that are external to formal course learning. Artefacts may also include incidents or events in the workplace, and other formal, informal, and non-formal instances. The ePortfolio can also be used as a tool for promotion and job applications in demonstrating the development of skills and communication of past experiences, information from which to carry out further research studies, or for entry into other programs. The ePortfolio can be used for research and proposals for grant-writing purposes, compilation of accomplishments, problem solving, conflict resolution, and goals. The reflection component consists of critical reflection on the processes, objectives, outcomes, and metacognitive learning related to the artefacts submitted.

Through the collection of materials, students consciously (and unconsciously) critically reflect on their various competencies (past and current) as well as future objectives and goals. “Building an e-portfolio provides a means to foster reflective practice and to document the unique ‘learning journey’ of students as they progress through the program” (Athabasca, 2017b). I perceive the ePortfolio to be a container of knowledge where students are able to demonstrate and share with the broader

community, if they so choose, their digital artefacts and accompanying critical reflections, as well as demonstrate how they have gained knowledge through these competencies. EPortfolios have been referred to as “containers for purposeful sections of artefacts” (Hartnell-Young & Vetere, 2005), or digital containers (Hartnell-Young, 2006, Abrami & Barrett, 2005 as cited in Cheng & Chau, 2013). I will explore and document the responses of the participants to various questions provided from the on-line survey as well as through the semi-structured interviews.

In the literature review (chapter 2), I explore the idea of knowledge: acquirable knowledge, knowledge gained through social interaction and the sharing of knowledge building, exploration, and inquiry. The notion of knowledge is also examined from a historical point of view through philosophical assumptions, educational theories and epistemologies. These ideas, theories, and philosophical assumptions, historically, have been explored, documented, and then shared with the worldwide community. I perceive that universities are the greatest holders of knowledge and concur with Borg & Davis (2012, p. 6), that universities are the transmitters and generators of new knowledge through their knowledge bank. Therefore I believe it is important to examine the broader community in which the ePortfolio will be shared. The broader community may consist of the students’ peers, current, or future employers, educational community, and the academic community. The community expands beyond academia and consists of any population that the creator of the ePortfolio chooses to share their efforts with.

Alternatively, students may pursue the ePortfolio route as a means to “cultivate within themselves both the culture and practice of lifelong and life-wide learning” (Hoven, 2015). Through the ePortfolio, students construct and reflect upon newfound knowledge,

allowing others to critically evaluate their work, which may result in additional insights or additional reflections on when learning or knowledge was gained. “The individual learner interprets and processes what is received through the senses to create knowledge” (Ally, 2010, p. 30) rather than receiving knowledge from someone else. Knowledge created through the ePortfolio may be shared within the broader community as others are allowed to scrutinize, question, accept or refute, the students’ knowledge. This aligns with the Mertonian norm of communalism regarding the sharing of information.

Description of the Phenomenon

Through pragmatic research methods, the phenomenon to be explored are the learning experiences and perceptions of knowledge attained by M.Ed. students via compilation and critical reflection on various digital artefacts resulting in the creation of an ePortfolio. During this process, students create and demonstrate knowledge development for the broader community via the ePortfolio. Each student constructs their own learning through the course route; knowledge gained is not imposed, but formed within each individual through their own motivation and activities necessary to obtain the requisite skills and tools that will be required to complete their M.Ed. degree. The university strongly recommends that the development of the process ePortfolio begin early in the students’ program to take advantage of the benefits of long-term cognitive and skill development (Athabasca, 2014b), yet students may not be aware of the alternative routes to obtain the M.Ed. degree (traditional thesis vs. course-based ePortfolio). Students may also not be aware of the Survey of Current Educational Technology Applications (SCETA) technology course, and the opportunities presented to learn various technology platforms (including an ePortfolio platform) to aid them in their

decision, or they may not have taken the prerequisites for the SCETA technology course (required for M.Ed. program students). As part of this research project, I examined at what point the M.Ed. students decided upon the ePortfolio as a means to obtain the M.Ed. degree, and the influences that assisted them in making their decision to complete the M.Ed. degree via the ePortfolio route. Determinations were also made through the research study, as to whether the course route (via the ePortfolio) provided a means whereby students felt they had obtained and developed the necessary cognitive, critically reflective skills, and knowledge that could be transferred and applied to their current work, future work prospects, and educational work and study environments. This study also explored whether students had received support and guidance from peers and instructors, and whether the students perceived their work would be/is welcomed within the broader community. Critical reflection, critical self-reflection, and an awareness of gained skills and knowledge were examined as to whether these elements may have contributed to the decision to pursue the ePortfolio.

Deciding on the ePortfolio route (the when?). Students make their decision to obtain their M.Ed. degree via the course-based ePortfolio route at various stages of completion of their M.Ed. degree. In a study of 52 students at a university in western Canada, students stated their reasons for undertaking the course-based ePortfolio route as being in the metacognitive realm, relating to reflection on and monitoring of learning (Hoven, 2015). The research focused on the reasons for doing an ePortfolio, not doing an ePortfolio, and the resources (facilitating factors) helpful in creating their ePortfolio rather than when the students decided to pursue the course-based ePortfolio route (Hoven, 2015). In another study at a large public research intensive university in the

southeast United States (Janosik & Frank, 2013), 10 Master students participated in a study which was designed to assess their experiences with an ePortfolio that had been recently introduced as a primary component of their comprehensive exam (Abstract). The researchers explored if the integration of an ePortfolio into the Master program enhances metacognitive thinking on the part of the students and sought “to determine whether the ePortfolio added value to the overall [Master] program evaluation and assessment plan from the students’ perspective” (Janosik & Frank, 2013, p. 15). In that Master’s program, it appears that the students were not given a choice as to whether they would choose a thesis vs ePortfolio route, therefore deciding on the ‘when’ to make their choice as to a program route was not applicable.

One of the focuses of this study was to determine when students in the M.Ed. program decided upon their route for completion of the Master program (e-portfolio or thesis route). These reasons included: (a) when they first entered into the degree program as a path already decided upon; (b) as a result of a trigger or influences from external sources (family, employers, friends); (c) from informal online discussions with their course peers or instructors as time goes on; or (d) from other reasons, to be explored. It is also unknown whether students were free from peer or industry (work connected) bias pertaining to choosing the route of ePortfolio vs thesis. At the beginning of this study, I proposed that many students took the Survey of Current Educational Technology Applications, (SCETA), course as a means to obtain the technical skills required to create the ePortfolio or to fulfill the technical course requirements of M.Ed. Other students may have had the technical skills and did not feel that taking the course to be a necessity. This research study explored if the majority of students, who took the SCETA course, went on

to complete the M.Ed. degree through the creation of an ePortfolio and its subsequent presentation and discussion.

From my own experiences through various M.Ed. courses I participated in, I was involved in casual conversations, and in numerous online course forums with my peers about the M.Ed. ePortfolio. I recall asking, “What is an ePortfolio and what is its purpose?” “Is the technology to build the ePortfolio available from the university satisfactory?” “Does the technology for the ePortfolio work satisfactorily or is it a cumbersome process?” “Are there suitable and knowledgeable instructors or staff support when problems or questions arise in the creation of the ePortfolio?” For myself, the concept of the creation and sharing of new knowledge through a thesis was intriguing and exciting. However, the ePortfolio was an uncertainty that raised questions and caused me anxiety. I was not aware of the ePortfolio option for completion until well into the M.Ed. program.

An attempt was made through research to capture the point at which the decision was made by students to pursue the M.Ed. via the ePortfolio. The decision to choose an ePortfolio rather than the thesis route may be due to elements unknown or unrealized by the students. After completing various core and optional courses in the thesis route, students may discover that they are unable to find a supervisor who is appropriate for their topic. Students may also not be able to refine their topic of study sufficiently to convince a faculty member to supervise them through the thesis process. Students may also change their decision (ePortfolio vs thesis route) based upon the perception of a lack of technical skills in the building of the ePortfolio, changes in their skillset after taking the SCETA technology course, discussions with family, work associates, peers,

instructors, or time factors (perception that the M.Ed. degree can be obtained quicker by pursuing the ePortfolio route). Other influences may be internal, where students may have perceived that the ePortfolio route invaded their privacy and they may be uncomfortable with their peers (academic or work-related) viewing their personal reflections. It was also unknown as to whether students changed their perceptions of privacy and confidentiality as they moved through various M.Ed. courses. Additional insights on these questions are provided through this research study.

Significance of critical reflection and the ePortfolio. During the creation of the ePortfolio, students must be aware of and understand the concepts of critical reflection including critical self-reflection, as this purposeful action is intrinsic to the M.Ed. ePortfolio. Reflection as a conscious action is often used as a means to assess our beliefs and values, and involves taking action as a result of this thoughtful process (Kolb, 1984, Schon, 1987, Gibbs, 1988, Boud & Garrick, 1999). Alternatively, reflection is involved in the attaining of knowledge through cognitive, social, and teaching presence, such as Garrison, Anderson, & Archer's (2000), Community of Inquiry (COI) framework. It is proposed by Anderson (2017) that the learner be included as a presence in the COI model for the student to be able to "ground their learning in direct experience" (p. 10). Anderson continues, "It is of utmost importance that students learn to critically explore and evaluate information they encounter and knowledge that they are constructing" (Anderson, 2018, p. 7). I concur with Anderson that knowledge can be gained in the online environment and add that reflective practices play a large role in this process. I would therefore propose that reflection is involved in conscious actions as well as unconscious (loosely used) or where the individual is unaware of their actions.

Critical reflection is reflection on our assumptions, concerned with the “whys” (the reasons), and implies an element of evaluation (critique) of those assumptions (beliefs and values). Awareness of our assumptions (presuppositions), results in our ability to challenge our beliefs, actions, communications, or our expectations that help form our meaning perspectives (if we so choose). Each person has their own means for learning, which is affected and constructed from their experiences, interaction with others, their perceptions of their world, and their environment. Mezirow contends that, “critical reflection involves a critique of the presuppositions (assumptions) on which our beliefs have been built” (Mezirow, 1990, p. 1), and is “generally used as a synonym for higher-order mental processes (worldview)” (ibid p. 5). I would propose that critical reflection or critical self-reflection may be incorporated in the experience - but not every experience requires an individual to dig deep into the meaning of the experience. Through the confrontation of situations or problems some students may critically reflect on the situation at hand and learn to deal with the problem, one way or another, to provide deeper meaning to the experience. In essence, the ePortfolio is a form of experiential learning which may involve some form of change or transformation, whether positive or negative, involving behavior, attitude, aptitude, perception, understanding, or skill level.

From the creation and subsequent reflection, individuals construct their own learning; knowledge gained is not imposed. Mezirow proposes that “the most significant learning experiences in adulthood involves critical self-reflection---reassessing the way we have posed problems and reassessing our own orientation to perceiving, knowing, believing, feeling, and acting” (1990, p. 13). Brookfield expands on critical reflection as

being those “assumptions, beliefs, and values obtained or assimilated during childhood and adolescence which then become the norms for the context of adult life . . . and the realities of adulthood” (2000, p. 94). Critical reflection, (and I would propose critical self-reflection), comprises action, reflection on action, further action, reflection on the further action, and so on in a continuous, iterative loop. For example, students working through the action-reflection-action loop may ask themselves, “Why should I include this artefact in my ePortfolio?”, “What piece of knowledge did I attain through this?”, “Does my reflection on the artefact accurately express what I achieved?”

Time may be required to absorb, critically self-reflect, analyze, and make meaning out of the information based on the individual’s past, current experiences, or beliefs. Bransford proposes that “transfer of concepts learned does not occur immediately or automatically and often reflection, support, and feedback are required to aid the individual in applying knowledge gained in new environments” (2000, p. 203).

Incorporating similar reasoning, I explored whether students during the building of their ePortfolio had the opportunity to think dialectically (logically), to employ practical logic, were able to employ metacognition (knowing what we know), and ‘how we know what we know’.

The students must subjectively value critical reflection on various artefacts chosen within the ePortfolio as part of the competencies for the M.Ed. Through the process of the action-reflection-action loop of critical reflection, I perceive that the artefacts chosen for the ePortfolio must have an impact on the student that involves a perceived increase in skills or a change of self to be included in the ePortfolio; the results of the online survey and semi-structured interviews will confirm or disapprove my perceptions.

Simonson, Smaldino, Albright, & Zvacek, propose that “self-reflection leading to the development of standards and the determination of criteria to use in selecting these materials are integral components of this process [the portfolio]” (2012, p. 276). Through the research, I explored whether students were willing to be open and without bias share their values, beliefs, thoughts, could examine whether an artefact was relevant, and if students were able to discern what was their ‘best work’ or which work provided for the greatest learning through critical reflection. Through this study, I attempted to assess to what extent, students were able to remove personal bias, determine whether their environment and prior experiences impeded their ability to critically reflect, and determine whether the students wanted to share their knowledge placed within the ePortfolio with the broader community. Brookfield comments that “although writers frequently allude to the importance of understanding critical reflection as an emotive as well as cognitive process, there are few grounded depictions of how adults feel their way through the process that so many adult educators have prescribed for them. The personal voice and subjective experience of the student is often curiously absent” (2000, p. 96). In other words, there may be an assumption on behalf of the educators (instructors) that students have the ‘know-how’ and emotional maturity to be able to effectively and skillfully evaluate their artefacts. I attempted to determine whether students felt or believed they were able to effectively communicate their evaluations through critical reflection, or whether reflections within the ePortfolio were focused on what the instructor wanted to hear.

Through this research, the component of critical reflection of the ePortfolio was examined including how the individual incorporated reflective judgment, analysis and the

synthesis of artefacts. Also included are methods of inquiry through discriminating tested beliefs, reasoning, subsequent conclusions based on grounded evidence, and whether dilemmas occurred in the reflection process and how they were resolved. Dewey notes that, “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends, constitutes reflective thought” (1933, p. 6). Epistemic perspectives (involving knowledge and how this knowledge is used) of awareness, reflectivity, and cognitive learning, to create knowledge were examined.

Role of the Investigator

As the researcher of this phenomenology study, I have a personal interest in the phenomenon as I chose the thesis (vs. ePortfolio) route for obtaining the Master in Education degree. I perceived that the rigors of a thesis were viewed as being accepted by the academic and business community, as well as within my own circle of family and friends. As a mature student, I grew up with the belief that the only means to obtain a Master or PhD degree was through hard work and the creation of a thesis: there were no other options. When I entered the M.Ed. program, I was not aware of the ePortfolio as a route to obtain the Master degree.

No one within my own family had obtained a university degree or post secondary education from any discipline. Recognition of my prior experiences by the Faculty of Graduate Studies at the university I attend, confirmed my working and professional knowledge as having value and created opportunities for my future. Within my own lifeworld, my parents viewed education as a key to success in the working world. I suggest lifeworld to comprise all conscious occurrences that help to form our person

(individuality) based on our perceived or realized experiences where through various forms of communications, we choose to share our experiences. Lifeworld is defined by Habermas as "a horizon of experiences, changed, and reproduced through collective communication" while Sandberg & Andersson propose, "lifeworld is the unquestionable background of experiences which are always there when we communicate" (2011, p. 770). I entered the M.Ed. program with an expectation to obtain the Master degree via the thesis route; the ePortfolio was never a consideration. I perceived the thesis as an academic document where knowledge was shared, challenged, questioned, and examined: an accomplishment, and a personal goal to be proud of.

The thesis route also appealed to my accounting sensibilities. As a Certified Public Accountant, Certified Management Accountant, (CPA, CMA), I am trained to set aside emotions and biases in my work. Facts, processes, and end results are guided through the rigors of Accounting Standards for Private Enterprises (ASPE) formerly known as Generally Accepted Accounting Principles (GAAP). Shades of grey within my world of accounting are limited and the continual improving or processes relating to staffing, systems, financial, and management is a constant activity. However, there is a creative aspect to my own person where I recognize improvement of processes may be limited by resources (financial, people, technology), and that shades of grey do exist, creating challenges (for myself) to resolve anomalies that will be acceptable within the accounting and/or business world. Moustakas (1994), is noted by Creswell as focusing on Husserl's concepts of *epoche* (or bracketing) in which "investigators set aside their experiences as much as possible, to take a fresh perspective towards the phenomenon

under investigation” (2007, p. 59). Every effort has been made to bracket out and set aside my own personal biases as such is the transcendental approach of phenomenology.

Statement of Purpose and Research Question

Prior to the literature review and description of the research methodology, an overview of the thesis, central research question and significance of the study, guiding research questions, and limitations and delimitations of the research will be discussed. A specific section for definition of terms has not been provided; alternatively, terms are defined within the thesis. A Glossary has been provided for acronyms, (refer to the Table of Contents).

Purpose of the study. The research undertaken sought to determine the point (the ‘when’) at which a decision was made by students (current and graduated M.Ed. students) to pursue the Master of Education degree and to explore influences that may have impacted the M.Ed. students in their decision. Through the decision process to pursue the course-route ePortfolio, insights and challenges of the students in the creation, preparation, and submission of an ePortfolio were explored and the perceptions of students as to whether the ePortfolio would be accepted by the broader community.

Following and identifying the thought processes for commitment by individuals in different stages of course study is logical and contributes to the pragmatic (practical) paradigm (idea). As a graduate student, I have experienced the M.Ed. journey and followed the recommended order of core courses, and then chose optional courses required for the M.Ed. degree based on topics of interest that would build a foundation of knowledge, and enhance my graduate experience and knowledge base. Other students may have chosen to pursue topics of interest, rather than follow core recommendations as

proposed by the Centre for Distance Education, or they may have chosen courses based on availability, or the Professor teaching the course. “A logic that is practical is a logic that springs from a deep understanding of the context of the situation . . . it is a logic that does not follow formal rules of deductive reasoning, but that is experiential and inferential” (Brookfield, 2000, p. 92). I viewed the order of courses that I took as being logical and followed my own nature of putting various processes in order as I would within my accounting and business world.

Capturing the comments and common themes to the motivations for pursuing the ePortfolio as well as reflections from students at varying stages of completion of the ePortfolio, allowed for additional insights into the critical reflection process in creating the ePortfolio. The research information gathered may provide other Universities, who offer capstone (process) ePortfolios as a means to obtaining a Master degree, the ability to improve information and support to the students and eliminate real or perceived challenges or frustrations during the ePortfolio journey.

Significance of the study. The significance of this study is to identify whether changes should be made in ‘how and when’ information is communicated to all M.Ed. students by the Centre for Distance Education at a western Canadian university. This concerns information about the course-based ePortfolio, and whether these changes might proactively address challenges experienced by current, and future M.Ed. students to make the capstone project a meaningful and knowledge creating activity for students.

Central research question. The central research question addresses what are some of the factors that characterize student perceptions of the ePortfolio process as a capstone project in an online environment. There are four sub-questions to this. The first

question asks, at what point in the M.Ed. program, was a decision made to pursue the ePortfolio. The second question asks what are/were the influencing factors in their decision-making process. The third research question extends to include the same processes (reflective thought and critical reflection), to explore to what extent students perceived that knowledge was attained through the creation of the ePortfolio (current stage or completed), and the fourth question, is to what extent students perceived that the ePortfolio would be accepted by and useful to the broader community. Through the examining and re-examining of experiences, emotions, beliefs, and thoughts, students may choose to pursue the ePortfolio based on *“active, persistent, and careful considerations based on any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends, constitut[ing] reflective thought”* (Dewey, 1933, p. 6). A decision made may be through persistent and careful reflections, or a spontaneous action with little or no thought invested. Pursuant to the decision to undertake the ePortfolio, the element of critical reflection, insights and challenges (real or perceived) by the students, attainment of knowledge, and acceptance by the broader community are incorporated into the creation of the ePortfolio by question (making the decision and associated influences) was not found.

Limitations and delimitations to the research. Limitations are those elements that cannot be controlled by me, acting as the researcher, such as the participants to the online survey, the semi-structured interview via Skype™, challenges of the independent study model, and lack of responses by the participants. Another limitation, that I have to consider, is whether the participants are able to find the time to provide reflective responses to the online survey or whether participants are being open in their written

replies. Delimitations are those elements that I can control, including the researcher-specified parameters (determining the population of students who have, or have not completed the M.Ed. degree via the ePortfolio), research methodology (quantitative, qualitative, or mixed methods), development and analysis of the online survey, and analysis of the semi-structured interview. Other delimitations include poorly written or ambiguous questions, assessing and determining the reliability and validity of the questionnaire, and triangulation on the construction of the questionnaire, all of which are under my control and are integral parts of the design. These (limitations and delimitations) will be discussed in further detail in Chapter 3.

Summary

In the following chapters, I discuss the literature relevant to the study (Chapter 2) and potential contributions to distance education as a result of this study. This will be followed by a discussion of the Research Methodology (Chapter 3) including an overview of this research study, support for utilizing a pragmatic approach to this study, a discussion on phenomenology and this study, and mixed methods research (participants, considerations, and challenges). The pilot study, that was previously undertaken, is provided in Chapter 3, p. 85 in support for this research, and includes proposed procedures for the thesis study (recruiting, collection of data, and analysis), limitations and delimitations to the research, and ethics of the researcher. Chapters 4 and 5 provide the results and discussion of the research including information on obtaining participants for the study, the thesis vs ePortfolio decision, importance of the SCETA course for the research, quantitative and qualitative analysis, and discussion of the online survey as well as the semi-structured interview results. Significant findings, implications and

suggestions for future research are discussed in Chapter 6. Following the various chapters, supportive documents are provided including: references to this paper, as well as various Appendices containing research questions, the letter of invitation, reminder to participate, questions and scripts for the semi-structured interview, analysis tables, and the coded transcript (available upon request).

Numerous Graphs, Tables, and Appendices support the results provided with the view that visual presentation of information through graphs and tables provide the reader with a means to quickly review tedious statistics. The commentaries from the research participants through the online survey results and semi-structured interviews, are enlightening, honest, informative, and provide validation, resulting implications, and identify the need for future research.

Chapter 2 - Review of the Literature

I propose here that an understanding of current literature may be helpful and will provide guidance through the phenomenology study, which incorporates a concurrent mixed methods research approach. The ePortfolio (course route) is a means for obtaining a Master of Education degree (M.Ed.) at a western Canadian university. Therefore, a review of learning/acquirable knowledge, in the context of graduate studies and how it relates to the ePortfolio within an online environment, what constitutes an ePortfolio, as well as the role of critical reflection to the ePortfolio, will be discussed.

We Begin with Knowledge

Through history, “the university was to become a factory for the creation of new knowledge” (Borg & Davis, 2012, p. 6) . . . “with the dissertation as a contribution to knowledge – to a body of knowledge shared with a potentially worldwide community” (p. 13). Today, through a university in western Canada, the M.Ed. student has the option of adding to new knowledge through the creation and critical reflection on digital artefacts contained within a process ePortfolio. The ePortfolio “is a reflective tool used for supporting lifelong learning strategies and knowledge creation through studies in the M.Ed. program, in the students’ work experiences, and after completion of formal studies” (Athabasca, 2014a). Through the process of the ePortfolio, deeper learning by reflecting on one’s own learning may be attained, that can be used for personal growth and education.

The subject of ‘knowledge’ could take years or even a lifetime to study including the examination of knowledge from a historical point of view, knowledge through

philosophical assumptions pertaining to specific disciplines or subjects, and knowledge associated with educational theories or epistemologies (constructivism, Vygotsky's sociocultural theory, Piaget's theory of cognitive development, connectivism, Bruner's cognitive growth). There is innate knowledge, observational knowledge, knowing by thinking, knowledge through understanding, a skill, an awareness, a cognition; each item, theory, epistemology, or philosophy being associated with knowledge and involving in-depth study which takes time, including years, to study.

Knowledge means different things when viewed from different perspectives and may be referred to as a process, resource, or both (Assundani, 2005, p. 31). Dewey & Bentley regard the word 'knowledge' as a loose name, a 'vague' word and "only through prolonged factual inquiry can the word 'knowledge' be given determinable status" (1960, p. 113), preferring instead to validate the terms of 'knowings' (identified as behaviors) (p. 122), and 'knowns' (knowledge). Knowledge can be referred to as a form of capital, input resource or output resource (new knowledge as intellectual capital or innovations) (Assundani, 2005, p. 31). Assundani proposes that, "the pragmatist perspective suggests a concern not with 'knowledge' itself (seen as abstract and static), but with the activity of knowing, (which is understood as concrete and dynamic)" (2005, p. 32-33).

Acquirable Knowledge

Acquirable knowledge refers to that understanding, skills, or cognition, which is obtained through the completion of various courses in the M.Ed. degree, where information is learned, and critically reflected upon by students through the journey of the ePortfolio. Self-knowledge includes an awareness and understanding of one's own capabilities, attributes, or abilities, which is incorporated into the cognitive processes as a

means to acquire new knowledge. Gertler (2015 p. 1) notes that, “in philosophy, ‘self-knowledge’ standardly refers to knowledge of one’s own sensations, thoughts, beliefs, and other mental states”, and also includes self-awareness, self-understanding, and self-attribution. Self-knowledge is defined as, “knowledge or understanding of one’s own capabilities, character, feelings, or motivations” (Merriam-Webster, 1993). I propose that self-knowledge and metacognition (knowing what we know) are utilized along with our experiences, and incorporated into the ePortfolio by students as they work through the process in attaining new knowledge.

Knowledge through social interaction. There is valuable support and information for the topic of ‘knowledge’, the meaning of knowledge, knowledge building, and the creating and producing of knowledge. Knowledge includes knowing (Dewey’s concept of knowing and knows, 1960), the idea of knowledge proposed by Dewey as a “scheme of logical relationships among existences held up as an ideal of inquiry” (1958, p. 126) and Vygotsky’s (1962) assertion that “all higher mental functions originated in the social environment” (as cited in Schunk, 2012, p. 243). Vygotsky emphasized the importance of the socio-cultural context in which learning takes place and how the context has an impact on what is learned, whereas I suggest knowledge or knowings are also obtained and integrated by the students into their existing knowledge base. In essence, Vygotsky views the learning community as essential to the learning of individuals where the written word becomes the voice of the students used for communication. For example, in this study, the M.Ed. courses employ an online asynchronous environment, which facilitates peer-to-peer or peer-to-instructor interaction. This environment forms the learning community. Anderson & Dron note

that, “social interaction is a defining feature of constructivist pedagogies” (2011, p. 86). Through the creation of communication (an online posting), students employ their cognitive (knowing) and metacognitive (knowing what you know) mental processes, where “knowledge is both created and integrated with existing knowledge” (Anderson, & Dron, 2011, p. 85). Students study a topic, research it, employ critical analysis (what it means to them), reflection, and then communicate the newfound knowledge or learning to their peers or instructor. Alternatively, students can retain the information for themselves, which becomes a part of their own self-knowledge for their own personal use. Reflective action can vary in its purpose, depending on whether the student’s purpose is to solve a problem, understand others, or understand themselves, (Mezirow, 1991, p. 15). Through the process of study, research, analysis, reflection, and communication, deep and meaningful learning is attained where new materials and/or concepts are internalized through critical reflection. Deep learning is characterized by Rourke and Kanuka as, “the critical examination of new facts and the effort to make numerous connections with existing knowledge” (2009, p. 24). When working through the ePortfolio, students may recall, reflect on, or refer to materials where knowledge has been acquired through various assignments, communications within the learning community, and subsequent reflection on what has been learned.

Active learning. I propose that learners learn actively and construct new knowledge based on their prior knowledge (Ally, 2010, p. 30, Anderson, 2008, p. 84, Dewey, 1960, p. 12, p. 41), and where constructivism is, as noted by Fitzpatrick, Hayes, & O’Rourke, “a means to foster active learning and to encourage the organic creation of knowledge” (2009, p. 23). Garrison, Anderson, & Archer’s, (2000), Community of

Inquiry (CoI) framework is a constructivist formulation for attainment of knowledge through cognitive, social, and teaching presences. Garrison, Anderson, & Archer, asserted that “reflection was the heart of the thinking process but was framed by a perplexing and confused situation initially and a unified or resolved situation at the close” (2000, p. 91). The situation referred to, may be a dilemma or problem requiring a method of inquiry involving reflection and is often based upon experiences. The reflective phase of the CoI framework is based on practice, (before and after action) and is “the idea that community, critical reflection, and knowledge construction are integral to learning, especially learning online” (Swan, Garrison, & Richardson, 2009, p. 54). This aligns with what I know of the ePortfolio and of the efforts of its creator, the student. Through interaction with peers and instructors, (defined as the learning community), and through completion of various courses in the M.Ed. degree, students self-reflect and critically reflect on chosen artefacts that have been incorporated into their ePortfolio.

Sharing of Knowledge, Building, Exploration, and Inquiry

Literature relating to sharing of knowledge with the broader community includes Smith, who comments that, “in the 18th and 19th century epistemology, then, phenomena are the starting points in building knowledge, especially science” and that phenomena in today’s world, are “whatever we observe (perceive) and seek to explain” (Winter 2016, Chapter 3: From Phenomena to Phenomenology section, para. 6). I would expand on Smith’s comments that, as a result of these observations and explanations, the attainment of personal knowings or knowledge are eventually shared directly or indirectly by individuals within their own lifeworld. The third and fourth central research questions address this comment to determine if students perceive knowledge has been attained

through the creation of the ePortfolio and whether they perceive there will be acceptance of the ePortfolio by the broader community.

Individuals may mentally, vocally, quietly, or inadvertently choose the point at which to share their decision to pursue the ePortfolio. This mental process includes a multitude of cognitive and subjective thoughts including reflective thought, perceptions, assumptions, and/or influences that may result in sharing their decision to pursue the ePortfolio with peers, instructors, friends, or co-workers. The first and second research questions address the point at which students decide to pursue the course-route program to obtain their M.Ed. as well as the influences on this choice. The decision to pursue the ePortfolio may inadvertently influence others (peers) to think about whether to pursue the ePortfolio or not. Whether personal knowledge is used to make a simple decision (such as the ‘when’ in the Master program a decision was made) or this same knowledge base is used to write a convincing and scholarly thesis for a Master in M.Ed., the point is moot; knowledge is shared.

I suggest that knowledge, according to the norms of the scientific community, should be shared, challenged, questioned, and examined. From my review of diverse literature as noted below, there is evidence for the value of knowledge attained by one individual and eventually shared with a potentially worldwide community. Evidence exists, such as through the sharing of knowledge in the Life Science industry, that there are now improved levels of healthcare delivery in public and private institutions as a result of the advancements and the sharing of knowledge with the wider community (Noble, 2002). In a Statement to the House of Commons Standing Committee on Finance by the Social Science and Humanities Research Council, (SSHRC) relating to Canada’s

future, the SSHRC notes, that “we invest in people by supporting the partnerships, interactions, and knowledge sharing between researchers and other sectors of society that bring the benefits of knowledge to society” (2006, p. 2) and that “knowledge has become our most precious currency” (p. 3). Buckley (2012) proposes that universities are the transmitters as well as generators of new knowledge, resulting in a way of increasing their knowledge bank through knowledge sharing (Abstract). The sharing of knowledge is not relegated to that which is only created within the ePortfolio, but rather I propose that the sharing of knowledge occurs daily in all sectors of our country for the benefit of its citizens.

Knowledge building. In relation to the context above, even though knowledge sharing may imply a form of knowledge building, whereby additional knowledge is gained and constructed as a result of shared knowledge between individuals or groups of individuals, there are characteristics of knowledge building that do not conform to constructivist learning. Two of these characteristics considered by Scardamalia & Bereiter, (2010) are ‘intentionality’ where “most of learning is unconscious, and a constructivist view does not alter this fact”, and ‘community knowledge’, where “learning is a personal matter, but knowledge building is done for the benefit of the community” (p. 2). Learning is also considered an objective with the aim of knowledge building as producing knowledge that will be valuable to others (p. 10). The value of gained knowledge incorporated into knowledge building encourages advancement and improvement of ideas, creativity, and suggests a collective responsibility for the sharing of new knowledge. As the aim of knowledge building is to produce knowledge, Hartnell-Young concurred and noted that, “knowledge building is activity directed towards the

creation of knowledge while learning is a personal consequence of the process” (2006, p. 125). Scardamalia & Bereiter added that, “producing knowledge new to the world is an achievement not a process” (1999, p. 277). In the process of students producing knowledge that is authentic, [through their ePortfolio], there is uncertainty as to whether students are working to solve problems that may resolve in new knowledge, or if they are trying to make sense of the information at hand. (p. 278). This knowledge is often obtained from reference books, peer-reviewed articles, and other secondary sources such as online research, through various library, or educational sources. The knowledge may also be constructed from experiences within their own environment or from observing the environment and relationships of their peers, family, and friends. The culmination of reflections, artefacts, and communications within the ePortfolio provides for a store of knowledge that may be distributed to the broader community or the world. Scardamalia & Bereiter propose that “what makes work ‘scientific’ is a matter of continuing controversy . . . and science is a form of social practice that continues with wide variations” (1999, p. 277).

Exploring knowledge pragmatically. The epistemology (understanding) and strategy of inquiry into the phenomenon in this research study draws upon a pragmatic paradigm accomplished through concurrent mixed methods research. I proposed incorporating a pragmatic paradigm in this research study with the idea of exploring students’ perceptions of where and how they created knowledge within their portfolio. The search occurred through the collection of numerous variants and utilized whatever research methods were required to gain insights into knowledge gained. This knowledge is subsequently dispersed into the broader community if the students are open to sharing

their knowledge. As Cherryholmes has suggested, “Research in a pragmatic tradition, [however], seeks to clarify meanings and looks to consequences” (Cherryholmes, 1992, p. 13). Cherryholmes’ concept of pragmatism places preference on “values and visions of human action”, rather than searching for explanations through descriptions and theories, and allows the researcher to explore where “we want to go in the broadest of senses” (p. 13). A discussion relating to the research methodology including rationale for use of pragmatism as a philosophical worldview, and the strategy of inquiry incorporating phenomenology research and concurrent mixed methods research is discussed in Chapter 3 – Research Methodology.

Knowledge – a simplistic kind of inquiry? Knowledge building is often viewed as a “term to flourish a constructivist view for the term ‘learning’”. But when knowledge building is referred to in a business context, the term refers to knowledge creation and additions to an organization’s ‘knowledge capital’” (Scardamalia & Bereiter, 2010, p. 2) involving the “examining, sniffing, or otherwise gathering information on anything novel that appears in the environment”. This description by Scardamalia & Bereiter portrays the attainment of knowledge as a simplistic kind of inquiry, as well as a practical description for identifying how individuals gain knowledge. I propose that the means for attaining of knowledge varies between individuals and may be based on a desire to learn more, a composite of motivations, (internal and external), perceptions, or prior experiences. I also suggest that the gaining of knowledge involves gathering of new information and expanding on prior knowledge in the individual’s environment. Scardamalia & Bereiter’s description of knowledge as ‘a simplistic kind of inquiry’ does not, in my perception, portray a simple-mindedness, or naivety on the part of the

researcher, but rather implies a need for the researcher to be open to what is being explored. For example – the sight of a clump of daffodils in spring may invite a researcher to discover how this plant manages to store enough energy through the harshest of winters, to ‘naturalize’ within its harsh environment, and to appear the following spring. In spite of the challenges, this perennial survives the environment in which it grows. A question of “how does the daffodil survive its environment?” may appear to imply a simple type of inquiry, but the researcher, upon examination and consciously or unconsciously taking a pragmatic approach, evaluates numerous variants that may explain how the daffodil survives. Variants may include soil conditions, placement in the earth (depth of planting the bulb), protection (trees or bushes), access to sunshine and rain, if the species planted tends to be hardy (or not), examination of the survival of other daffodils in similar locations, as well as many other questions. The researcher, with an open mind studies the environment of the daffodil, continually questioning and looking for explanations, before undertaking in-depth research to compare his/her findings on the daffodil with knowledge in the broader scientific community. This scenario is not unlike the researcher who takes a pragmatic approach to determine whether students, through reflective thought, values real or perceived, assumptions, and/or influences, incorporate into their thought processes and resulting actions, their decision to choose the course-route via the ePortfolio as a means to obtain their M.Ed. Information is gathered on the research participants, open-ended questions are asked through an online survey, semi-structured interviews are undertaken for clarification or for further information, responses are analyzed and participants revisited (if needed). From my experience, I realized that the ability for the researcher to gain

knowledge pragmatically is not a simple kind of inquiry, but requires skillfulness obtained through experience and curiosity in an attempt to gather as much information to fairly and accurately represent how students obtain knowledge.

Reliability and Validity Associated with the Process ePortfolio

Curiosity by the individual is deemed not sufficient to motivate sustained inquiry; also needed is help from peers in building a ‘knowledge building culture’ involving a supportive environment from instructors, peers, and the community who are devoted to ideas and improvements of the culture (Scardamalia & Bereiter, 2010). This concept ties to the means of attaining a M.Ed. via an ePortfolio as being accepted by the community and the information being reliable and valid. The students’ perception of the reliability of the ePortfolio as a representation of knowledge gained, involves the information being trustworthy, consistent, accurate, and honest. In the literature, validity of an ePortfolio refers to the accuracy of the information and reflections presented, which may be difficult to measure for accuracy but can be evidenced as suggested by Driessen, Overeem, van Tratwijk, van der Vleuten, and Muijtjens, by, “authentic evidential materials collected by learners in day-to-day practice, [and I propose subsequent critical reflection writings], over a prolonged period of time” (2006, p. 862). In this research, validity is assessed by the presentation in which learners further validate their reflections and acquisition of the competencies by presenting to, and answering questions posed by at least one faculty member, in the presence of their peers. Validity may also be assessed through discussion between themselves (students) and the faculty member about the various competencies assigned to the ePortfolio tool as well as how students perceive acceptance of the ePortfolio by the broader community. For the M.Ed. students in this study, these

competencies would include problem solving, analysis and decision-making competencies, instructional design and development, communication technologies and networking, communication and interpersonal skills, research effectiveness, and management, organization and leadership competencies (Athabasca University, 2014c).

Determinants of Knowledge

In an attempt to further understand the nature of knowledge, how knowledge originates and through what methods knowledge is obtained, I will now explore the epistemology of this. Rationalism and empiricism are two positions relating to the origin of knowledge (Schunk, 2012, p. 5). Rationalism, supported by Plato, (427?-347? BC), the writings of Descartes, (1596-1650), and Kant, (1781), relates to reason and how acquired knowledge is recalled through reflection. In contrast, empiricism supported by Aristotle (384-322 B.C.), Berkeley (1685-1753), Hume (1711-1776), Locke (1632-1704), and Mill (1806-1873), relates to the idea that knowledge is attained from experience, through recall (Schunk, 2012, p. 6). Each term (empiricism and rationalism) appears to be similar, yet very different. Both terms agree that knowledge is attained through experiences, but one is from reflection, while the other is from recall or memory. Understanding whether this knowledge is recalled from memory or as a result of reflection is beyond the scope of this research, but I submit that there must be some form of mental action taken by the individual to bring forth prior knowledge. The lack of resolution between recall and reflection leads me to explore several of the determinants of knowledge building consisting of epistemic agency, community knowledge and collective responsibility. Epistemic agency is “working through that relationship between internal and external ideas to some resolution” (Scardamalia, 2000, p. 3).

Internal ideas are considered to be personal opinions or vague feelings, while external ideas refer to what others say (Scardamalia, 2000, p. 3). Individuals attempt to “negotiate a fit between personal ideas and ideas of others” (Scardamalia, 2002, p. 10). As an example, students construct their own knowledge by combining what they know and have gained from their own personal experiences and efforts, as well as through the guidance and feedback from instructors or peers. Scardamalia’s (2002), building principle of community knowledge and collective responsibility draws upon producing knowledge of value to others and shar[ing] responsibility “for the overall advancement of knowledge in the community” (p. 10). These knowledge-building principles are similar to the concepts of Dewey and Vygotsky’s relating to the importance of community in the gaining of and sharing of knowledge.

Through this mixed methods research, the element of critical reflection and the ePortfolio is explored based on the central research questions. The central research question addresses what are some of the factors that characterize student perceptions of the ePortfolio process as a capstone project in an online environment. I suggested critical reflection was incorporated in the students’ initial decision to create an ePortfolio (first question), analyze and assess various influences associated with this decision (second question), and investigated whether through critical reflection, students perceived knowledge was attained through the creation of the ePortfolio (third question). This research study explored if students perceived their knowledge would be disseminated; knowledge gained, through the ePortfolio, would be accepted by the broader community (fourth question); and/or viewed by students as a tool that would help accomplish personal growth. If it was determined that knowledge was not attained, this study

explored the challenges that prevented knowledge from occurring in relation to critical reflection and the ePortfolio.

The ePortfolio

M.Ed. students use the ePortfolio as a tool to select, collect, and reflect on chosen digital artefacts over time, as a means of obtaining a Master in Education (M.Ed.) degree. Within the ePortfolio are collections of artefacts consisting of articles, pictures, personal reflections, graphics, journals, and projects, providing evidence of growth, progress, accomplishments, and knowledge. The ePortfolio may also include other significant personal elements such as volunteer work, awards, self-promotion, and additional coursework or seminars as they relate to work or professional development. The ePortfolio may be used by academia for professional development purposes, by businesses as evidence of employability skills for future employees, or by the individual, for their own personal growth. The following sections discuss the various types of ePortfolios, terminology, and its use; and the reflective component of the ePortfolio.

Types of ePortfolio. There are various forms of the ePortfolio including a process, showcase, or assessment portfolio, each providing a different function for the end user. The *showcase* portfolio demonstrates what has been accomplished, the *assessment* portfolio allows for external evaluation or judgment and the *process* portfolio “documents the students’ growth and progress through evidence of self-evaluation, decision-making, reflection, and self-correction” (Athabasca University, 2014a). Gallagher and Poklop add the reflective and project portfolio to the types of ePortfolios. The *reflective* portfolio is seen as having, “distinctly self-evaluative purposes”, while the *project* portfolio, “becomes the platform for the writing project” (a type of web site)

(2014, p. 12). The ePortfolio has also been referred to as an ‘Integrative Knowledge Portfolio Process’ with a goal “to aid students to connect theory and principles of a course with the role expectations, values, and professional skills” related to training in a specific position (Peet, Lonn, Gurin, Boyer, Matney, Marra, Himbeault Taylor, & Daley, 2011, p. 11). The ePortfolio has also been referred to as an efolio, digital portfolio, e-portfolio (Pitts & Ruggirello, (2012, p. 49), credential portfolio which is “organized around specific licensure standards” (Snyder, Lippincott & Bower, 1998, p. 46), and learning/process portfolio where “self-knowledge becomes an outcome of learning” (Barrett, 2005, p. 5). The M.Ed. program at the western Canadian university in this study utilizes the *process* ePortfolio incorporating elements of the assessment portfolio, consisting of artefacts, reflections, and defense (discussion) of the ePortfolio. In essence, the process portfolio, gathered over the life of the M.Ed. program, culminates in a capstone activity as a final assessment of Master work by students. The *capstone* ePortfolio is often referred to as a capstone activity.

Why use the ePortfolio? The use of the portfolio according to Belanoff and Elbow (1991) began its use primarily in colleges as an assessment tool in the 1980’s as a means to theme traditional forms of assessment such as comprehensive written exams (as cited in Barrett, 2005, p. 2). The portfolio has morphed into varying terminologies and types (that is process, capstone, assessment, reflective) based on the assessment criteria required by the educational institution for their students. Today, whatever the form of the portfolio (paper or electronic), the portfolio retains its use as a tool to capture diverse evidence of growth, skill, and/or knowledge by the creator. In the process of this review of the literature, it was often difficult to ascertain the type of ePortfolio utilized by

various academic institutions, as well as consistency in terminology, even though the description of research purpose was similar: to explore the efficacy of the ePortfolio by the students.

The ePortfolio tool is utilized by various institutions as a means to submit an assignment from within a course, is considered a process portfolio activity gathering artefacts over time, or as in the university in this study, is a capstone process activity garnered over time as a means to gain a Master degree. Some educational post-secondary institutions also use the portfolio in hard copy, while others utilized the online format using various technologies. It was difficult to ascertain from various universities (without registering for a course) whether students were required to undertake a final comprehensive exam, course work only, prepare a thesis, or create an ePortfolio for their final culminating Master's activity. The results of this study may provide guidance, to other universities incorporating the use of an ePortfolio, as to when and how to communicate more complete information to potential students about the role of the student in the ePortfolio process.

There is evidence from peer-reviewed research (Bolliger & Shepherd, 2010 p. 311; Clark, Byker, Niewolny, Helms, 2013, p. 64; McCowan, Harper, & Hauville, 2005, p. 42) as to the success of the ePortfolio as a process, showcase, assessment, or reflective tool in post secondary institutions utilizing a critical reflection component. With one exception, research specific to universities that utilize the process ePortfolio, as a final capstone activity, for a Master in Education (or similar type degree), was not found. Consequently, research and statistics as they relate to the ePortfolio discussed below, may

include varying types of ePortfolios (definitions and terminologies) and include students in continuing education or graduate studies in varying faculties.

The Reflective Component of the ePortfolio

The use of self-reflective ePortfolios as a means of providing evidence of the students' learning outcomes has become increasingly popular in post-secondary institutions. Ritzhaupt, Singh, Seyferth & Dedrick, describe the volume of ePortfolios used in higher education to be 'prolific' with "widespread adoption in the field of education" (2008, p. 47, 48). Salzman, Denner, & Harris report that, 89% of 319 colleges and/or departments of education in the United States, incorporate the use of portfolios as a basis for student outcomes (2002, p. 12). Unfortunately this report did not clarify whether the portfolios were hard copy or electronic, or the type of portfolio (assessment, process, or showcase). Gwozdek, Springfield, & Kerschbaum stated that "both as product and process, reflective ePortfolios have the potential to promote learning and transfer knowledge by fostering the ability to make connections between learning outcomes and learning experiences" (2013 p. 11). The ECAR Study of Undergraduate Student and Information Technology 2014, placed the ePortfolio as 11/12 technologies utilized by undergraduate students, where the majority of students (greater than 88%) did not use the ePortfolio and few (less than 25%) used the ePortfolio in at least one course (Dahlstrom & Bichsel, 2014, p. 9). The number of students who participated in the study was 75,000 over 213 higher education institutions across 45 U.S. states and 15 countries. Of technologies utilized by instructors, the majority of students wished instructors would "use it less" as a learning tool rather than "use it more" (p. 11), however, it should be noted that the ePortfolio was one of two technologies where "use it more" rates increased

by three and two percentage points compared to previous years (p. 10). The ECAR study determined that “the more tech-inclined students are, the more they wish their instructors would use this resource/tools” (Dahlstrom & Bichsel, 2014, p. 11). The ECAR study did not expand on the purpose or use of the ePortfolio in the various institutions, only that it was one of 12 technologies utilized by students.

Students in this research used the ePortfolio as a means to collect and reflect upon digital artefacts within an online environment to demonstrate their understanding of course materials on a variety of topics; to demonstrate, through reflection their ability to become lifelong learners; to demonstrate intrinsically their personal growth; and to be able to connect their ‘theoretical’ course learning with their workplace and other aspects of their lives. The artefacts consist of evidence on materials students are learning and their reflections on various articles or items. Reflection involves “a willingness to endure a condition of mental unrest and disturbance” (Dewey 1933, p. 13) and through reflection, there is “a discovery of facts that will serve this [the individual’s] purpose” (p. 11). In this regard, the ePortfolio becomes the map, and the artefacts the materials where the individual “weighs, ponders, and deliberates . . . a scrupulous balancing of things against one another” (Dewey, 1933, p. 57). Mezirow contends that, “[c]ritical reflection involves a critique of the presuppositions (assumptions) on which our beliefs have been built (1990, p. 1) and is generally used “as a synonym for higher-order mental processes (worldview)” (p. 5). Reflection as a conscious action is often used as a means to assess our beliefs and values, and involves taking action as a result of this thoughtful process. Critical reflection is reflection on our assumptions (beliefs and values), concerned with the “whys” (the reasons), and implies an element of evaluation (critique) of those

assumptions (beliefs and values). As Mezirow notes, “the most significant learning experiences in adulthood involves critical self-reflection - - reassessing the way we have posed problems and reassessing our own orientation to perceiving, knowing, believing, feeling, and acting” (Mezirow, 1990, p. 13). Awareness of our assumptions (presuppositions), results in our ability to challenge our beliefs, actions, communications, or our expectations that help form our meaning perspectives (if we so choose). We are often able to look at a problem and challenge its premise possibly by incorporating a metaphor to help make sense of the problem. Applying life’s experiences to solve a problem to be able to compare situations may provide clarity for the student, as it relates to the ePortfolio.

Perceptions on reflection and the ePortfolio. Working successfully through discourse between peers in an academic, business, or personal environment involving students’ beliefs may serve as a metaphor for reflections on an article that challenges the individual’s beliefs and values. For example: a M.Ed. student chooses to include in their ePortfolio examples of online communication with their peers and instructor. The student includes those postings that were well received by their peers as well as those where no responses were received. The student perceives that their response to a peer’s posting (communication) in an online environment has not been well received by their peer(s) within the forum as no one responds to their communication. The student may question their ability to adequately respond, to provide supporting information to their peer’s posting, or may feel they are lacking in their own communication skills, which may result in feelings of inadequacy, indifference, or frustration. A reflective student, consciously or unconsciously, may realize that they have observed this behavior of no response from

their peers previously. A reflective student, through critical self-reflection may examine their actions, feelings, and beliefs, and realize they need to adjust the method by which they communicate. As Garrison (2003) asserts, “the asynchronous and written communication within an online learning environment provides the conditions that encourage reflection over time to allow the learner to interpret and create cognitive presence congruent with deep and meaningful learning outcomes” (p. 48). Through critical reflection, students may have to call upon prior experiences, situations, and metacognition in an attempt to move forward with their goal of learning and attaining new knowledge. McAlpine et al, propose reflection as “a process of formative evaluation, with links between reflection and metacognition” (McAlpine, Weston, Beauchamp, Wiseman, & Beauchamp, 1999, p. 105).

Reflection, constructivism, and the ePortfolio. Meanwhile, on the epistemological aspect of constructivism, Schunk notes that the basic premise implies the epistemological aspect of constructivism is where “learners construct understandings that underlie many learning principles” (2012, p. 231), including an assumption that learners become actively involved and develop knowledge for themselves by reworking of materials through social interaction (p. 231). This aligns with the concept of graduate students and their construction of the ePortfolio, including reviewing and collection of digital artefacts, applying what they know, reflecting on the materials, and composing reflections that demonstrate their learning and knowledge gained through the ePortfolio. By becoming actively involved in their learning and learning process, students are able to set goals, monitor, and evaluate themselves and their work. Students are able to reflect on their life experiences and connect knowledge through the ePortfolio, which provides

them with an “ integrative learning space to question, investigate, analyze, and communicate” (McCoy Wozniak, 2012-2013, p. 221). These concepts form the foundation for the building of the ePortfolio. An ePortfolio embraces ideas that have “been central to the higher education innovation and reform movement; a constructivist epistemology that puts students at the center of building knowledge and meaning” (Kahn, 2014, p. 2) where “students create, integrate, and apply knowledge together” (p. 2). It is further proposed by Fritz that, “a prospective employer would probably prefer to read students’ documents [view ePortfolios] rather than ubiquitous academic topics” (2006, p. 249), such as tomes or theses, as the ePortfolio may be viewed as a more useful indicator of the skills (creative, organizational, critical reflection, problem solving, communication skills) of the prospective employee.

Theory Supporting the ePortfolio

Regarding the ePortfolio in the academic community, the theories of social constructivism and cognitive experientialism support ePortfolio as being valuable and credible. Schunk (2012) notes that, “many forms of constructivism, and Vygotsky’s theory in particular, stress the idea that learning is a socially mediated process” (p. 251) and also a “form of dialectical (cognitive) constructivism because it emphasizes the interaction between persons and their environments” (p. 242). Tools such as language, and observation of symbols facilitate learning; signs are then internalized and used to create meaning involving higher-level cognitive processes (Schunk, 2012, p. 252). Social constructivism is also used to describe the interaction of individuals resulting in the creation of knowledge (Fahy, 2012, p. 53), where the communication or observation occurring between individuals creates meaning for the individuals. Fritz proposed that,

“cognitive experientialism, sharpens the constructivist focus as to *how* do students transform their experiences into knowledge that others can use?” (2006, p. 249) and involves learning through active experience and reflection on that experience. Experiential learning occurs “where ideas are not fixed and immutable (unchangeable) elements of thought, but are formed and re-formed through experience” (Kolb, 1984, p. 28). Through various courses in the M.Ed. program, the student is required to participate and in many instances, collaborate with their peers in various assignments or respond to critical learning questions with the purpose of constructing knowledge that is added to the student’s own data base for a lifetime of experiences. As Schunk (2012, p. 5) commented in recollecting that one of the positions of epistemology is rationalism relating to “the knowledge of ideas, is innate and is brought into awareness through reflection”. I submit that reflection is one of the components utilized by students to help formulate their ideas that will be incorporated into the ePortfolio. Mezirow notes that, “reflection is the process of critically assessing the content, process, or premise(s) of our efforts to interpret and give meaning to an experience (1991, p. 104) and “our continued learning becomes dependent upon a reflective review of what we have learned, how we have learned it, and whether our presuppositions [ideas, opinions, beliefs, conclusions] are warranted” (p. 109).

Use of the ePortfolio

Reflection within the ePortfolio is viewed as “an essential element that differentiates an ePortfolio from a simple repository of artefacts” (Hartnell-Young, 2006, p. 127). “E-portfolios have a purpose as containers of knowledge products that reflect the learning processes required to construct them. Their purpose then becomes broader than

showcasing achievement of employability; for the individual creator they can capture a learning journey, while for society they can contribute to knowledge building by communicating knowledge from the mind into the world” (Hartnell-Young, 2006, p. 127). From a mixed methods study consisting of 204 college students, results showed only 19% of respondents believe their ePortfolios would be beneficial to securing employment and 53% indicated they would not use an ePortfolio to aid the employment process if they were the employer (Ritzhaupt, Singh, Seyferth, and Dedrick, 2008, p. 59). The study was undertaken in the fall of the 2005-2006 school year utilizing an instrument that they developed noted as the Electronic Portfolio Student Perspective Instrument (EPSPI) for the purpose of gathering information (p. 52). The ‘type’ of ePortfolio (process, assessment, showcase) was not identified and was noted as the ‘portfolio method’. Even though the type of ePortfolio was unknown, these findings align with results from this research, as the majority of online survey participants did not believe their ePortfolio would be beneficial to the broader community or to securing employment. Constructs researched consisted of visibility, learning, assessment, purpose (of the ePortfolio), and personal impact. The results are interesting and imply that respondents do not perceive ePortfolios to be of value to the broader community, which appears to be contrary to support by literature. Unfortunately, the online survey respondents did not identify the types of communities where they hoped to obtain employment. The broader community, as identified earlier, may consist of professional, business, not-for-profit, academic, and educational sectors. Additional statistics from the study by et al, study showed more than 80% would not perceive their ePortfolios as a meaningful learning device, and 77% would not use their ePortfolios for life-long

learning (p. 56). Further results from the study by Ritzhaupt et al, reported that 66% were uncomfortable with the development of an ePortfolio as a requirement in a capstone course (p. 57), 61% would not showcase their ePortfolios to friends or family (60%), and 47% indicated concerns about the degree of confidentiality of their ePortfolios (p. 59). Open-ended responses also indicated that many of the problems identified by the students related to the organization. For example: “Students would submit their work to the ePortfolio system, and the faculty would not assess their work using the ePortfolio system” (p. 66). Even though results demonstrate concerns with the use of the ePortfolio as a means of measurement, “the authors do not want this paper to communicate that ePortfolio systems are inadequate for higher education. Rather, the authors of the study believe that faculty and administration should be mindful of student concerns and closely monitor ePortfolio system integration initiatives” (Ritzhaupt et al, 2008, p. 67). I undertook an inquiry to determine if there had been further studies performed by Ritzhaupt et al, as it would be useful for the purposes of this study, to know if changes were made by that particular college to include more faculty support, the type of ePortfolio and its purpose, and if the results of the study would then demonstrate a more favorable outcome for use of the ePortfolio. My investigation revealed no further studies by these or other researchers pertaining to this topic.

In another research survey by Parker, Ndoye, and Ritzhaupt relating to the ePortfolio, seven major themes were identified. These included: “increased scope, guidance, timing, alignment with standards, reflection and growth, organization of work, and inaccessibility of the ePortfolio (2012, p. 102). The survey consisted of 244 students from a public university in the southeastern United States for the 2008-2009 academic

years. The purpose of the study was to explore “the advantages, disadvantages, and obstacles, they [the students] faced when creating and disseminating their e-portfolios” (p. 99). Results indicated that 25% of survey participants reported that “lack of time was the major obstacle”, while major advantages of developing the ePortfolio were “collection and organization (50%) and being able to reflect on work (20.4%)”, (p. 103). Although, the type of ePortfolio is not clearly described in this paper (article), from information contained within it, I surmise that the ePortfolio was a capstone activity required in the final stages of the program (p. 104). There appears to be consistency of statistics pertaining to ‘lack of time’ as being noted by students as a concern in the development of the ePortfolio. In this respect, it was necessary to analyze the results of this survey and to hear the voices of the participants for any challenges of time in creating the ePortfolio.

Increase in use of the ePortfolio. Results from the 2012 Babson Survey Research Group in collaboration with the College Board of the United States show that more than 2,800 colleges and universities in the United States find that approximately 6.70 million students (70% increase over the year 2007) were enrolled in at least one online course in the fall of 2011. The results also showed that at least 32% (increase of 570,000 students from the previous year), of all U.S. higher education students, were taking at least one online course in the fall of 2011 (Online Learning Consortium, 2012). There was growth from 2012 to 2013 of 3.7% and growth from 2013 to 2014 of students taking at least one online course increased 3.9% (Allen, Seaman, Pouline, & Straut, 2016, p. 4) with “in excess of 2.8 million students taking all of their higher education instruction at a distance in the fall of 2014” (p. 10). According to the U.S. Department of

Education, National Center for Education Statistics (NCES), (2014), of the 23 million students for the year 2011 to 2012 in undergraduate studies in the United States, 6.5% of the students were taking a full time online degree program. This was a 58% increase from the year 2007-2008 and is a clear indication of the growth of online education in post secondary institutions. Unfortunately neither the Online Learning Consortium nor NCES provide information specific to the ePortfolio and the use by graduate students, but statistics do demonstrate the growth of online courses and technology by colleges and universities. In another study of undergraduate U.S. based students of information technology, Dahlstrom, Walker, & Dziuban (2013) reported that in 2013, over half (54%) of the students for U.S. based students, (Canada 52%) said they have used an ePortfolio in the last year. Out of 113,035 respondents (undergrads) in the same 2013 survey relating to information technology in five states in the United States, just over 50% of graduate students in universities and colleges used ePortfolios as a technical instrument (p. 11). In the same survey, just over 60% of responses indicated that technology and outcomes achievement would prepare the individual for the workplace (p. 9). According to 2012 EDUCAUSE Core Data Service (CDS) data, (Dahlstrom, Walker, & Dziuban, 2013), many institutions have sparsely deployed the use of ePortfolio learning technologies (45% sparsely and 12% broadly) (p. 13). Generally, students use the ePortfolio for one course (CDS, p. 6). This reduced the reflective impact over a full program. Unfortunately, details as to the number of educational institutions that used the ePortfolio as a means for achieving an Undergrad degree or Master degree is unknown, however, enrollments in distance education show a 7% increase between fall 2012 and fall 2014 (Allen, Seaman, Pouline, & Straut, 2016, p. 13) even though overall

enrollments in higher education have reduced over that time (p. 14). Results from the ECAR 2014 study on undergraduate students and information technologies found that few students (18%) would include e-portfolios on their resume (Dahlstrom & Bichsel, 2014 p. 33) and considered “the traditional college degree as the gold standard for resumes” (p. 31). The results of my research study may provide university administrators, where the ePortfolio is used as a process or capstone program, information to take into consideration as to the purpose and end-use of the ePortfolio; promotion of the ePortfolio as a tool to include within the graduate’s resume may need to be reconsidered.

A look at the ePortfolio from afar. On the other side of the world, the ePortfolio journey in Australia has been very successful since its beginnings in 2003 or earlier. The Australian Learning and Teaching Council (ALTC) commissioned a small pilot project study in 2007 to gain “deeper understanding of ePortfolio practice in Australian universities” (Hallam, Harper, and McAllister, 2012, p. 132) and according to Hallam et al, the ePortfolio is “helping students move beyond the state of knowing *what* they have learned to consider *how* they have learned” (Hallam, Harper, and McAllister, 2012, p. 145). Evidence of growth in the use of ePortfolio is found in the fact that numbers of ePortfolios have increased from 495 ePortfolios to more than 5,000, and greater than 40,000 at Queensland University of Technology in the years 2004, 2005, and 2011 respectively (p. 142). The ePortfolio program, as proposed by Hallam and colleagues, has become “integral to the Queensland University of Technology learning experience” (p. 141) based on the “belief that critical reflection is central to ePortfolio learning and to enhancing the learning outcomes for all students . . . as it draws on the individual learning

experience.” (p. 141). In Croatia, at the University of Zagreb, an e-learning strategy involving the creation of an assessment ePortfolio was implemented in the Security of Information Systems course in the academic year 2008/2009 as a pilot study (Balaban, Divjak, Grabar, and Zugec, 2012, p. 43). Overall, comments were positive including, “*ePortfolio has enabled me to record my qualifications and experience during education*”, and, “*I see ePortfolio application in lifelong learning primarily as an opportunity to express our soft skills we didn’t acquire in formal education*” (p. 45). From a small pilot study, (number unknown), the ePortfolio is now used by over 500 individuals in 11 faculties at the university. As with any activity that is new, there are challenges facing the University of Zagreb associated with the implementation of the ePortfolio, including that the students perceived the ePortfolio exercise to be very time-consuming (p. 51). In contrast, students working on the ePortfolio at Queensland University of Technology (QUT) reported there were generally no barriers experienced. Hallam, Harper, and McAllister, reported that the themes that emerged as barriers [for teachers] included time, lack of academic interest, resistance to eLearning initiatives, reluctance to engage in reflective practices and competing priorities [for themselves]” (2012, p. 138). I would propose growing pains with any new activity, whether it is with students, teachers, or administration, could create uncertainties and stress. Over time, and by addressing the challenges proactively and positively, the barriers may be eliminated.

Positive Outlook for the ePortfolio

For ten years EDUCAUSE Centre for Analysis and Research, (ECAR) has been undertaking an annual study “to better understand undergraduate students’ technology

experiences and perspectives”, (Dahlstrom, Walker, & Dziuban, 2013, p. 7). Through the 2013 ECAR study, which included a survey of over 100,000 undergraduates at more than 250 college/universities over 14 countries, overall statistics indicated that undergrads agree or strongly agree (United States 76%, Canada 75%, other countries 72%) that technology helps them achieve their academic outcomes (Dahlstrom, Walker, & Dziuban, 2013, p. 9). The researchers noted that changes in technology have “empowered the individual user” (p. 3). For example, “in 2004, there was no YouTube, *blended learning* was a relatively new term, . . . consumerization of technology had not really taken hold, MOOCs (massive open online courses) . . . were yet to be encountered” (p. 3). In a later 2015 report by ECAR, on strategic technologies, ePortfolios were considered to be in the emergent category for the years 2015 to 2017 with additional growth predicted into the years 2018-2020 (Grajek, 2015, p. 35). This aligns with previous findings that there was “nearly sevenfold increase in the use of ePortfolios from 7% to 52% for the years 2010 to 2012” (Dahlstrom, 2012, p 21). The results were from a study of 10,000 respondents from 184 U.S. institutions as it related to an annual ECAR study of undergraduate students and information technology. In this same ECAR study, students agreed that, “technology helps them achieve their academic outcomes (75%), prepares them for future educational plans (74%), and prepares them for the workforce (63%)” (p. 19). The technology refers to all types including eBooks, eTextbook, online forums or bulletin boards, Wikis, Blogs, and open educational resources. EPortfolios are also included in the list of technologies and although they are noted at the bottom of the technology list pertaining to importance, Dahlstrom questions, “perhaps asking about value instead of importance would have yielded different results” (2012, p. 21) relating to

three emerging resource items of ePortfolios, web-based citation tools, and eBooks. Unfortunately the ECAR studies do not identify the types of ePortfolio (showcase, assessment, process), but the findings do recognize that there is significant growth in the use of the ePortfolios by students and that there is a high percentage of students who recognize that technology (in general), contributes to their academic outcomes.

Conflicting Results for the ePortfolio

Results from the ECAR studies (Dahlstrom, 2012; Dahlstrom, Walker, & Dziuban, 2013; Grajek, 2015) demonstrated growth of the Internet and the use of ePortfolios and other technologies as a basis for scholastic studies and student outcomes. In the mixed methods study by Ritzhaupt et al, discussed earlier, (2008), results showed that only a small number of respondents believed the ePortfolios would be beneficial to securing employment (19%), and the majority (53%) indicated they would not use an ePortfolio to aid in the employment process. These results are contrary to the statistics provided by the various ECAR reports for 2012, 2013, and 2015 (Dahlstrom, 2012; Dahlstrom, Walker, & Dziuban, 2013; Grajek, 2015). It is important that I make mention that the time difference between Ritzhaupt et al, from 2008 and these studies, and speculate about the possible reasons for the contradiction. This may be the reason the ePortfolio and kinds of ePortfolios have evolved since 2008. I preface my findings as some may be contrary, reinforce, or similar and will be discussed further in Chapter 4. Results from the study by Ritzhaupt et al (2008), showed a perception that ePortfolios were not viewed as a meaningful learning device, many students were uncomfortable with the development of an ePortfolio, and there were concerns about the degrees of confidentiality of their ePortfolios. In spite of growth in the Internet and the use of the

ePortfolio, there are statistics indicating areas of concern from students. The results from the Ritzhaupt et al survey provides valuable information to instructors and administration for the purpose of evaluating whether the means in which the ePortfolio is utilized within the online environment should be re-evaluated or whether the ePortfolio is truly an effective means to present and apply the knowledge acquired through the various courses. In another study of 40 students in two online graduate-level courses at a university in the western United States by Bolliger & Shepherd (2010), many of the responses relating to the ePortfolio were favorable such that 80% of the respondents “liked creating ePortfolios”, (p. 305), and 85% “agreed ePortfolio increased their desire to learn” (p. 304). Respondents, relating to the ePortfolio, noted challenges of only 40% “agreed ePortfolio had an impact on their level of motivation (in the course)” (p. 304), while just over half (57.5%) stated, “they would continue using them [the ePortfolio] in the future” (p. 305) and “lack of prior reflective experience impacted student perceptions significantly” (Abstract). Overall, the Bolliger & Shepherd study suggests that, “ePortfolios can be a valuable tool for some students” . . . but “findings indicate not all students benefit” (2010. p. 311). Similar to Bolliger & Shepherd’s study, my research findings noted positive outcomes for the participants, as a result of the ePortfolio process, such as competence, (“ . . . *that I had learned a great deal, and could apply my learning to real life examples within my career and education, . . .* “), deep and meaningful learning, (“ . . . *not only gave many opportunities to reflect on what was being learned but also to put it into practice in a relevant way* “), and empowerment, (“*the reflection required definitely caused me to grow as an educator and as a person* “). However, there were many internal and external barriers (real and perceived), and barriers to practical

applications. Of note, 54.2% of the survey participants felt that the ePortfolio would not be beneficial to the securing of employment and 66.7% of participants would not use the ePortfolio to aid them in a job application. My findings confirmed similar results to the Bolliger & Shepherd study that the ePortfolio was a valuable tool (for some), but not all research participants were satisfied with the process and/or outcome. The results of this research will be elaborated further in Chapter 4. The literature review as noted above (Hartnell-Young 2006; Mezirow 1991; Wozniak 2012-2013) demonstrates the potential value of critical reflection within the ePortfolio. Through the materials and reflections chosen by the student, the ePortfolio therefore becomes a tool that: helps to increase the student's understandings by working through uncertainties (feedback from instructors); is used for higher-order mental processes (metacognition); allows the individual to consciously assess their beliefs and values; resulting in taking action, and in deep and meaningful learning outcomes.

The academic community (and educational institutions) provides a means for students to transform their experiences into knowledge that others can use via the ePortfolio. EPortfolios are deemed to be containers of knowledge by communicating knowledge from the mind into the world. The use of critical reflection implies an element of evaluation (critique) of the individual's beliefs, and values, and embraces ideas and concepts that are central to higher education.

Contributions to Distance Education

In spite of perceived support for the ePortfolio by employers and the academic community evident in the literature, there are indications from statistics (Dahlstrom,

Walker, & Dziuban, 2013, Online Learning Consortium, 2012) that the ePortfolio may be falling out of favor with students even though literature (Dahlstrom, 2012, Grajek, 2015), indicates ePortfolios to be an emerging technology with continued growth to 2020. Through my research, I explored whether there is a correlation between the insights and reflections from graduate students and their decision to pursue the ePortfolio course route based on the varying stages when graduate students decided to pursue the Master degree via the ePortfolio and influences associated with this decision. I also explored if there was a correlation between the insights and reflections of students at different points in the creation or completion of the ePortfolio, and whether their capstone project was partially completed or had been finalized. I perceived value occurs for the students as a result of their work on the capstone project (ePortfolio). Challenges are identified, and if possible, noted as to ‘when’ in the ePortfolio journey, these challenges occurred. The results of this research identifies for administrators and instructors when problems occur, measures should be taken to address areas of concern by the M.Ed. students, and resolve problems (real or perceived) prior to frustrations or anxieties developing for the student. Learner frustration can be a major obstacle in the learning process. Smith & Ragan (2005, p. 61) identify that ignoring human information-processing characteristics causes learning problems. Fahy notes Ross’ words (1988) that “distance learning may ‘alienate and disenchant’ those who are not properly oriented to the differences and potential benefits” (2012, p. 26). I submit that challenges, frustrations, and/or anxieties that students perceive relating to the ePortfolio, might also alienate and disenchant students. Conrad notes that, “Moore’s (1991) transactional distance theory defines distance as pedagogical

and social rather than merely physical and geographical” (2005). Moore (1993) describes the essence of distance learning through transactional distance theory as below.

“Distance education is not simply a geographic separation of learners and teachers, but more importantly is a pedagogical concept. It is a concept describing the universe of teacher-learner relationships that exist when learners and instructors are separated by space and/or by time” (Moore, 1993, p. 22). With separation, Moore notes (1993, p. 22) “there is a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner.” It is this psychological and communications space that is the transactional distance (cited in Gorsky, 2005, p. 8).

To provide an overall understanding of an ePortfolio environment for students, I suggest that university administration and instructors need to recognize perceived barriers for students relating to the online environment (Moore’s transactional distance theory), how interactions assist learning (Vygotsky’s sociocultural theory), and help to build personal constructs as they relate to peer-to-peer interaction (constructivism).

Summary

It appears that there is evidence to support validity for the use of the Portfolio as a tool through which to share knowledge to a variety of audiences. As noted, ePortfolios are containers of knowledge consisting of artifacts and the individual’s critical reflections through the journey of the Master degree. As a result of the concurrent mixed methods study, students have a voice and provide their understanding and perceptions on the ePortfolio and reflections on knowledge gained (learning) through the experiences of the ePortfolio. The literature provides me with guidance so that I have an understanding of the various topics researched. Findings from the online survey and semi-structured interviews via Skype™ will be discussed further in Chapter 4 and 5.

For the purpose of this research, generalizable data has been gathered for statistical purposes even though the data may be difficult to obtain due to the relatively small number of students (statistically speaking), a lack in the number of students registered in the M.Ed. program, the small number of students who have obtained their M.Ed. degree over the last two years, or a lack of students willing to participate in the study. I aimed to document the voices of the participants to provide insights and rich observational information into the phenomenon. This was accomplished through mixed methods research, recognizing practical consequences as a result of the student's learning experiences through the learning process; the student perceived knowledge had been attained.

Chapter 3 - Research Methodology

Overview of the Research

The epistemology (understanding) and strategy of inquiry into the phenomenon in this research study draws upon a pragmatic paradigm accomplished through concurrent mixed methods research. Students' perceptions, values, and epistemological evidence of knowledge gained, is explored through a phenomenology study. I propose through this phenomenology study that, meaningful learning is attained through the creation of an ePortfolio. Upon completion, the ePortfolio will be submitted as evidence of knowledge gained by students in the Master of Education (M.Ed.) degree.

Phenomenology is not only the approach utilized as the method for qualitative inquiry but is also considered a philosophy implying a consciousness or awareness in undertaking a mental act. "A phenomenological study describes the meaning for several individuals of the lived experiences of a concept or a phenomenon" (Creswell, 2007, p. 57) which draws its foundations from philosophical assumptions. With respect to inner awareness, Smith (2002c, 2003) contends "the aim of phenomenology is to analyze (describe, interpret, analyze) our own familiar forms of conscious experience as we experience them from our own first-person perspective within the horizon of our familiar circumstances" (Smith & Thomasson, 2005, p. 2). Through the study, I looked to uncover and explored:

- The essence of meaning from M.Ed. students as to the lived experience in making a decision to pursue the M.Ed. degree via the course-based ePortfolio;
- Contributing factors that influenced the students through responses to the survey as well as through secondary semi-structured interviews (via Skype™);

- Significant statements from the semi-structured interviews that may reveal additional insights of the students;
- Insights or challenges that existed (real or perceived) relating to the element of critical reflection (including critical self-reflection);
- Students' perceptions of attainment of knowledge through the creation of the ePortfolio; and
- Whether the students perceived that the attainment of knowledge through the ePortfolio would be welcome within the broader community.

Responses to the online survey, semi-structured interview responses from a Skype™ interview, as well as body language from the interview, helped to capture the experiences of the students through the conscious mental act (of responding). As proposed by Moustakas, (1994), the essence of the experience consists of “what” [*sic*] they experience and “how” [*sic*] they experienced it” (Creswell, 2007, p. 58).

This section of the thesis involves commentary relating to the research methodology and includes a rationale for the use of pragmatism as a philosophical worldview, and the strategy of inquiry incorporating phenomenology research and concurrent mixed methods research. The population (participants) is described; considerations of rigor for researchers and challenges of mixed methods research are provided. A description involving a small preliminary study, used as a pilot study that validated the need for exploring the efficacy and challenges of the ePortfolio for M.Ed. students in an online environment is summarized. The pilot study also provided evidence of the experiences by the participants. The process and forms of data along with the methods for data analysis has also been provided and discussed.

A Pragmatic Paradigm (Worldview)

Pragmatism is utilized here as an epistemological framework for a mixed methods study which includes qualitative and quantitative components of the research. The epistemological framework refers to the study of attaining, maintaining, and demonstrating knowledge through mixed methods and is also referred to as a philosophical assumption. Creswell notes that epistemology, “addresses the relationship between the researcher and that [the students] being studied as interrelated, not independent” (2007, p. 247), referring to a ‘closeness’ that occurs between researcher and those being researched. Neuman (2011, p. 93) refers to epistemology as “an area of philosophy that includes what we need to do to produce knowledge and what scientific knowledge looks like once we have produced it”. Neuman’s definition appears to focus more on empirical data, but he does refer to a realist position of learning through making careful observations about reality (from the students) and views the term ‘worldview’ as incorporating broadly conceived research methodologies. The quantitative data obtained through the online survey disclosed a relationship with the qualitative information, but it was through the semi-structured interviews that I was able to ascertain what the student’s knowings are (know what they know) relating to the central research questions.

Pragmatism and research. Through the words of Cherryholmes (1992) and Creswell (2007), we begin to explore pragmatism, as a means to justify the combining of qualitative and quantitative methods as a research method and also as a viewpoint relating to the outcomes of research. Pragmatism as a philosophy is “the doctrine that practical consequences are the criteria of knowledge, meaning, and value” (Princeton University, Wordnet, 2010). Utilizing a pragmatic means for the mixed methods study,

allowed me to incorporate questions, (who, what, when, why, how) to students through the survey questions and to continue to explore similar questions through the analysis of the online survey results and semi-structured interviews. Cherryholmes suggests that, “pragmatic choices about what to research and how to go about it are conditioned by where we want to go in the broadest of senses” (1992, p. 13); to work, explore, learn, and understand. Creswell further notes that “individuals holding a [pragmatic] worldview focus on the outcomes of research [consisting of], the actions, situations, and consequences of inquiry, rather than antecedent conditions” (Creswell, 2007, p. 22), such as focusing on methods or standards of procedures. More important to the research is the problem being studied and questions being asked (Creswell, 2007, p. 23).

Classical pragmatists include: William James (1842-1910), C. S. Peirce (1839-1914), John Dewey (1859-1952), G. H. Mead (1863-1931), W. V. O. Quine, and continues today with writers such as Rorty (1979), Murphy (1990), Cherryholmes (1992), Cornel West, and Richard Bernstein, McDermid, (n.d.), (Creswell, 2007, p. 23). Even though pragmatism is noted and described as America’s distinctive philosophy having important influences on educational theory, Scheffler claims that, “in general, pragmatism has not been understood as a philosophy rather it has been taken casually as an attitude: an emphasis on action, practice, society, a concern with what works” (1974, p. 1). Scheffler goes on to question, “how are we to assimilate the new scientific emphasis for change on process, on action, on biological and social factors and on probable reasoning?” and also questions how we are to “connect the life of man with the natural world in which he arises?” (1974, p. 6). Creswell describes the mixed methods research incorporating a pragmatic paradigm as, ”pragmatism opens the door to multiple

methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis” (2009, p. 11). It is a means to best understand the research problem. The challenge to the researcher is to not reduce all the elements (experiences, actions, values, thoughts) that make up an individual and their responses to elements of factual science, but to present and connect all that the participant willingly shares.

“Mixed methods research has a strong tendency to emphasize the *how to* aspects of research” rather than focusing on elements of pragmatism as “when we ask *why to* questions, pointing to the importance of our choice of research goals” (Morgan, 2014, p. 1046). I am reminded to keep an open mind, to clarify meanings and look to consequences. For the purpose of this research study, the consequence is knowledge gained as perceived by the participant through the element of critical reflection of the ePortfolio and the students’ perception of acceptance of this knowledge by the broader community.

Support for pragmatism. It is over a century since Peirce in the 1860’s and 1870’s through his work in laboratories, explored the concept that that no hypothesis should ‘block the road of inquiry’ (Ormerod, 2006, p. 897). Peirce’s beliefs evolved to the creating of a ‘pragmatic principle’ consisting of, “a rule for clarifying the content of concepts and hypotheses and formed part of his theory of inquiry” (Ormerod, 2006, p. 898). Just as there are many proponents of pragmatism, there are “many versions of pragmatism with different points of emphasis, interpretations, and reinterpretations” (Cherryholmes, 1992, p. 13). As noted by Cherryholmes, Peirce’s (1905) pragmatism involved a “certain maxim of logic, a method for analysis of concepts and practical consequences being self-controlled conduct to affirm or deny a concept”, while Dewey’s

(1931) pragmatism “does not insist upon antecedent phenomena but upon consequent phenomena (possibilities of actions)” (1992, p. 13). Melles further elaborates that, “individual action and experience in the world was [is] the most realistic basis for decision making” (2008, p. 89). Morgan then sums it up with the statement that “pragmatism presents a radical departure from age-old philosophical arguments about the nature of reality and the possibility of truth” (2014, p. 1049). Exploring the depth and meanings of pragmatism of various pragmatists from over a hundred years ago to today is beyond the scope of this paper, however, the information provides me with some direction. Ormerod provides reasons for pragmatism including flexibility, how practitioners (researchers) behave in practice, it fits what we do, it supports a scientific approach (the quantitative component of research) and supports a theory of learning based on experience, experimentation, and action (2006). As an Accountant, (CPA, CMA), I tend to look to numbers and facts for answers. Even so, pragmatism as a knowledge framework, appeals to my practical and common sense approach in addressing problems.

Practicality of issues. Pragmatism does not appear to be committed to any one system, and for myself, rather than focus on a particular method for study, taking a pragmatic approach allows me to focus on the problem being studied (central research questions) and questions being asked, rather than on the research method. Pragmatism began as a theory of meaning where the meaning of an idea is identified with its ‘practical bearings’ (Quinton, 2011, p. 1). Quinton posits that “pragmatism is also a theory of knowledge and was so from the beginning” based on Peirce’s argument that “knowledge should be constructed from intuitively self-evident beliefs in minds that have

been cleared of all habitual assumptions” (2011, p. 2). A ‘paradigm’, made famous by Thomas Kuhn (1970) is a “basic orientation to theory and research” and includes “basic assumptions, important questions to be asked, and research techniques to be used” (Neuman, 2011, p. 94). I would suggest within this research, that I have followed the essence of Kuhn’s paradigm by providing basic assumptions including the purpose, and significance of the study, background and description of the phenomenon, the central research question, review of the literature to support the phenomenon, and a description of the research methodology.

Theoretical frameworks are also referred to as paradigms and are the “opposite extreme from empirical generalizations” (Neuman, 2011, p. 85), while theoretical frameworks are systems with assumptions, concepts, and specific social theories (p. 85). Prado (1987) acknowledges “pragmatism as a position rather than as a consequence of particular arguments, thesis, or methodological limits” (as cited in Melles, 2008, p. 89). Pragmatism, depending on the writer, is a theory of meaning, theory of knowledge, a theoretical framework, or a position. “Pragmatic choices about what to research and how to go about it are conditioned by where we want to go in the broadest of senses” (Cherryholmes, 1992, p. 13). For example: the central research question addresses the factors that characterize student perceptions of the ePortfolio process as a capstone project. In the broadest of senses, achieved from analysis of the study, the pragmatic (practical) paradigm begins with the point (if determinable) when students made their decision to pursue the ePortfolio and the influences that may have impacted their decision. Utilizing a pragmatic paradigm for the study provides for practicality of issues addressed during research design. Even though an interpretive social science paradigm

involves the study of social action and interaction, the text (responses to research questions) can be reviewed to “discover deeper, richer meanings within the text” (Neuman, 2011, p. 101) allowing each participant to bring their own experiences to the text.

Pragmatism as a social science research approach. Pragmatism is not without its challenges and even though it was favorably received in the United States in the late 19th century, it was not widely received in Europe due mainly to the perception that it was based on “American social attitudes of crass materialism and naïve democratism” and was thus “viewed as a quintessentially American philosophy” (Ormerod, 2006, p. 902). Cherryholmes proposed that, “what pragmatists believe is sometimes confused with knowing whether our knowledge [attained] is closer to or farther away from reality” (1992, p. 15). Resulting explanations or decisions made are as a result of our own questions within our environment. These questions may be dismissed while other explanations or theories are retained. There are also challenges in understanding the meaning of paradigms (worldviews) due to a lack or inconsistency in defining the meaning of ‘paradigm’. Guba, (1990), in an attempt to eliminate uncertainties, defines paradigm as “a basic set of beliefs that guide action whether of the everyday garden variety or action taken in connection with a disciplined inquiry” (p. 17).

However, Ormerod (2006), proposes that “pragmatism is now largely ignored [by the Academic Community] and is usually rejected (p. 905). Reasons for this rejection of pragmatism include that, “practice [research], according to Jackson (1999, cited in Ormerod), should be under the guidance of (controlled by) theory” (p. 905) and that pragmatism, according to Mingers (2000, cited in Ormerod, 2006), “does not provide

information about why a particular theory or model does or does not work . . . and only provides a relatively ineffective criterion of truth” (p. 905). As Morgan has further noted, “pragmatism disrupts the assumptions of older approaches [of research] based on the philosophy of knowledge” (2014, p. 1045). While Morgan’s statements may seem contradictory to the aims and processes of this study of knowledge gained through the element of critical reflection in artefacts in ePortfolios, Morgan also recognized the value of pragmatism in providing an opportunity to understand the nature of social research (2014, p. 1045).

Ormerod, points to an optimistic outlook for the use in addition to the challenges mentioned in the research community. For example, pragmatism supports: (a) uncertainty and accommodates the changing nature of our findings; (b) a scientific approach; (c) a social inquiry that is social; and (d) supports experience and action towards a theory of learning (2006, p. 905-907). As pragmatism is one of the interpretive social sciences, I would propose pragmatism focuses, as noted by Neuman, on features of self-reflection, empirical, and open-end processes (2011, p. 120). The empirical component is “rooted in the observable reality of the sights, sounds, behaviors, situations, discussion, and actions of people” and the self-reflective component notes that, “research is never done in a blind or unthinking manner [and] it involves serious contemplation and requires self-awareness” (2011, p. 120). The open-ended process involves the research as non-static, ever moving, evolving, and having “an openness to new ways of thinking and doing things” (2011, p. 120). Ormerod’s points of support for pragmatism resonate within my perception of how the study has been undertaken, and includes being practical and flexible, interacting with study participants positively, and recognizing knowledge

creation. These characteristics of pragmatism allowed me to explore the phenomenon to the best of my abilities with the tools available to me utilizing my best attempts to keep an open mind.

The Phenomenology Study

Incorporating a pragmatic paradigm allows the researcher to utilize whichever approach is practical “to discover deeper, richer meanings within the text” (Neuman, 2011, p. 100). This study first explored the research questions through quantitative analysis to determine if statistically there were significant results that would provide insights to the research questions. The research study continued and explored the online survey comments by the participants by breaking them down into codes, categories, frequencies, and definitions. I then attempted to identify if there was a relationship to the responses from the quantitative or qualitative components of the study. The experiences of the survey participants as they related to critical reflection, knowledge gained, and knowledge transferred from the ePortfolio, are of great import in the analysis. Through my analysis I attempted to interpret and reconstruct the online survey participant’s comments. The phenomenology approach, “places experience as central to the development of analysis understanding and involves the investigation of subjectivity in the form of a first-person account” (Griffin & May, 2012, p. 448); recognizing that each participant’s comment from the survey involved an interpretation by myself. This required incorporating various approaches to analyzing the phenomenology study. The third part of the analysis of the phenomenology explored the comments from nine survey participants who agreed to participate in an online semi-structured interview via Skype™. I discovered that the interviewee’s responses provided an unexpected richness as

compared to the participant's original written responses via the online survey. This is confirmed through Griffin and May's comments, of interpretative phenomenological analysis (IPA) as being the best way to examine "rich individual stories" and to re-examine previously written responses especially those that are intriguing (2012, p. 450). The participants' interview responses were analyzed, interpreted, and responses were re-examined as a composite among the various participants interviewed; the purpose being to reveal "increased coherence by which meanings are revealed from their original text" (Griffin & May, 2012, p. 450).

Phenomenology currently includes two approaches: hermeneutic phenomenology, which is also seen as an interpretive process by the researcher; and empirical, transcendental or psychological phenomenology where the researcher "sets aside their experiences to take a fresh perspective towards the phenomenon under examination" (Creswell, J. 2007, p. 59). Alternatively, the interpretive researcher studies a phenomenon, which seriously interests them, they reflect on essential themes, and maintain a strong relation to the topic of inquiry (Creswell, 2007, p. 59). Through transcendental phenomenology, the researcher, attempts to bracket out her experiences, collects and analyzes data by reducing the information to significant statements and combines the statements into themes. The researcher then develops a "textural description (what participants experienced) as well as a structural description (how they experience in terms of conditions, situations, or context) to convey an overall essence of the experience" (Creswell, 2007, p. 60). I was very curious and interested in understanding the motivation as to 'why' my peers, (the study participants), decided to pursue the ePortfolio route, at what point in the M.Ed. program was the decision made to

pursue the ePortfolio, what influences affected their decision, to what extent they perceived that knowledge was gained through the ePortfolio journey, and to what extent they perceived the ePortfolio would be accepted in the broader community. On the topic of phenomenology, Moran (2000) states that “central to phenomenology . . . is its attempt to provide a rigorous defense of the fundamental and inextricable role of subjectivity and consciousness in all knowledge and in descriptions of the world” (p. 12) and that phenomenology focuses on the “attempt to get to the truth of matters, in the broadest sense” (p. 4). This quote aligns with my decision to explore the epistemological framework of the study by incorporating a pragmatic paradigm (worldview), allowing me to explore in the broadest of senses of what to research and how to go about the study. Whether the researcher is considered an interpretive or transcendental researcher, is not significant to this study. The goal, for myself, is to provide an honest and unbiased analysis of the M.Ed. students’ decision and motivations incorporating sensitivity and flexibility on my part.

Every attempt has been made to bracket out personal experiences, identify significant statements and themes, and to interpret the study results carefully. Bracketing involves “a commitment to suspending or setting aside one’s own preunderstandings and assumptions of the phenomenon” (Vagle et al, 2009, p. 349). Another means to suspend these preunderstandings and/or assumptions is through Dahlberg’s (2006), ‘bridling’, which means, “to reflect upon the whole event when meanings come to be” (p. 16 as cited in Vagle, Hughes & Durbin, 2009, Abstract). The challenge for researchers, as proposed by Freeman and colleagues (2007), is “to reveal ourselves as our own best critics” (cited in Vagle, Hughes & Durbin, 2009, p. 348). It is important for researchers

to understand how we might bridle (reign in and/or slacken) our influence about the phenomenon. This requires an openness and willingness to listen, see, and understand the phenomenon at hand as well as the participants, and involves respect and humility, being patient and attentive, intentionally slowing down, and being mindful in understanding the meaning of lived experience (Vagle et al, 2009, p. 353). The challenge of incorporating a bridling position is for the researcher to actually do something with our assumptions and preunderstandings, rather than not say or attempt to do something with these thoughts. I discovered through my own enthusiasm, to undertake the interview that at times the participant and myself would break out into an extended conversation with the participant providing additional input and myself expanding on questions from the conversation. The pragmatic paradigm of the mixed method research allowed me this freedom.

Mixed Methods Research

The research study is concurrent mixed methods in nature, incorporating elements and philosophical assumptions of both qualitative and quantitative approaches (mixed methods) into one study. As Creswell & Plano Clark propose, by mixing both approaches; “the overall strength of a study is greater than either qualitative or quantitative research” (2007, Creswell, 2009, p. 4), and that “biases inherent in any single method could neutralize or cancel the biases of other methods” (p. 14). Neuman further notes that, “a study that combines both (qualitative and quantitative) tends to be richer and more comprehensive” (2011, p. 165). Even though mixed method as a mode of inquiry, (its use originating in 1959), is less known than quantitative or qualitative research approaches, combining and triangulating the results allows the researcher to add qualitative quotes to support quantitative statistics (or visa-versa). Spicer encourages

researchers to “develop ways of combining methods (quantitative and qualitative), . . . and that the ability to innovate lies at the heart of creative research practice and is a central part of combined methods research” (2012, p. 480). Through qualitative research, participants can be empowered to share their stories, and the researcher can hear the participants’ voices, resulting in minimization of any power relationships that may exist between researcher and the participants in the study. The other method for inquiry is through quantitative measures and statistical analysis but that method may simply not *fit* the phenomenon (Creswell, 2007, p. 40) as quantitative results provide numerical information for comparative or statistical purposes, rather than narratives of the experiences and actions of the study participants. Quantitative research does not examine natural settings or give meaning to the words and voices of study participants.

Knowledge created through mixed methods research should be opened for scrutiny and shared with the community, as overall credibility and validation of the knowledge rests within the community. For the purpose of this study, ‘community’ includes academia and the employment world.

Employing mixed methods in the study. The qualitative element of a mixed methods inquiry begins with a desire to delve into a phenomenon, seeks to understand the phenomenon, attempts to honestly and without bias, capture the words from the subjects on the phenomenon, and to establish rigor of the qualitative research to provide credibility. A quantitative study takes a linear path, emphasizes objectivity following standardized procedures and a causal explanation (Neuman, 2011, p.193). Incorporating a philosophical foundation of pragmatism into the research allows the researcher to triangulate meaning and observe the data from different viewpoints. For example,

utilizing the concurrent mixed method approach in this study, the researcher “collects both forms of data at the same time and then integrates the information in the interpretation of the overall results” (Creswell, 2009, p. 14). Triangulating information from both methods of research (quantitative and qualitative), allows the researcher to look at the data from more than one perspective. Combining both approaches sequentially, in parallel, or simultaneously tends to allow the research to be richer and more comprehensive (Neuman, 2011, p. 165). McGrath (1982) makes an interesting comment about methodological triangulation in that “all research strategies and methods are seriously flawed” (as cited in Turner, Cardinal, & Burton, 2015, p. 2), and therefore by utilizing multiple methods in combination, the flaws may enhance what is known about the research question (p. 2). Alternatively, Weick (1969) proposes that, “. . . [w]hen multiple methods [for research] are applied, the imperfections in each method tend to cancel one another” (p. 2). Methodological triangulation incorporates various methods or strategies for gaining knowledge about the research question (p. 2). As triangulation looks to multiple perspectives rather than one perspective, the information obtained may contribute to our understanding more broadly and enhances the validity of research results. Saba notes that, “[t]hrough triangulation researchers have increased the level of certainty that the results they obtain will be valid and reliable and not a mere effect of how data was collected, analyzed, or interpreted” (2014, p. 152). Spicer cautions that even though “the aim [of triangulating research methods] is to increase confidence in the conclusions drawn from a study thereby enhancing the overall validity [of the study]” (2012, p. 484), there are criticisms for triangulation of research methods that may result in different researchers interpreting the information differently where

“different findings are likely to emerge from each method [quantitative vs qualitative]” (Spicer, 2012, p. 484), with a further criticism that if an additional research method was incorporated, that the results of the third research method may result in new or further contradictions. I perceived that employing mixed methods research validated the incorporation of the pragmatic paradigm (practical idea) where results were gathered, reviewed, analyzed, and reflected upon. Analysis of the results allowed me to incorporate additional means to investigate, if I determined that the questions asked were incomplete or required further clarification. Denzin (1989) provides wise words relating to strategies for multiple triangulations, “Objective reality will never be captured. In-depth understanding not validity is sought in any interpretive study” (246, as cited in Spicer, 2012, p. 485). There is always the possibility that another researcher would interpret the research findings differently from myself or document the results differently. Combining methods in addressing a given research question allowed me to crosscheck results for consistency, eliminated or reduced the potential for bias in using a single research method, and provided for a deeper understanding of the information provided in the qualitative portion of the research.

The qualitative researcher attempts to create knowledge of the subject and their relationship with the phenomenon. Denzin & Lincoln attempt to define or provide insight into qualitative research as follows:

“Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive material practices that make the world visible. These practices transform the world. They turn the world into a series of representations including field notes, interviews, conversations, photographs, recordings and memos to self . . . This means that qualitative researchers study things in their natural settings attempting to make sense of or to interpret phenomena in terms of the meanings people bring to them” (2008, p. 4).

Mixed methods and the phenomenon. Qualitative research knowledge is used to provide high-quality services, to initiate change, to improve practice, policy and social service delivery to various individuals (instructors, students, administration, educational institutions and, businesses). Researchers involved, or those individuals who use qualitative research, may choose to evaluate their own practice of study. Qualitative research allowed me the opportunity to understand the experiences and viewpoints of the study participants relating to the phenomenon. Qualitative research, as a dynamic process, also allowed me to collect details, collate, and to categorize meanings from the participants and to modify questions, as needed. As Drisko (2008, pp. 95-95) commented, “[e]xploring epistemologies through qualitative research allows critical thinking about research knowledge and skills, as well as about values and social justice, and a better understanding of human diversity, and also that “not all qualitative research seeks to be scientific . . . these epistemologies can shape how we engage with and understand both people and the world” (p. 95). Investigating and studying epistemologies permitted me to discover what additional tools (besides the ePortfolio) were required by the M.Ed. students to produce knowledge. Incorporating a pragmatic approach allowed me to query various known and unknown variables (time, conflicts, personal challenges) that occurred throughout the study and that would be needed to determine what epistemologies known by the individual participants.

SurveyMonkey® was the tool used to capture both quantitative and qualitative components (open-ended comments) and Skype™ was the tool used for the semi-structured interviews. The data from SurveyMonkey® was exported to SPSS (a predictive analytics software as well as to Microsoft Excel® for analysis. The qualitative

components were examined over time. Codes and themes (categories) from the interview transcripts emerged over time. Definitions, frequency of codes and themes, and relationships between the codes and themes were determined. The intended population was the graduate students from Master of Education (M.Ed.) program at an online western Canadian university. Elements of the central research questions had been pilot tested using sequential mixed-methods. I had given great thought (reflection) to the central research questions and from that reflection, created the various questions posed to the students via SurveyMonkey®. Questions asked in the semi-structured interviews via Skype™ were based from the responses to the open-ended comments from SurveyMonkey®. Individuals who agreed to do the semi-structured interview were asked similar questions (to their peers) as well as specific questions based on their individual responses to the open-ended survey. The above information is expanded further later in this Chapter (3) and specific details as to ‘how’ the processes were undertaken for SurveyMonkey® and the semi-structured interviews are provided in Chapters 4 and 5.

The quantitative element of the mixed methods inquiry was undertaken to determine if there was a correlation from the questionnaire results based on the different stages of students throughout the M.Ed. process pertaining to the ePortfolio. Additional information was captured from the M.Ed. student body, such as work experiences and level of education, in order to determine if there is a correlation between the results of the questionnaires and the various aspects of participant demographics. One of the areas of competency that M.Ed. students are required to meet is expertise in technology and instructional design. However, exploring in-depth challenges as they relate to technology

is beyond the scope of this research. Included in the online survey are general questions about technology and the ePortfolio. These questions provided insights into challenges that students encountered relating to the creation of their ePortfolio. Questions about technology permitted me to determine whether technology diverted the students' attention to the 'workings' or 'how to' of the ePortfolio as the focus of students should be on the artefacts and reflections of the ePortfolio. There were potentially illuminating results relating to operational skills of the ePortfolio and support provided (or lack thereof).

Participants. The target population is all Master of Education (M.Ed.) online graduate students, including those individuals who have graduated with a M.Ed. degree via the ePortfolio route. I estimated that there would be an estimated 320 students available for the research project, with the exception of those students who were taking similar courses towards a Post-Baccalaureate Certificate, Diploma in Distance Education Technology, or Post-Baccalaureate Certificate or Diploma in Instructional Design. Students may also eventually withdraw, change degrees, or choose to take the thesis route. The estimate was based on 16 online courses offered in the spring courses of the subject university (May to July, 2016), with an estimated 20 students per class (based on the average of my own three previously-taken courses). It should be noted that very recent changes at the university now provide for a formal for-credit course (effective the fall of 2016), specific to the ePortfolio, as one of the 11 courses in the coursework route. This change did not affect the research question as to 'when' the decision was made to pursue the ePortfolio neither the students nor the question relating to critical reflection and its importance to the ePortfolio, knowledge gained, and shared with the broader

community. The estimated number of students that register for SCETA (Survey of Current Education Technology Applications), which is specifically geared to those students who will go on to create their own ePortfolio, is estimated at 20 (conservative estimate). I do not know the number of students who have completed the M.Ed. through the ePortfolio over the last year with 100% success (no resubmits and re-presents). Even though the students may not have yet chosen their end route (ePortfolio vs thesis), each of the M.Ed. courses in the program involves a critical reflection component through participation, or in some instances a paper (assignment), which requires the student to reflect on their learning. Even though the topic of the study is the gaining of knowledge by M.Ed. students through the ePortfolio and the critical reflection component, the aim of the researcher was to analyze the phenomenon of students at various stages in their degree program as they worked towards the creation of an ePortfolio. As there were unknowns in the varying population of students, there was uncertainty about the number of students or individuals who would complete the research study. A desired number of individuals in the study were 50. Out of 554 M.Ed. students at this university, 27 participated in the survey, with 24 individuals completing the online survey. The total population consisted of students currently taking the M.Ed., as well as those who had completed the degree. I had requested the database at the university provide only for those graduates who had completed the M.Ed. within the last two years; this request could not be done due to limitations within the system. Administration was asked to email the invitation only to those students doing the ePortfolio or who had completed the ePortfolio. It is disappointing that only 24 individuals completed the survey out of 554

students (4%), but the limited number of survey participants has not been problematic to the analysis.

The identity of the participants who took the research survey were not identified or known to the researcher. I did not ask any questions in the semi-structured interview (via Skype™) about previous courses taken or information about professors. This information is not relevant to the phenomenon. The identities of the participants for the interview were eventually known as the participants needed to be contacted by the researcher.

Considerations of rigor for researchers. Within the qualitative element of mixed methods research, codes, questions, categories, and statements are constantly compared against the interview information provided by the research participants. Modifications of the codes and categories are made and then tested again. Credibility, dependability, transferability, confirmability, as well as transparency, are important considerations for qualitative researchers and are some of the rigors that need to be established through the research. Credibility is whether all interpretations of the data have been considered. “Dependability requires an interrogation of the context and the methods used to derive data” (Richards, 2009, p. 159), and results in a better understanding of how to analyze the information and whether the methods of collection affect the results or perceptions of the data. Transferability provides a sufficiently rich description of the project for readers to assess how it might apply in their own context (Richards, 2009, p. 161). “Transparency has been described as ‘fundamental to good research practice’ and without this, quality assessment cannot take place” (Dale, 2006, p. 79), yet is noted as “the most difficult aspect for a researcher to manage and an outsider

to judge, because of the complex issues which may underlie representational decisions” (Richards, 2009, p. 160). It is proposed in the literature and this research study that the concept of transferability provides validity of the knowledge attained by the M.Ed. study participants. The ability to truly obtain validity or accuracy of information may be difficult to achieve, due to the nuances and interpretation of the research information. I have endeavored to incorporate the concepts of credibility, dependability, transferability, confirmability, as well as transparency, into the qualitative research, as it is my responsibility to the participants to present the findings of the research truthfully, honestly, and accurately.

Validity and reliability. Of importance to the mixed-methods research are validity and reliability. “Validity and reliability are often contested in qualitative research” (Richards, 2009, p. 159). Internal validity refers to the accuracy of the information and that “errors have not been made internal to the design of a research project that would result in false conclusions” (Neuman, 2011, p. 217). “Reliability means dependability or consistency” [of the data] (p. 214). The conflict in the use of these terms within qualitative research is beyond the scope of this research, but allows the researcher to reflect and explore as to whether information from the research can be truthful (valid) and matches reality, or if the information is authentic and, as noted by Neuman, is “offering a fair, honest, and balanced account of social life from the viewpoint of the people who live it every day” (2011, p. 214). The individuals ‘living’ the research are those M.Ed. students who challenge themselves and provide their insights and commentary through critical reflection of various digital artefacts required throughout various M.Ed. courses (participation and reflection), those graduate students

who are in the process of creating an ePortfolio, and those individuals who have completed the M.Ed. via the ePortfolio route.

Reflexivity in research. Not unlike the examining and reexamining of codes and categories from the participants statements, the researcher works on reflexivity in the data analysis process, involving the examination and re-examination of his/her own beliefs, values, and practices. Reflexivity is a “process that challenges the researcher to examine his or her conceptual baggage (bias) and how research agenda assumptions, subject, location, personal beliefs and emotions enter into their research” (Hsiung, 2008, p. 212). Researchers “need to empty the mind of preconceptions and take a broad view rather than a narrow focus to be able to defocus, to be highly aware, curious, and unburdened by assumptions and prejudgments” (Neuman, 2011, p. 427). This can be accomplished with bracketing out personal experiences or bridling our influences about the phenomenon. A mental picture of ‘bridling’ is similar to reining-in or releasing our horse, where the researcher is open, willing to listen, being patient and mindful of the participants. Reining-in relating to a horse implies to willingly guide through a pattern of circles, spins, and stops with little resistance from the horse. Reining-in of the researcher is to cease speaking or getting ahead of the semi-structured conversation. Releasing or slackening of the bridle on the horse provides for a form of learning. A common expression in the horse world is, ‘it is the release that teaches’. Allowing for participants to voice openly and freely their thoughts in the semi-structured interview the researcher observes participants ponder and explore their responses. Both, the interviewee and researcher may learn something about themselves through the interview process. I learned to bridle my own voice, when I shared my experiences as a thesis student, as a

means to be empathetic. I learned I had to be more aware and listen to the voice of the participants and not myself.

Just as the dialogue (words spoken or not spoken), behaviors (body language), subtle nuances of the individuals (participants and researcher) within qualitative research are complex, so is the process of qualitative research. The complexities of observation, recording, critical analysis of the participants and their environment require openness to the process and curiosity by the researcher by using various tools of qualitative research to paint the picture of the phenomenon as lived by the participants.

Challenges of mixed methods research. The researcher recognizes the additional challenges and complexities of utilizing mixed methods research and concurrent triangulation strategies. Challenges include the need for extensive data collection, time-intensive analysis of both text and numeric data, difficulties in comparing results of two analyses, as well as uncertainties that may emerge, in how to resolve discrepancies that may arise from the results (Creswell, 2009, p. 214). As an Accountant (CPA, CMA), I have been exposed to a variety of challenges in resolving accounting, financial, systems, or managerial problems. Exposure to resolving problems has been accomplished through learned and practiced skills, being pragmatic and creative, keeping an open and querying mind, and utilizing whatever legitimate means necessary to solve a problem. Mixed methods research appeals to my accounting sensibilities.

Survey questions. I took the opportunity to capture general information (Appendix B) about the participants that would provide additional insights for myself in the analysis of the overall research data. The questions were presented to the students

through SurveyMonkey®, an online survey tool, and have become part of the quantitative and qualitative data collection. SurveyMonkey® was founded in 1999; results are hosted and stored in the USA. Company requirements for security falls under the United States Patriot Act, which was put in place in response to incidents of terrorism. I chose SurveyMonkey® as it is more robust, easier to use, programming skills are not required, is secure, and has been in use for over 10 years (stable). Survey participants were advised that SurveyMonkey® is hosted in the United States and falls under the U.S. Patriot Act. SurveyMonkey® provides privacy points such that data collected is not sold to anyone, (information belongs to the researcher), respondents' email addresses are safeguarded, and survey responses are not sold to third parties. Data is held securely, incorporating physical, network, storage, application, user, and organizational and administrative security applications and processes.

In addition to providing general information, the participant is required to answer those questions that apply to them based on their category (example: decided to go the ePortfolio route, in the process of working on the ePortfolio, have completed the ePortfolio). For simplicity, participants were grouped into the following categories:

1. M.Ed. students, who have not as yet taken the Survey of Current Education Technology Applications, (SCETA) course, but plan to pursue their degree through the ePortfolio;
2. M.Ed. students, who are currently taking or have taken the SCETA course and are in the process of working on their ePortfolio (but not yet graduated);
3. M.Ed. students, who have completed their ePortfolio, have graduated or are in the process of submitting the ePortfolio.

Upon analysis of the survey, I determined that the participants should be split into two groups: those who were not M.Ed. graduates, and those who were M.Ed. graduates. I also determined that the SCETA course had some value for the participants, but I discovered it was unnecessary to split individuals into groups based on taking the SCETA course, or not.

Pilot Study

The pilot studies were mixed-methods in nature and sequential in design. The first research method, involving two participants, incorporated the phenomenology approach and investigated if knowledge was attained by students who had decided on the program-long process ePortfolio route for their Master of Education (M.Ed.). The second research approach, involving three participants, utilized a grounded theory approach, and explored whether M.Ed. students perceived knowledge was attained through the thesis route of the Master degree. The study involved a comparison of learning experiences and resulting knowledge of graduate students within the M.Ed. at a western Canadian university. The central research questions attempted to determine if, through analyses of all sub-questions and through analysis of the study, the participants would have any relationship to the thought process and decisions made in choosing the course-route via the ePortfolio versus the thesis route to obtain the M.Ed. degree, and whether the participants in either route perceived knowledge gained would be welcome within the broader community. The research questions in the pilot study were very similar to the central questions in this research study. Results of the phenomenology study demonstrated that through the synthesis and identification of the clusters of meanings,

relating to the central research question, it was possible to agree that there was evidence to support validity for the use of an ePortfolio as a tool to share knowledge. I verified that the ePortfolios were indeed containers of knowledge learned by the student through the journey of the Master degree. However, there can be frustration and challenges associated with the dissemination of knowledge and the reflection component. With a clear sense of frustration one student commented, *“there are successes as a Masters student, in sharing major activities in the learning process, but I may not be able to share these with the learning community”*. Even though this statement was expressed by only one of three of the interviewed participants, the statement speaks to challenges of future students as to whether they will have concerns in the sharing of artefacts they perceive to be sensitive in nature. Through the synthesis and identification of the clusters of meanings, as well as the analysis to reflect on the relationship of the interrelationships of open, selective, and theoretical coding, I confirmed that knowledge was created by each participant within their own route. A full description of the design, implementation, and impact of the pilot study is available if requested.

Procedures for Thesis Research

The procedures for commencement of the thesis research included recruiting of participants through a western Canadian university, Faculty of Graduate Studies (FGS), obtaining permissions from the participants, providing a Letter of Invitation (Appendix C), and obtaining permissions from the participants. The next step involved collection of data through SurveyMonkey®, an online survey tool, as well as collecting data from those individuals who had been invited to the semi-structured interview (via Skype™) to further explore the data for clarification, or to discover richer meanings within the text.

After the data was collected, it was then analyzed; the quantitative data was exported to SPSS, (a predictive analytics software). From there, the data was exported to Microsoft Word®, where the process of gathering, analyzing, more gathering, and further analysis continued. Part of the thesis process was determining if the analysis was accurate. This was explored through reliability and qualitative validity (not related to quantitative validity). Elements of rigor for the research were examined through credibility, dependability, transferability, confirmability and transparency. This section on procedures for the thesis also reviewed the importance of reflexivity on the part of the researcher. In-depth information is provided for recruiting of participants, data collection, analysis of data, and considerations for accuracy of the analysis in the following sections.

Recruiting of participants. The process of recruiting M.Ed. participants began after the thesis proposal received approval from the Ethical Review Board of the western Canadian university in accordance with the Guidelines as set up for Graduate Studies. Upon approval, communication between myself, the thesis Supervisor, and the university's Faculty of Graduate Studies (FGS) began in order to move forward with the research. The 'Letter of Invitation' (Appendix C) and 'Reminder letter to Participate' (Appendix D) was reviewed prior to the Administrative Officer of Faculty of Graduate Studies forwarded by email to potential M.Ed. participants. Email addresses for participants were within the database of the Faculty of Graduate studies.

The office of FGS sent a letter (email) of 'Invitation to Participate' (Appendix C), to every student currently in the M.Ed. program as well as to those students who had obtained their Master of Education degree (M.Ed.) via the course-based ePortfolio route over the last two years. The email provided an introduction of the research to the

potential participants, along with the participant's right to withdraw at any time without prejudice, the focus and purpose for the mixed methods study, as well as an invitation to ask further questions if there was uncertainty in the survey questions. Participants could contact myself, the thesis Supervisor, or the Office of Research Ethics if there were questions or concerns. The email also included volunteer information (who should volunteer for the study), study procedures (central research question), information on risks, privacy, and confidentiality, and general information (contact information). A 'Reminder Letter to Participate' (Appendix D) was forwarded to all potential M.Ed. participants after 45 days of the first email. The Reminder Letter was to have originally been sent after 10 days of the first email, but a decision was made to delay the Reminder letter to the beginning of January. There were concerns that participants may be less motivated at the end of course to participate due to final assignments being due at the university as well as seasonal holidays in December.

All participants were advised that they might be asked to partake in a semi-structured conversation, via Skype™, at the participant's convenience to provide the opportunity for additional exploration of the ePortfolio experience. A link to the research survey was emailed to participants by FGS upon receipt of the consent to participate by the potential research participants.

The original plan was to recruit participants for the semi-structured conversation (via Skype™) using purposive sampling, based on their unique perspectives and responses in the online survey. In this research study, I aimed for a sample of five or six individuals. Purposive sampling is often used "for in-depth investigation to gain a deeper understanding of types [cases]" (Neuman, 2011, p. 268). As there were limited responses

to the survey, all participants were invited to the Skype™ interview. Sampling through maximum variation/heterogeneous sampling was undertaken to provide as much insight as possible into the phenomenon. I was fortunate to interview nine individuals.

I had previously acknowledged to myself, that undertaking the semi-structured interviews with participants could be a challenge for me, recognizing that I needed to take appropriate steps to limit my own bias from the participant's responses. This bias may have related to when I made the decision to pursue the thesis for the M.Ed. degree as well as when I became informed of the ePortfolio route as an opportunity to pursue the M.Ed. degree. I discovered that the concern of bias was not a problem as I invited all of the 27 participants to partake in the semi-structured interview. Participants for the semi-structured interview (Skype™) were contacted to determine when (date and time) they were available at their convenience. Estimated number of interviewees was between five and ten; final number of interviews was nine. I discovered that the words originally written by the participants in the survey, once spoken, brought more depth and understanding of the phenomenon.

Collection of data. The survey questions noted (Appendix B) were presented to the students through SurveyMonkey®, an online survey tool and became part of the quantitative and qualitative data collection. SurveyMonkey® provides privacy points such that data collected is not sold to anyone, (information belongs to the researcher), and respondents' email addresses are safeguarded. Data is held securely incorporating physical, network, storage, application, user, and organizational and administrative security applications and processes.

Participants that agreed to the Skype™ interview were questioned and approached through the semi-structured interviews to validate findings and request clarification to those open-ended survey responses that were closed. The script read to each of the interviewees is provided in Appendix G along with main questions asked of all participants.. The following questions were asked of all participants in the semi-structured interviews. Some of the following questions were elaborated on to illicit additional clarification where appropriate.

Table 1	
<i>Main interview questions via Skype™</i>	
1.	How long ago did you get your Master degree?
2.	<p>Critical reflection is considered an integral part of the ePortfolio where artefacts chosen for the ePortfolio must be subjectively valued by the individual involving taking action as a result of this thoughtful process.</p> <p>a) Thinking back to your time as a new student to the program, if the ePortfolio was incorporated earlier into the program, do you believe you would have had the necessary skills and understanding of the critical reflection component? Please explain.</p> <p>b) The process ePortfolio (capstone) is recommended to be implemented as an ongoing portfolio early in the program, (Athabasca, 2014b), yet it appears that this may not be so. Do you see advantages to developing the portfolio earlier in the program? And why?</p>
3.	<p>Also included in the ePortfolio are methods of inquiry where you would have based your decisions on grounded evidence - - - and where conflicts real or perceived may have occurred. Dilemmas may also have occurred in the reflection process where they eventually needed to be resolved.</p> <p>How did you determine which artefact to choose? Did you experience dilemmas (challenges) in the reflection process? How did you resolve these dilemmas?</p>
4.	If you could incorporate improvements to the ePortfolio process, what areas would the improvements be?
5.	<p>“ePortfolios have been found to scaffold attempts at knowledge construction” Abrami and Barrett (2005). For example to the workplace, (where scaffold = transfer of information/skills).</p> <p>Have you found situations where the component of critical reflection is of assistance so that you are able to apply skills learned (such as reflective practice) to your own work or life situations? Please provide examples.</p>
6.	Do you feel you had the necessary guidance or support to the technical aspects of learning Mahara? If not, How could this be improved upon?
7.	Did you feel you had the appropriate amount of support relating to the ePortfolio journey (people, technology, other). Please explain.
8.	<p>The broader community is defined as the students’ peers, current, or future employers, educational community, and the academic community, where you can demonstrate concretely how knowledge has been gained through a variety of competencies. The assumption is that ‘knowledge belongs to all’ and that “knowledge must be shared with others” (Neuman, 2011, p. 14). Alternatively, students may pursue the ePortfolio route as a means to “cultivate within themselves both the culture and practice of lifelong and life-wide learning” (Hoven, 2015).</p> <p>a) How could the ePortfolio be improved so that it could be shared with the broader community?</p> <p>b) What kind of knowledge or increased skills do you feel you have shared with the broader community, as a result of the ePortfolio process?</p>
9.	Is there anything else that you wanted to add about the EP, or just in general?

The date, time, and location of those being interviewed for the semi-structured interviews were documented. Audio equipment was obtained to record the interview. Challenges associated with technology or concerns of the participant with the use of Skype™ was assessed and noted. The benefit of a semi-structured communication via Skype™ is for the researcher to be able to note any subtle body language that may communicate additional meaning to the conversation. Questions asked in the interview were based on the participants' emailed responses (some requiring clarification). Additional questions resulted because of the responses of those requiring clarification where the questions initially asked within the survey were incomplete or ambiguous on the part of the researcher, where the responses of the participants brought up points to be further investigated relating to the critical reflection component of the ePortfolio, or if there were ambiguities in the participant's response relating to knowledge and how this knowledge would be perceived by the broader community.

Using the field note method, I listened and took notes. The audio recording was used to refine and edit the field notes (transcribed). Participants were asked if the typing action by the researcher would be distracting in the interview. All participants agreed to this method of interview that allowed me to document body language that would enhance or detract from responses by the participant. I reviewed all of the audio recordings to clarify any uncertainties about the content of the communication with the participant in the interview. This was compared to my typed notes (when used), to ensure there were no misunderstandings on my part.

Analysis of data. The survey tool, SurveyMonkey®, provided me with the capacity to export / download the survey data to SPSS, a predictive analytics software. SurveyMonkey® has the ability to collect data, search and analyze frequently used words and phrases, relating to the qualitative element of the research; this information was exported to SPSS. The central research questions were examined using tools contained within SPSS. Based on the central research questions, I attempted to correlate information, keeping in mind, that as this is a phenomenology research study, correlations between information from survey results may arise where not expected.

1. I attempted to determine whether there was a point at which students decided to make their decision to pursue the course-based route involving the creation of the ePortfolio, and if this decision could be correlated to the influencing factors of the students in their decision process.
2. I also explored if there was a correlation between students' reflective processes, in their decision to pursue the course-based route and subsequent intention to create an ePortfolio and if it influenced the participants prior to taking the SCETA course, during the course, or after taking the SCETA course.

The SCETA course (Survey of Current Educational Technology Applications) was incorporated into the survey questions, as I perceived students might have been influenced in their decision to obtain the M.Ed. via the ePortfolio. The SCETA course is the only course (during my time in the M.Ed. program) that introduced the ePortfolio to the M.Ed. program offering hands-on experience in its creation. Students were required to complete a major assignment and build an ePortfolio. The SCETA course was considered prominent (by me), in the M.Ed. program, as it was one of two main

technology courses that were compulsory where students must decide which technology course to study. The other technology course does not provide any study of the ePortfolio. Students may lean to taking the course-based route and the preparation of an ePortfolio rather than pursue a thesis for their M.Ed. after taking the SCETA course. I would propose that once students take the SCETA course, they now have some experience in ePortfolios and may lean towards the ePortfolio route. This was not certain and was explored.

3. A final correlation was examined relating to the third research question between the students' perception of knowledge gained through the creation of the ePortfolio (current stage or completed) and if students perceived this knowledge as being accepted by the broader community.

The research study is a three-part process of information analysis consisting of the survey (information gathered was analyzed quantitatively and qualitatively), the semi-structured interview via Skype™ with open-ended questions (analyzed for frequently used words), and subsequent contrasting of the information from the survey with the results from the semi-structured interview. Questions for the semi-structured interview emerged as a result of responses to questions from the survey.

SurveyMonkey® also has the ability to search and analyze frequently used words and phrases relating to the qualitative element of the research. Additional tools available through SurveyMonkey® was explored and determined not to be very helpful.

Results were exported to Microsoft Word® and the process of qualitative analysis began. This study incorporated a pragmatic paradigm, which allowed me to utilize whichever approach is practical “to discover deeper, richer meanings within the text”

(Neuman, 2011, p. 100). I decided to incorporate elements of the grounded theory approach, which involved a ‘zigzag’ process, gathering, analyzing, more gathering, and further analysis. This approach appears to be in constant flux until categories emerge from the data. Additionally, after responses were recorded in a Master document, time was taken to reflect upon initial responses. Significant phrases or sentences were identified, captured, and meanings and themes were then formulated (with the emergence of common themes). Themes were then summarized between the participants. The elements of research rigor including credibility, dependability, transferability, confirmability, reliability, as well as transparency were reviewed. These are important considerations for qualitative researchers.

Various tables have been constructed where codes were determined from the written responses, defined, qualified, and examples provided (Appendix H). Codes have been categorized (themes) and defined within another table (Appendix F). A code and category frequency table was created consisting of categories, codes, and frequencies (Appendix E).

Further to interpreting the written word of the participants, “[t]he textural description of the experience is the “what” or the experience by the participants in the study with the phenomenon while the structural description is the “how” the experience happened” (Creswell, J. 2007, p. 159). The textural description culminates from the receipt, response, and reflection on the data analysis as well as describing the meaning of the phrases used by the participants. The culmination of both descriptions provides the essence and meaning of the experience. The questions were designed to determine the motivation or influences for the participant in choosing the ePortfolio route, the point at

which the participant's decision was made to pursue the ePortfolio, and the insights, challenges and successes in the creation, preparation, and submission of the ePortfolio. Reflective thought (critical reflection), perceptions, assumptions, and/or influences were incorporated into the central research question relating to the point (the 'when') a decision was made to pursue the course-based route involving the ePortfolio. These same internal thought processes were incorporated and were deemed paramount to the research to determine if deep and meaningful learning (knowledge) resulted from the ePortfolio journey for the participants, to explore critical reflection as a major component of the ePortfolio, as well as to determine whether the participants viewed knowledge as contributing to the broader community.

The semi-structured conversations between participants and myself and analysis of the typed conversations was undertaken to identify significant statements. Some qualitative researchers such as, Corbin & Strauss (1990, p. 187), have noted, "codes, questions, categories, and statements are constantly compared against reality (the data), making modifications, then tested again". They continue that, "verification continues as the data is revisited to see if it generally holds up for each participant and to verify statements of relationship" (108). Creswell proposes that, "[p]henomenological research uses the analysis of significant statements, the generation of meaning units, and development of what Moustakas (1994) calls an "essence description" (Creswell, 2009, p. 184). All of these analytical tools allowed me to provide reasonable, honest, and an unbiased account of the data and information from the participants in an attempt to gain a deeper understanding of the quantitative and qualitative data.

Is the analysis accurate? There are various means to ensure results are reliable in qualitative research. Qualitative reliability refers to the review of statements for errors while transcribing the data and ensuring codes do not change in meaning (during the coding process). Qualitative validity (not related to quantitative validity) refers to the accuracy of the findings from the perspective of the researcher or participant. One means to verify accuracy of the qualitative findings is through ‘member checking’, which involves taking back the finished product (report, themes, or specific sections) to the participants to determine whether the participants perceive that the information is accurate (Creswell, 2009, p 191). This may involve a follow-up interview that has now been determined to be unnecessary and I attempted to incorporate these reliability and validity practices. These topics (reliability and validity), as well as the importance of credibility, dependability, transferability, confirmability, transparency, and reflexivity are discussed in detail in the section on ‘Considerations of rigor for researchers’ in this chapter.

Limitations to the Research

Limitations are those elements that cannot be controlled by the researcher. Limitations to the project include the number of participants that agreed to participate in the research. Even though I have captured students at varying stages of commitment for the ePortfolio, life can be busy, and finding time to provide reflective responses to the survey can be very challenging to those individuals whose life is already full of daily commitments. Information received from the office of the Centre for Distance Education noted that there were approximately 525 M.Ed. students and graduates who received the email. Out of the 525 emails sent, only 27 responses (5%) were received. A

limitation that is of a concern is that there is no way for the researcher to confirm that the Request to Participate or Reminder was actually sent to all of the M.Ed. students and graduates. I did receive an email (as a M.Ed. student), relating to both matters (invitation and reminder), which was a comfort, but there is always uncertainty when a task is handed off to another individual. This individual then left her position, which was then covered off by two other individuals in the Department. A return of 5% of responses to the invitation placed doubt in my mind to the process. I did not have general information available from other researchers to compare the number of responses from their population to my own responses and population. Questions that come to mind are: 1) How many emails were actually sent? 2) How many emails were returned as not deliverable? 3) Were eligible participants inadvertently not captured as a result of the administrative process? 4) I was advised by a staff member that “they did not have the capacity to separate M.Ed. graduates by graduation date, in order to target only those who had graduated in the past two years” (Communication, December 1, 2016). Graduates that took part in the research study had recently graduated in the winter of 2016/2017; graduates prior to then were not involved in the research.

The amount of information that is provided to the potential survey participants in the Letter of Invitation to Participate may also be considered a limitation, as the end result is a lack of respondents. The request to participate includes the letter, a cover email providing summary details of the letter from myself, along with instructions from the Centre for Distance Education. There may be an overload of information provided to the potential survey participants. By the time the potential participants have read the cover email, it is possible they may not have the time to continue reading or cannot be

bothered with reading the Letter of Invitation to Participate which included the link to the survey.

Another challenge to the project derives from challenges of the independent study model within an online environment, including lack of honesty and openness in the written reply, insufficient written responses (Yes or No answers), and quick responses with lack of reflection by the participants. Other problems discovered were participants not responding to all questions, even though they were asked to ‘expand upon their responses’, and participants responding to the incorrect group resulting in being asked questions that were not applicable. The challenge recognized is that the participant may not have read the information correctly, or the information provided was not very clear to the participant (a delimitation). Limitations may result, as the participants simply may not want to respond to the question. Lack of, or incomplete responses by participants becomes a limitation to the analysis of the study. Another limitation to the project is a lack of participants who agreed to the semi-structured interview (via Skype™) as a means to delve further into the phenomenon.

Delimitations to the Research

Delimitations are the scope to my study and are “integral parts of the design because they set parameters” (Mauch & Park, 2003, p. 115). The delimitations are comprised of the following points: current graduate students and graduates specific to the M.Ed. program, those who elected to take the ePortfolio to achieve their M.Ed., and those students who agreed to undertake the semi-structured interviewed within an online environment. Delimitation of the study also includes the methodology of the research including development of the survey (questionnaire), assessing and determining the

reliability and validity of the questionnaire, and triangulation between results of the questionnaire. Other delimitations are: the analysis of the survey; determining the population (students who have, or have not completed the M.Ed. degree via the ePortfolio); and choosing the single-stage cluster sampling method (efficient and least costly).

Upon analysis of the first stage of the research study (completion of the online survey and analysis of results), rather than having a few individuals (five to ten) being asked to participate in an interview via Skype™, all of the 27 participants were asked to participate. The purpose of the interview was to expand or to clarify the participant's written responses. The original strategy was to organize the participants into small clusters based on where the participants were in the M.Ed. program where responses and voices of participants were found to be similar or alike. The single-stage cluster sampling method that was originally planned as a means to reduce the number of interviews, for efficiency and least cost, evolved into all 27 participants being requested to participate. This was to ensure there was optimum coverage for the interviews. Of the 10 individuals who responded to this request, nine participated in the Skype™ interview. The nine interview participants were asked further clarifying questions to their survey responses plus six additional questions for further query into the central research questions relating to critical reflection and the ePortfolio, knowledge gain, and transfer of knowledge to the broader community.

Ethics of the Researcher

Canadian researchers are governed by the Canadian Government's Tri-Council Policy Statement, "*Ethical Conduct for Research Involving Humans*", (2014). Within

the Statement are the principles associated with individuals in research studies such as respecting the person's judgment and ensuring the person is free to choose without interference (p. 7), consent and the protection of privacy of participants, (p. 10), and confidentiality, intellectual property and the capacity of participants (p. 25). The researcher must ensure the individual's privacy was not invaded, participation in the survey was voluntary, exploitation of surveys did not occur, nor were survey results misused. Neuman comments that, "your personal moral code is the best defense against unethical behavior" (2011, p. 143). Privacy, anonymity, confidentiality of participants is paramount and no hardship (discomfort) should come to the participant. Participants were assigned a code based on their industry of employment or study. An example is Edu-1 where this individual is from the Education industry and is the first respondent to the survey from that industry. Once the recording of the interview began, the participant was referred to by their code and not their name. This code is also attached to the participant's survey responses as a means to cross-reference between the survey and interview.

In the Letter of Invitation to Participate (Appendix C), I am identified as a graduate student of the university in Master of Education in Distance Education program. The reason for the letter (conducting my thesis), the right for the participant to freely decide to participate or withdraw without prejudice, the benefit associated with participating, as well as a description of the 'central research question' was also provided. The letter identified who could participate, the time to complete the written survey (20 minutes), the reason for the interview, and further expands where the participant may be asked to partake in an interview via Skype™ to further explore the participants written

responses to the survey. The amount of time for the Skype™ interview provided was estimated at 20 minutes, the potential participants were advised that the interview would not be videoed, and advised of the means for recording the interview (via audio and typing of responses). It was explained that the reason for the audio was provided to allow the researcher to return to responses that may not have been heard, or understood by the researcher. The actual time of the interviews was approximately 30-40 minutes; it was determined that the interviewees did not appear to have any concerns with the overage in time (10-20 minutes).

The Letter of Invitation to Participate encouraged the participant to ask questions before or during the study, identified the importance of participant confidentiality, and affirmed for the participants that there were no known risks or discomfort associated with the study. There were no questions asked by the participants prior to commencing the survey. As an incentive to participate, each participant's name was entered into a random draw (\$50 gift certificate at Amazon) and provided reasons for undertaking the study. The participant was also advised as to who would have access to the information (researcher and supervisor), where (both computer and USB with password protection) and how long the written responses and audio recording would be retained (five years). Final notations included confirmation for the participant that the study had received ethics clearance from the university's Research Ethics Board, contact information if there were any concerns with the study to the Office of Research Ethics, to myself, or to the Supervisor of the study.

Summary

The research study undertaken sought to determine the point (the ‘when’) at which a decision was made by students (current and graduated M.Ed. students) to pursue the Master of Education degree and to explore influences that may have impacted the M.Ed. students in their decision. Through the decision process to pursue the course-route ePortfolio, insights and challenges of the students in the creation, preparation, and submission of an ePortfolio were explored. The research study was established based on a phenomenological research method which allowed the researcher to collect diverse types of data based on a pragmatic foundation that provided understanding of the research question and results of which could be applied to professional graduate education practice.

Chapter Three provides information on the research methodology including an overview and rationale for use of a pragmatic paradigm as the philosophical assumption. The study employs a strategy of inquiry through concurrent mixed methods, and the rationale for the use of phenomenological research methods for the qualitative component of the mixed methods research. This section includes a discussion on the challenges and support for the use of pragmatism in this study. The research also provides information on a mini-thesis (pilot study) that I did that validated the need for the research. Within the mixed-methods research component for this chapter, information is provided on the participants and their recruitment, considerations of rigor for the research, the challenges of mixed methods research along with procedures taken for the thesis research (collection and analysis of data including means to check for accuracy). The research also provides procedures undertaken in summary and detail form along with data that was necessary to begin the study such as:

- The survey questions for the research (Appendix B);
- Gaining permission from the students (Letter of Invitation to Participate and Reminder to Participate) (Appendix C and D);

The significance of the research was to identify whether changes should be made in ‘how and when’ communication of information by administrative officers of the university should be presented to all M.Ed. students about the course-based ePortfolio. The research may also identify for administrators and instructors when measures should be taken to address areas of concerns for M.Ed. students as they work through their ePortfolio journey. The results, analysis and discussion of the mixed methods research are discussed in Chapter Four and Five with significant findings and implications for future research discussed in Chapter Six. The end result is to proactively address challenges experienced by current, and future M.Ed. students to make the capstone ePortfolio project a meaningful and knowledge creating activity for the student.

Chapter 4 – Quantitative Research Results and Analysis

Introduction

This chapter presents the quantitative component of the research results obtained through SurveyMonkey®, a survey tool, and the open-ended questions answered within the survey. Also discussed is how those results relate to the central research questions. I incorporated, in the survey design, open-ended questions to allow participants the ability to provide their commentary on a given question. I then determined whether the participant's open-ended comments substantiated the quantitative figures and if, through the analysis of the quantitative components, there was a correlation between various survey questions. I was able to determine the correlations between the various survey questions were not significant in value. I used the following steps in the quantitative data analysis:

1. I read the survey comments through several times. The software is very user friendly and provides for simple analysis;
2. I determined, early in process, that analysis of open-ended questions, through SurveyMonkey® software, was not very effective. The software has a feature to analyze wording, but the software does not provide for enough detail;
3. I then downloaded and reviewed the survey results from SurveyMonkey® to SPSS. I reviewed the text for SPSS software to ensure I had a solid understanding of its capabilities;
4. I then downloaded the survey results to Microsoft Excel® for ease of creating graphs;

5. I then reviewed each of the results, for a given question in SurveyMonkey®, along with the open-ended responses to determine if the responses provided for additional insights.
6. If I determined that the open-ended responses of the survey differed from the quantitative responses of the survey, (provided more insight), I then adjusted the statistics for the given question accordingly. Example: the participant responded with ‘*Other*’ as a response to a survey question. Upon analysis, the open-ended response indicates that the participant should have responded with a *No*, as their worded response indicates this.
7. At a future time (two months after the survey), to obtain deeper insight into the participant’s thinking process, I conducted semi-structured interviews with nine of the 27 survey participants. All of the 27 participants were invited to partake in the semi-structured interview.
8. I determined that codes and themes emerged from the opened-ended survey responses however, the semi-structured interviews provided much more detailed information about participant’s perceptions and experiences of the ePortfolio process. A discussion of the coding and themes (categories) are discussed further in Chapter 5.

I began the analysis of the quantitative results from my understanding of who the participants were, the industry that they came from, and how many years they had been working in the M.Ed. program. Nominal variables from the SPSS program originally separated the participants into three groups, but I discovered that upon analysis, that the participants should be placed into only two groups. The two groups were those students

that had graduated with a M.Ed. while the other group consisted of those graduate students who had not as yet graduated with a M.Ed.

The quantitative data, provided information about measures or descriptive statistics (describing the group they belong to), rather than inferential statistics where conclusions are drawn about a larger group of people (Ternes, 2011, September 28). The quantitative information is often substantiated with a Table or Graph to provide the reader with a quick and easy visual to provide substantive understanding to the thesis. The graphs also help to make the data more effective and comprehensible in the communicating of information.

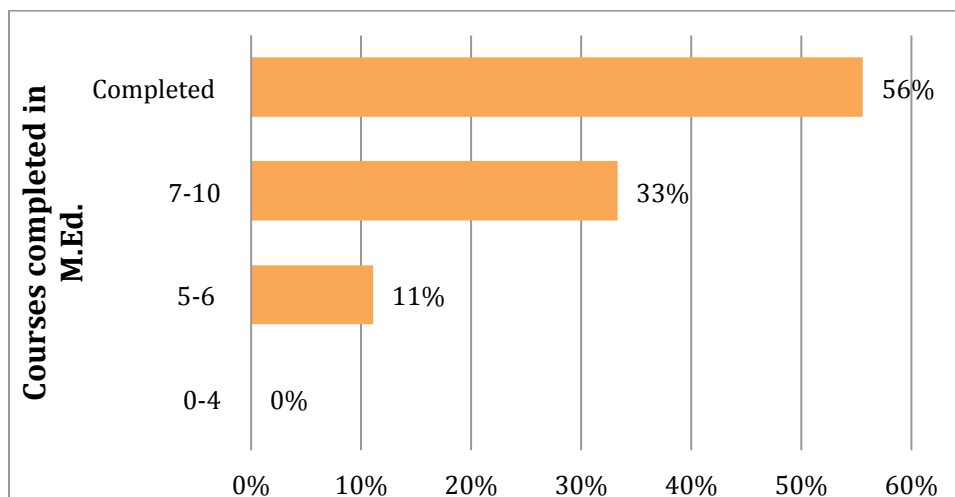
I have provided an analysis of the qualitative portion of the research in Chapter 5. This chapter includes information on how codes and themes were chosen, a discussion of the various themes, similarities of various codes and themes, and how these themes related to the central research questions. The final part of Chapter 5 discusses the connection of the quantitative sections to both of the qualitative analysis components (open-ended survey results and semi-structured interviews). Insights into the challenges and successes of critical reflection experienced by the participants, and perceptions of whether the participants determined if the ePortfolio should be shared with the greater community are also discussed further in Chapter 5. I now continue with the results and analysis of the quantitative component of the survey.

Who are the participants from the study? Out of 554 M.Ed. students at the subject University, 27 participated in the survey with 24 individuals completing the survey. Results from the three individuals, who did not complete (submit) the survey, were included in the analysis when these individuals provided information. The

population consisted of M.Ed. graduate students as well as those who had completed the M.Ed. degree.

Of the 27 individuals who participated in the survey, 19/27 (70.37%) were part time students and the balance were full time students; 67% of the participants were in the education sector, with 11% from Healthcare, 11% from Government & Army Services, and the balance from other sectors of industry. This question was asked to determine if individuals from varying industries had materially different responses as a result of their industry: there were no significant differences. I determined that 55.56% of the total participants (15/27) had completed the M.Ed., with 33.33% having taken 7-10 courses in the program, while 11.11% had taken 5-6 courses. This question was asked to determine if, as a result of taking fewer courses, some of the survey participants would have greater variation in their responses than those individuals with more courses, or from those individuals who had graduated: this variation did not occur. There were no individuals that participated in the survey who had taken less than five courses in the M.Ed. program. I have provided this data to present background information to the reader about the participants. I did not deem other demographic information such as the participants' (age, race, sex) to be relevant to the research.

Figure 1. How many courses have you completed within Master of Distance Education?



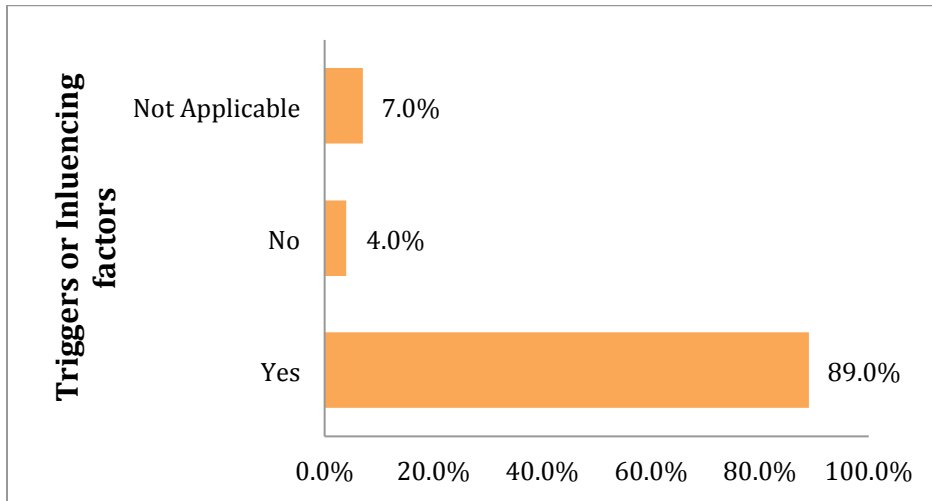
Thesis vs ePortfolio decision. Participants to the study were asked if they had considered the thesis route for their M.Ed. Of the 27 respondents, 18 individuals (66.67%) had considered the thesis route for their degree. The remaining participants were undecided, with three of the individuals now in the ePortfolio route after deciding not to pursue their thesis. Interesting comments included:

- *I was frustrated in my attempt to finish my thesis and with my advisor and decided to pursue the portfolio route;*
- *I did not want to do the thesis;*
- *I have completed all of the course work and understand that the ePortfolio is a course requirement; hence I never 'decided' to follow an ePortfolio – I am not aware of any option.*

The response by participants considering the thesis route vs the ePortfolio, lead to the question as to whether there was a 'trigger' or influencing factor(s) that swayed the participants towards the ePortfolio: this related to one of the central research questions. There was a resounding *yes* (89% or 24/27) from the participants indicating various triggers or influencing factors. Determinations were also made as to the point at which

M.Ed. students decided upon the ePortfolio as a means to obtain the M.Ed. degree, and the influences that assisted them in making their decision to complete the M.Ed. degree via the ePortfolio route.

Figure 2. Was there a ‘trigger’ or influencing factor that swayed you towards the ePortfolio route?



The responses from survey participants were focused more on ‘*why*’ the thesis could not be pursued (56% or 15/27) rather than the ePortfolio being a first choice (33% or 9/27) for completing their degree. Comments from the survey participants related to various roadblocks, challenges, influences, and the reflective component in pursuing the thesis are listed in Table 2

Table 2	
<i>Responses to triggers and influences relating to the decision to take the thesis vs ePortfolio route</i>	
Triggers or Influences	Responses
Roadblock or challenges in pursuing the thesis:	<ul style="list-style-type: none"> ▪ <i>Too many roadblocks from the organization desired to be studied;</i> ▪ <i>Time had passed and the thesis was not moving forward;</i> ▪ <i>Lack of time to complete degree through the thesis route;</i> ▪ <i>Challenges with transfer of courses into M.Ed., perceived thesis was not available;</i> ▪ <i>Coursework on quantitative (statistics) and qualitative analysis to be a challenge;</i> ▪ <i>Unable to pass thesis courses;</i> ▪ <i>Perceived the thesis would be more work;</i> ▪ <i>Could not decide on a thesis topic;</i> ▪ <i>Lack of funding to pursue thesis.</i>
Influences perceived by the survey participants towards the ePortfolio were noted as:	<ul style="list-style-type: none"> ▪ <i>Being more manageable to time commitments required while working full-time;</i> ▪ <i>Quicker to complete the degree using this route (the ePortfolio);</i> ▪ <i>Easier and [a] more beneficial route;</i> ▪ <i>The idea of creating an ePortfolio was appealing;</i> ▪ <i>Enjoyed the portfolio component of the SCETA course;</i> ▪ <i>The time to finish was perceived to be a year less (than the thesis route).</i>
Relating to the reflective component of the ePortfolio, participants noted:	<ul style="list-style-type: none"> ▪ <i>A good opportunity to reflect on all that I had learned . . . and would be very relevant in my work arena;</i> ▪ <i>I believe in the value of reflective practiceand allowed me to mesh with my personal educational values with a real-world project;</i>
<i>Note: Information compiled from the Coded Transcript (working papers)</i>	

It should be noted that course changes were made to the M.Ed. program by the university in the fall of 2016, whereby students are now required to take five core and five elective courses, as well as the course, Capstone e-Portfolio Project (CePP). As a final course, CePP provides students with an “opportunity to develop a high quality, comprehensive ePortfolio and to conduct an oral defense of that product” (Athabasca,

2017). As a result of this change, students are required to demonstrate stated core competencies of learning outcomes as a culminating activity in their M.Ed., similar to the previous requirements of the process ePortfolio. Students are also permitted to use Mahara, or an equivalent program, for the purpose of creating the ePortfolio, in common with previous course requirements. I discovered, in the semi-structured interview portion of the research, that eight of the participants had completed the new M.Ed. requirements. It is unknown whether the perceptions and thoughts of the participants are different as a result of taking the new CePP course. Examination of that element is beyond the scope of this research.

Understanding the ‘type’ of ePortfolio. Participants were queried, through the survey, as to their understanding of the type of ePortfolio to be developed for their M.Ed. This question was asked as participants may have had a perception of creating an ePortfolio that is different from that which is mandated by the university, or have a different understanding of the meaning of process (capstone) ePortfolio. The M.Ed. program at the western Canadian university in this study, utilizes the *process* ePortfolio incorporating elements of the assessment portfolio, consisting of artefacts, reflections, and defense (discussion) of the ePortfolio. In essence, the process portfolio, gathered over the life of the M.Ed. program, culminates in a capstone activity with a final assessment of Master work by students. The *capstone* ePortfolio is often referred to as a capstone activity.

The meaning of ‘process’ and ‘capstone’ ePortfolio is interchangeable in this study. At first review, results of the question indicated that the majority of participants (14/27) knew the difference between process/capstone, showcase, or assessment

portfolio. Those who knew the difference were asked to respond to the following question, “*Which ePortfolio do you understand or expect to develop for your M.Ed.?*”? Two (2) out of the *yes* group categorized ‘process’ and ‘capstone’ ePortfolio as being the same. Many of the participants (6/14) believed they were undertaking a capstone ePortfolio; one individual noted as undertaking a ‘showcase’ ePortfolio; one thought to be doing a ‘capstone/showcase’ ePortfolio and another a ‘process and assessment’ ePortfolio. One participant noted:

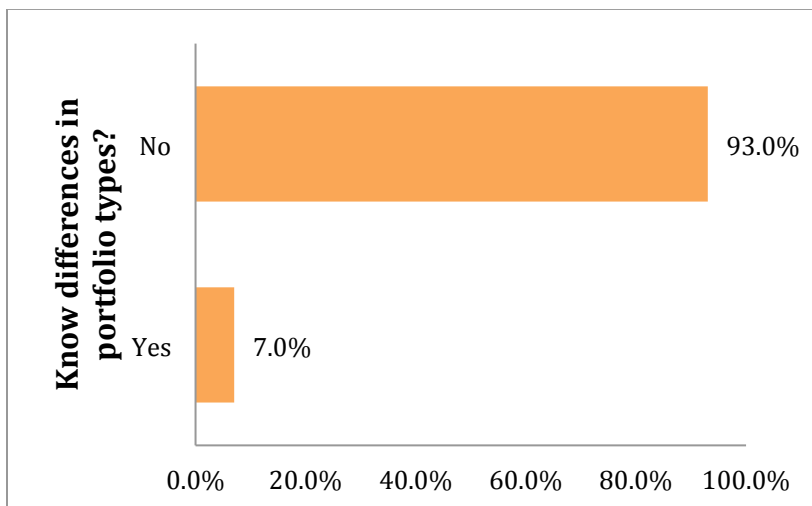
- *The different types [of ePortfolio] were not well explained in the one course that mentioned it. Portfolio was a minor project.*

The results indicated uncertainty by survey participants as to which type of ePortfolio they were going to, or did, create. There was also uncertainty from the survey participants as to their understanding of the meaning of the ePortfolio that was to be developed.

The Department has a requirement for graduates to create a process/capstone ePortfolio incorporating and applying various competencies. Upon analysis of the open-ended survey results, the responses to the question, “*Do you know the difference between process/capstone, showcase, or assessment portfolio?*” are noted in Figure 3. The original response, as to whether the survey participants knew the difference between process/capstone, showcase, or assessment portfolio, were almost evenly split (52% as *Yes* vs 48% as *No*), but through further investigation of the open-ended responses from the survey, the results showed a large variance (7% as *Yes* and vs 93% as *No*). This variance was worth reviewing and notes the importance of open-ended questions vs closed-ended questions. The analysis also revealed the respondents’ lack of understanding of the terminology of ‘process’ ePortfolio. This finding demonstrated that

there is uncertainty around this term, which warrants clarification by the university. From a pragmatic viewpoint, it is paramount for graduate students to know what they need to undertake in order to complete their degree. Needs are described as information (internal and external), tools and support. The phrase ‘ipsa scientia potestas est’ means ‘knowledge itself is power’ (Bacon’s *Meditationes Sacrae*, 1597, as cited in Clarke, 2015, p. 72) where knowledge or knowing empowers the individual to achieve great results. A lack of information (knowledge) may result in the student working through courses towards an end with great uncertainties or misunderstandings that can cause unnecessary frustration. This will be discussed further in Chapter 5.

Figure 3. Do you know the difference between process/capstone, showcase, or assessment portfolio?



Importance of the SCETA course. Through the ePortfolio process, M.Ed. students provide evidence of intellectual and professional growth achieved, through critical reflection on various digital artefacts, resulting in a capstone activity. The ePortfolio is an integrative culmination of digital artefacts documenting students’ newly acquired proficiencies. Students are required to complete five core courses, six elective

courses, and an oral presentation and discussion of the ePortfolio. Of the core courses, students must complete a technology course consisting of either Survey of Current Education Technology Applications (SCETA) or the course, Technology in Education and Training. Acquisition and internalization of the competencies required for creating an ePortfolio are introduced in the online SCETA course, which provides hands-on experience in various educational technologies in developing the ePortfolio. Students may or may not take this course (optional), but the course provides the opportunity to learn different technical platforms. Moreover, this course provides students with the opportunity to take their first steps towards initiating their own e-portfolio. The University website describes the ePortfolio as a means to make “authentic learning visible” and as a useful tool for students, faculty, and professionals use for the purpose of assessment, learning, reflection, and for promotion (Athabasca, 2014b).

Results of the survey revealed that 19/27 students (70.37%) completed the SCETA course, with two individuals currently in the course, and 5/27 (18.5%) as undecided as to whether they would take the course. In the same question, survey participants were asked about their “*motivation for taking the SCETA course, and if not taken, why?*” Motivations varied from course availability, a desire to improve current skill levels in technology, an interest in technologies, and experiences with challenges of University administrative issues (negative motivation).

Grouping of participants for analysis. The next series of questions in the survey separated the survey participants into different groups. The questions related to experiences on reflection, knowledge gained, and if they were able to demonstrate that they had achieved the greatest level of learning through critical reflection. Survey

questions also asked participants about their work environment and/or prior experiences and if these impeded their ability to critically reflect. These questions related to the central research question of the study.

The original purpose of distinguishing the survey participants into three different groups was to determine if there were material differences from the responses in taking (or not), the SCETA course. I determined that 70.3% (19/27) had completed the course, 7.4% (2/27) were currently in the SCETA course, 7.4%, (2/27) had not yet decided on the course, and 11.1% (3/27) were graduates and had decided on not taking the course.

Those individual who had not decided on taking the SCETA course provided the following open-ended comments:

- *I did not choose to take [SCETA] as a course because the alternative option of [the other technical course] was more applicable to my personal Masters focus.*
- *I did not take [SCETA] course before completion of the Master's program. It didn't attract me.*
- *I took the [SCETA] course, but it only touched ePortfolios at the time, it focused on all technologies and weigh alternatives.*

The majority of graduate students had taken the SCETA course (77.7% - completed or currently taking). The relevance of the central research questions to the SCETA course was to determine if after taking the course, students leaned towards the ePortfolio. I determined that that taking or not taking the SCETA course did not provide any relevance to the central research questions. I subsequently separated participants into two groups, consisting of those individuals who had not yet graduated with a M.Ed. (12/27) and those who had graduated with a M.Ed. (15/27).

Each group was asked similar questions. The number of courses taken by a student in the program showed no relation to having taken (or not), the SCETA course.

The survey questions ranged from cognitive, social, instructional, and technology components of online learning and the SCETA course, to experiences, reflection, biases (real or perceived) and beliefs, the environment, and decisions made in choosing artefacts for their ePortfolio. As a result of the comments from the online interviews, I determined that the participants believed that knowledge had been gained through the creation of the ePortfolio. A discussion with the interviewees identified who might find the information to be of interest from the external world.

Analysis of artefact as evidence or conjecture. The majority of the participants (75%) responded positively to the question whether they were able to be open and without bias, share their values, beliefs, thoughts, and examine whether an artefact was based on evidence or conjecture. However, some of the open-ended comments indicated otherwise, such as:

- *Personally, I don't feel that anyone is ever truly free of at least some bias but I certainly was able to present my values, thoughts, etc. and examine the merits of the artefacts based on evidence rather than conjecture;*
- *Most often I was led to 'discover' my own logic errors and self-correct to reach sound positions worthy of further exploration.*

Some participants qualified their open-ended responses with:

- *Clearly, I can't be completely open writing something I am being assessed on and which dozens of other students will read My values, beliefs, and thoughts are none of the business of the instructors Also, obviously I am biased about my artefacts and it would be foolish to pretend otherwise.*

I further examined whether there was support to the above individual's open-ended comments that would support the claims of the ePortfolio being, '*something I am being assessed on*', (an assessment ePortfolio). I determined from the individual's survey responses that the ePortfolio being created was a 'process and assessment' ePortfolio.

The individual supported his/her open-ended comments by providing a link to an article, where it was noted, “Moreover, the use of an ePortfolio towards the final assessment of an online graduate program is a unique application of this combined pedagogical and technological approach” (Hoven, 2015, p. 11). Hoven also notes, “an ePortfolio assignment has now been incorporated into the assessment for these courses (2015, p. 17). This participant’s understanding of ‘assessment’ ePortfolio may have been taken out of context from the article, but it was interesting to have a survey response supported with a valid reference: other participants did not provide support (reference) to their open-ended responses and no one else perceived the ePortfolio to be a process and assessment ePortfolio.

Other participants qualified their open-ended responses as to whether they were able to be open and without bias, share their values, beliefs, thoughts, and examine whether an artefact was based on evidence or conjecture with the following:

- *I was able to do so, but I found it to be a huge challenge to talk about and share my values and beliefs on paper;*
- *Yes, but there are always biases. The best one can do is to understand their biases and try to reflect on how they influenced the learning”.*

The participants in the study provided additional insights into their perceptions as these related to their biases and beliefs, in examining whether an artefact was based on evidence or conjecture. Brookfield (2009), notes “reflection focuses on uncovering assumptions, the conceptual glue that holds our perspectives, meaning schemes, and habits of mind, in place” (p. 294). The assumptions that guide our choices involve recognition and research of those assumptions, and underpin much of our critical reflective thoughts. This may provide an explanation as to why many of the participants

qualified their ‘yes’ response to the survey question about bias and openness in reflecting on various artefacts.

Critical reflection analysis. Regarding the survey question: “*through critical reflection, are you able to discern what artefacts or which work demonstrates the greatest level of learning*”, the greatest response to ‘yes’ came from those individuals who had completed the Master degree. There was only 58.3% (14/24), of the two groups who had an understanding of critical reflection relating to which artefacts or works demonstrated their greatest level of learning. However, through a review of the responses to this question, as well as other questions, many of the participants appeared to demonstrate critical reflective writing even though they did not perceive they had an understanding of this concept. Brookfield posits that critical reflection should not be viewed as an unequivocal concept but rather as a contested idea where “from a pragmatic and constructivist perspective, critical reflection is evident when people realize how they are active constructors of their own experience in a world of open possibilities” (2009, p. 296). This is evident from the participant who noted:

- *I am still struggling with this [ePortfolio] . . . The experiences that were most relevant don’t always result in ‘checking off the box’ next to the competency required;*
- *. . . this carried on into my ePortfolio, which allowed me to use the critical thinking skills to revisit my earlier course and justify not what I had learned, but whether I had learned.*

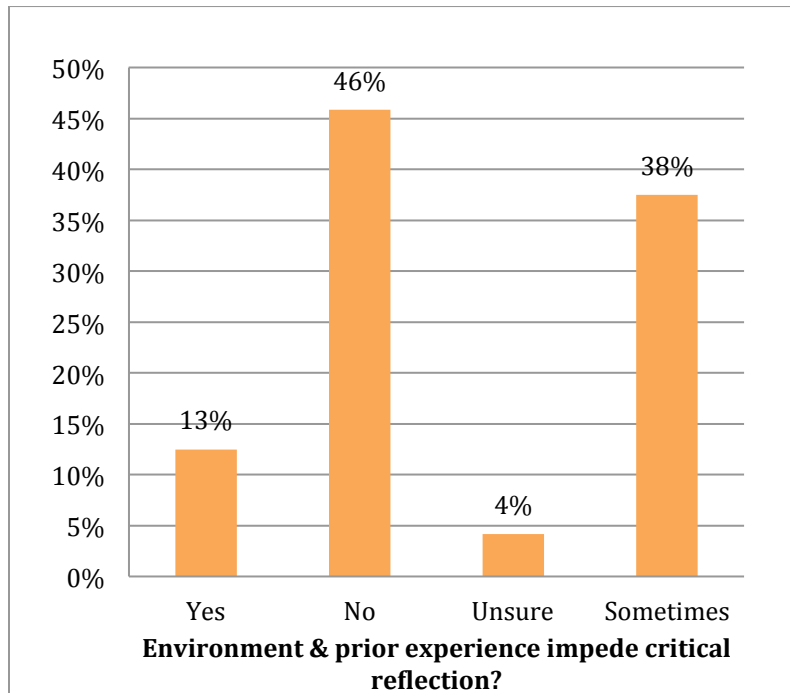
Many of the participants (41.6%) were *unsure* (20.8%) or responded with *no* (20.8%) as to their understanding of critical reflection as demonstrated by:

- *It took me a while to ‘figure-out’ what is considered a meaningful critical reflection.*

These results will be discussed further in Chapter 5

Environment and prior experiences. The environment refers to the online environment (course or forum) that the individual interacts. Participants may view the environment as a tool (physical), an intellectual or emotional setting where relationships can be formed (or not), or a place where knowledge sharing can transpire through written discussion forums. For example, the online environment may be viewed as a tool or place where participants can obtain information. In addition, discussion forums found within the online environment may provide for positive or negative experiences depending on perceptions of the participant. How individuals experience their environment may directly affect how individuals process information that may be used within the ePortfolio. Many participants (45.8%) did not feel that their environment impeded their ability to critically reflect, yet the combined balance of participants (54.2%) felt the environment did impede them, were unsure, or felt that sometimes there was uncertainty, as noted in Figure 4.

Figure 4. Did you feel that your environment and prior experience impeded your ability to critically reflect?



Many respondents to this question had concerns such as:

- *Before this [the degree program], I had no exposure to the concepts of critical reflection and no practice in the activity of critical reflection. Even after completing the eportfolio I could not say that I have an understanding of how *to do* critical reflection and could not explain to someone else what critical reflection is.*
- *Having come from a non-academic career where reflection is not highlighted and quite so prized, it is a bit of a challenge. Additionally, this raised the issue on how personal should I get in the reflections?*

The environment can be viewed as a tool or physical component, (forum or classroom)

where interactions with others take place. Participants had positive comments as it

related to the physical component of the environment:

- *. . . in a class environment I would not be able to do that [ability to reflect] because there were too many distractions from classroom activity . . . you*

can critically reflect in the comforts of your home, your own personal environment or preferred learning environment;

- *I think I was able to use critical reflection regardless of any prior experiences. In fact, I feel I have always used critical reflection, however, taking the Master's degree and doing the e-portfolio helped me practice it and develop the skill better.*

Critical Reflection: Cognition, Social, Teacher, and Technology

Within the survey, questions were asked about the participant's ability to critically reflect on their perceptions of cognition, (development and growth of critical thinking), social, (collaboration and communication), teacher (support), and technology aspects. Courses are provided to the students through an online environment in the M.Ed. program. Students interact with others, such as their peers and teachers (instructors), within this environment. The discussion forums within the courses, provide a virtual-place where learning, social skills, collaborative efforts, and communication are experienced. I propose that students are active or passive learners (not engaged with others) based on the individual characteristics of the student. Critical reflection practices, as a result of these experiences, help form the student's cognitive and metacognitive foundation that will eventually be incorporated into artefacts that will be used within their ePortfolio. The majority of participants, 70.8%, felt that the various courses in the M.Ed. program provided necessary development and growth of critical thinking. One participant noted:

- *The courses involved a great deal of self-reflection, interpretation and deeper understanding . . . which meant that I was required to apply what I learned or interpreted throughout my learning.*

The social component of collaboration and communication within the SCETA course was indicated by a response of 70.8% who felt that that they were able to openly

express their challenges or concerns, and 29.2% of the participants were *unsure* or did not feel comfortable within the environment as demonstrated by a participant's comment.

- *Collaboration and communication was encouraged; however, personally I had a difficult time openly expressing my challenges or concerns. I felt I didn't have anything to contribute to the discussions in one course because I felt so inexperienced in the subject matter, but I was forced to comment anyway in order to get marks, This made me feel uncomfortable and I ended up just trying to find something to say and worried that the something I said would be unhelpful or inappropriate because I didn't even know what I was talking about, just trying to meet course requirements.*
- *. . . in a class environment I would not be able to do that [ability to reflect] because there were too many distractions from classroom activity . . . you can critically reflect in the comforts of your home, your own personal environment or preferred learning environment;*

The component of critical reflection and the ePortfolio is one of the main focuses associated with the central research questions. The participants' environment relating to cognition, social, teacher, and technology were explored as it related to strengths or weaknesses and reflective practices. The above comment from one of the participants expressing his/herself provides an example of the challenges experienced within the online environment. The second comment provides evidence that students also have challenges within a class environment. I would propose that the environment (face-to-face or online) could be a challenge depending on the individual's preference for the type of learning environment. From the above comments, the challenge for students appears to be related to communication, feeling comfortable within an environment and critically reflecting. Participants with a lack of practice in self-critical reflection and lack of confidence in course involvement may experience challenges and frustration. The participant may be unable to express themselves within their ePortfolio as a result of these challenges. This was earlier demonstrated where only 58.3% of the participants had an understanding of critical reflection, in general and that were applied to chosen

artefacts demonstrating their greatest level of learning, but 41.7% of the participants were *sometimes* or *unsure* when asked if their prior experiences from their environment impeded their ability to critically reflect.

Technology. In response to the question relating to technology and if participants viewed technology as being user-friendly, 66.7% indicated that the technology was satisfactory with 29.2% of the survey participants being unsure. Technologies used for creation of the ePortfolio were Mahara, Moodle, Weebly, Wikispaces, Wix, Word Press, and one cloud-based platform, with Mahara being the platform that most students used (50%) followed by Wix at 14.7%. Technology is a physical or conceptual tool and represents a means or method of attaining an end. In the M.Ed. program, the technology platform is considered an essential tool used to create and display various competencies of the student in the process ePortfolio. Many participants noted, through the open-ended survey responses, that the technology was satisfactory and provided comments such as:

- *Mahara is straight forward;*
- *I didn't have any difficulties using this software.*

Examples of barriers, relating to the technology, are noted in Table 3.

Table 3	
<i>Examples of barriers relating to technology and the ePortfolio.</i>	
Barriers	<i>Survey examples</i>
Elements of frustration	<i>I find Mahara non-intuitive and impossible to design with;</i>
Lack of creativity	<i>. . . downside of Mahara is that there is limited functions for organizing the material which limits . . . the creative aspect of the portfolio;</i>
Lack of flexibility	<i>I felt Mahara did not allow flexibility in column width or wraparound features for graphics;</i>
Need for improvement	<i>I tried the Mahara system however it was very poorly designed hard to navigate.</i>
<i>Note: Information compiled from Appendix H, Theme & Coding Table</i>	

Implications are that technology is an important tool in the creation of the ePortfolio and barriers (challenges) from technology may cause frustration or delays in the completion of the ePortfolio for students. There were 29.2% of the participants not satisfied with the technology. They experienced barriers of frustration, lack of being able to be creative in the platform, lack of flexibility by the technology, and lack of knowledgeable and accessible support. Individuals from the university, who are responsible for the technology, should ensure there is knowledgeable and timely support available to students and that the technology available to create an ePortfolio is a viable, user friendly, and effective tool.

Teacher support. The teacher (support) within various M.Ed. courses, and in particular, the SCETA course, was identified as one of the qualitative themes that emerged (*people for success*). Acquisition and internalization of the competencies required for creating an ePortfolio are introduced in the online SCETA course, which

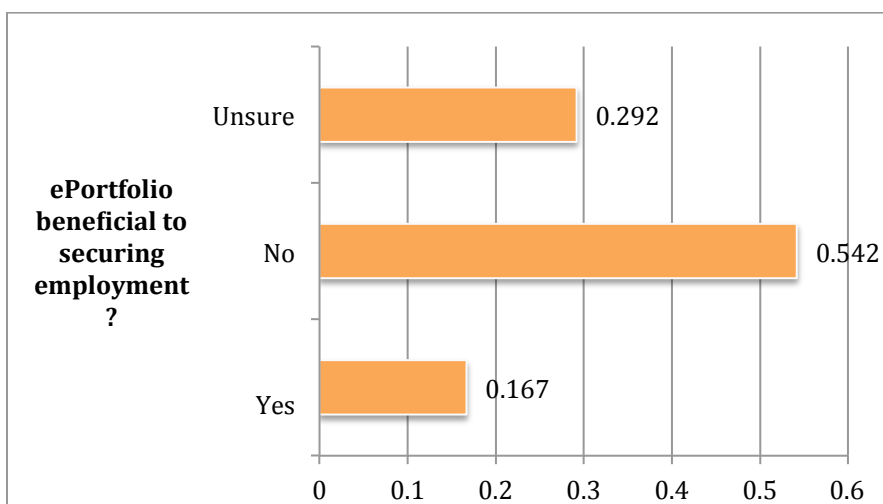
provided hands-on experiences in various educational technologies including the ePortfolio. The course provided the opportunity to learn different technical platforms and for students to take their first steps towards initiating their own e-portfolio. Participants most often identified the support from teacher as facilitator, coach, subject matter expert, instructor, and mentor, or guide. As two individuals noted:

- *More of a 'sage on the stage' than a 'guide on the side'*
- *... provided excellent guidance and was a great teacher/facilitator!*

Viewing the teacher (instructor) as a barrier was limited to a few participants (*closed door, marker, grading person*).

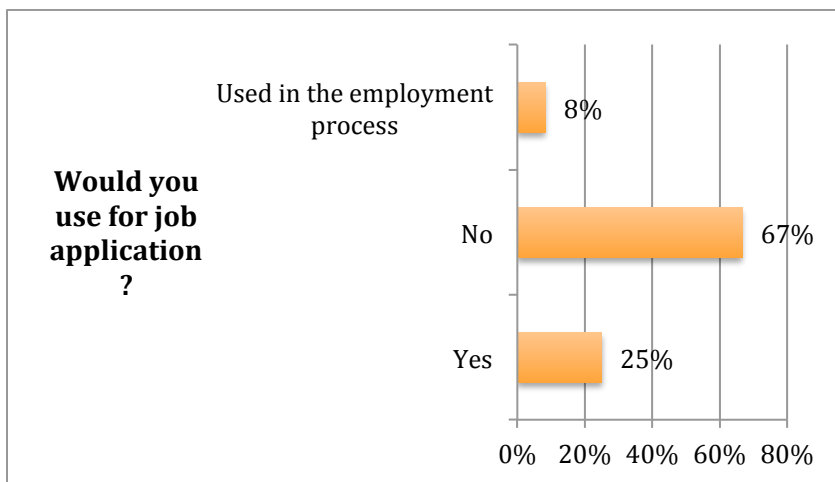
Transfer of information results. In response to the question relating to the ePortfolio and the securing of employment, or if the transfer of information to the broader community via the ePortfolio (specifically future employers), would be beneficial, participants responded with *no* at 54.2% (13/24), with the largest percentage (61.5%) coming from those individuals who had completed their ePortfolio.

Figure 5. Do you believe the ePortfolio would be beneficial to securing employment?



I further determined that 66.7% of the participants would not use the ePortfolio to aid them in a job application with responses of 84.6%, coming from those who had completed their M.Ed. Of the 15 participants (55.5%) who had graduated the M.Ed., two graduates representing 13.3% of the graduates (7.4% of the overall survey respondents) had used their ePortfolio for employment purposes. The point being that graduates of the M.Ed. program were not considering using the ePortfolio for job purposes.

Figure 6. Would you use an ePortfolio to aid you in a job application?



Statistically, results from the survey demonstrated that the ePortfolio is not considered a useful tool for potential employers and the likelihood of being used for job application purposes, as supported from the results of graduated students from the M.Ed. program, is unlikely. Contrary to the negative implications of the ePortfolio as an employment tool, those survey participants who had graduated with M.Ed. contributed positive comments such as:

- *I think it helped develop presentation skills;*
- *I learned more about my own learning by completing it [the ePortfolio], and that the ePortfolio had been an 'enlightening experience', 'a way to solidify my ideas', a means to 'synthesize my previous learning';*

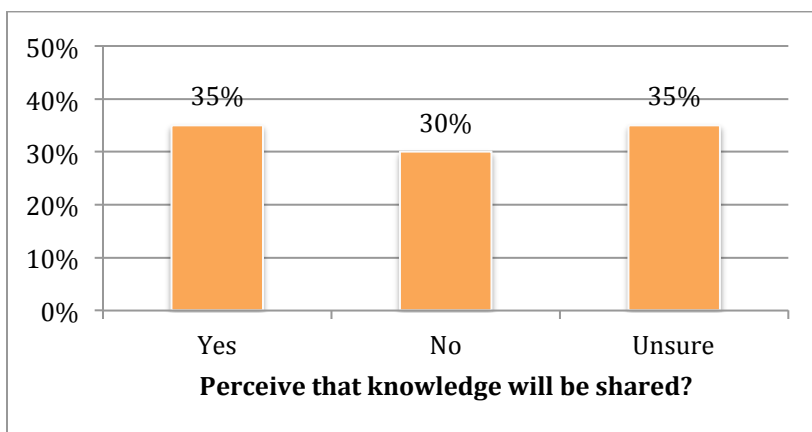
- *The reflection [component of the ePortfolio] definitely caused me to grow as an educator and as a person.*

There was a mixture of responses when the participants were asked, through the open-ended survey questions, as to which external groups (such as work, academia, other), did the participants, perceive or view the ePortfolio to be of value, the responses were as follows:

- *Unsure or none;*
- *Other students writing reflective papers;*
- *Most valuable to distance education groups;*

Knowledge gained results. The survey results revealed various challenges associated with technology and concerns about using their ePortfolio for future employers, or as a tool in gaining future employment. Positive results were associated with social, cognitive, and instructor support. One of the central research questions explored whether knowledge gained, through the reflective process of the ePortfolio, should be shared with the broader community. The results from the survey showed an even mix of *yes*, *no*, and *uncertainty* as demonstrated in Figure 7.

Figure 7. Perceptions and knowledge creation to be shared with the learning community?



From these responses, I conclude that the results relating to the sharing of knowledge gained with the broader community, provided validation of the existence of various barriers and challenges that exist with the ePortfolio process. Additional insights are provided in Chapter 5 relating to the qualitative component of the semi-structured interviewed.

<p>Table 4</p> <p><i>Examples of open-ended positive responses and responses that indicate barriers to knowledge-sharing and the ePortfolio</i></p>	
<p>Responses</p>	<p>Open-ended Responses</p>
<p>Positive responses</p>	<p><i>it [the ePortfolio] is a great way to show others what is possible</i> <i>I think everyone has something to share;</i> <i>I hope so . . . main purposes I have in completing my Master’s degree—to make contributions to the learning community;</i></p>
<p>Responses that indicate barriers</p>	<p><i>I don’t think my knowledge is of particular value to the learning community;</i> <i>I have not created new knowledge;</i> <i>. . . my own personal reflections . . .are relevant to me in my own personal situation; not generalizable;</i> <i>Sharing? meh.</i></p>
<p><i>Note:</i> Information compiled from Appendix H, Theme & Coding Table</p>	

Summary of Quantitative Information

The majority of the 27 individuals who participated in the research study through SurveyMonkey® came from the education sector. Greater than 50% of the participants had recently completed their M.Ed. Many of the participants had considered undertaking a thesis for their M.Ed. but found there were triggers or influencing factors that swayed the participants towards the ePortfolio. Some of the triggers pertained to various

roadblocks such as lack of time, skills challenges, perception of the thesis being more work, and lack of funding. Positive influences towards pursuing the ePortfolio were perceptions of a lesser time commitment, that it was easier, and a more beneficial route for the individual. The questions from the online-survey provided an option for the participants to reflect on (a) what they had learned; (b) the ePortfolio and relevance to their work; and (c) on the value and practical application of reflective practice.

Through analysis of the survey, results indicated that the majority of participants did not understand the difference between process/capstone, showcase, or process and assessment ePortfolio and the majority of participants did not have an understanding of the meaning of the ePortfolio that was to be developed. This finding warrants the university administration and instructors clarify the definition of the ‘process ePortfolio’ and the expectations for the ePortfolio. Evidence found there was uncertainty from the research participant’s responses in their understanding of what is a process ePortfolio.

Through further analysis of the survey results, I determined that the majority of individuals working on, or having completed the M.Ed., felt they were unbiased and could be open when working on the reflective components of the artefacts. I determined there were less than half (<50%) of the participants who understood the concept of ‘*what is critical reflection?*’ This uncertainty about reflection, is not uncommon, and as noted by Moon, (2001) “some will simply ‘take to it’, understanding its role in their learning and managing the process well. (Moon, 2001, p. 9), but reflection has a role in the deeper approaches to learning” (p. 6). From the results of the research survey, I determined many of the participants did not understand the concept of reflection or critical reflection.

The component of critical reflection and the ePortfolio is one of the main focuses associated with the central research questions. The participants' environment, cognition, social, teacher, and technology aspects were explored as these related to identifying strengths, weaknesses within each of these areas, and reflective practices. There were positive results for the social and teacher elements, and uncertainty at times relating to their environment. Exposure of the participants to the technology was positive, but barriers were noted of frustration, lack of creativity and flexibility, and a need for technology improvements.

The other central research questions in this study explored if the participants acknowledged that knowledge gained should be shared with the broader community and if the participants accepted the ePortfolio as being beneficial for securing employment. The majority of participants perceived that the ePortfolio would not be beneficial to securing employment. From the survey results I concluded that the majority of participants would not use an ePortfolio to aid them in a job application: a large amount of participants were *unsure*. There was an even mix of *yes*, *no*, and *uncertainty* as to whether knowledge created by the participants through the ePortfolio, should be shared with the broader community.

Results between the qualitative and quantitative results will be triangulated in Chapter 5 to determine if the semi-structured interview information validates the online survey results. Reviewing the results from both research methods will allow me to crosscheck results for consistency and look at data from more than one perspective. The goal of this process is to present research results that are more comprehensive in their interpretation

Chapter 5 – Qualitative Research Results and Analysis

Introduction

This chapter presents the qualitative components of the research from the analysis of the 27 open-ended survey comments obtained through SurveyMonkey® as well as from the nine semi-structured interviews undertaken via Skype™. The addition of the semi-structured interviews adds a complexity to analyzing the overall qualitative component of the research, but also provides deeper insights into the comments of the research participants and validates, in many instances, the results of the open-ended survey results. There were nine semi-structured interviews undertaken over a two-month period. Each qualitative component is analyzed separately and begins with the open-ended survey results followed by the analysis of the semi-structured interviews completed via Skype™. The quantitative analysis is eventually interwoven into the overall results combining both quantitative and qualitative data analysis. A quick overview of the steps taken in the analysis of the open-ended survey results is provided followed by more in-depth analysis on how each code and theme was chosen. The various themes are then discussed as they relate to the central research questions. Steps taken in the analysis of the open-ended survey results include:

1. I read through the open-ended survey results several times;
2. I created a table in Word referred to as the ‘Coded Transcripts’ (working papers).

This table included:

- a. The question number from SurveyMonkey®, the survey tool;

- b. The survey question;
 - c. The SPSS number assigned by SPSS for cross- reference purposes of the data;
 - d. The assigned code name for the participants (security for the individual);
 - e. Group number of the individual (identifies that the participants' working industry is education, health, government, or other);
 - f. The participants' responses (copied and pasted from SPSS to Word);
 - g. Codes eventually assigned.
3. I identified the participants' responses with a reference number. For example: a reference of 2-4 (in Appendix H) refers to Question #2 from the survey and Participant #4. The cross-referencing of phrases becomes helpful once the codes are defined and examples of survey responses are provided (Appendix H);
4. I identified significant phrases from the participant's open-ended responses. These phrases were highlighted for ease of reference. Codes were determined and then assigned (Appendix H);
5. I reflected on the various codes to determine if there were any inter-relationships between the different codes;
6. I identified themes (categories) as a result of the analysis, based on the inter-relationships of the codes. Within the themes that evolved, sub-themes (subcategories) were identified, and codes assigned to each of the sub-themes. I reviewed the codes for frequency within the coded transcript document and

assigned the codes to the various sub-themes that had been created (Appendix E and F);

7. I arranged the codes alphabetically and defined them within each sub-theme (Appendix F). Information provided in Appendix H is:
 - a. The code (label);
 - b. Definition;
 - c. Flags;
 - d. Qualifications;
 - e. Transcript reference;
 - f. And example(s) from the participants' survey comments.
8. I reviewed the themes to determine if there was a connection between the various themes. I then discussed how codes were interrelated to create each theme;
9. I created diagrams to provide a quick and easy-to-read visual display of the relationship(s) between the codes (Figures 1 & 2). The diagrams were to be used as a visual aid to myself and for the reader;
10. I incorporated the quantitative results to determine if there was any statistical information that might provide additional insights to the research (e.g., majority of similar responses, or lack of similarity in responses);
11. I addressed significant findings from the research and suggestions for future research in Chapter 6.

Open-ended Survey Analysis and Discussion

Before beginning the process of analyzing results from the open-ended survey results, I took some time to reflect on my role and recognized how important it was to incorporate bracketing (Vagle et al, 2009), and bridling (Dahlberg, 2006) into the review, analysis, and eventual triangulation of quantitative with qualitative information.

Triangulation is often used in mixed methods research as a means to provide an in-depth understanding of a given theory or phenomenon (Burton & Obel, 2011; Singleton & Straits, 1999 as cited in Turner, Cardinal, & Burton, 2015, p. 1, Denzin, 2012, p. 82). In this thesis, the phenomenon is the meaningful learning that is gained through the creation of an ePortfolio that is submitted as evidence of knowledge gained by students in the Master of Education (M.Ed.) program. Upon completion of the M.Ed., the student may decide to share their ePortfolio with the broader community. A critique of triangulation is recognizing that “different findings are likely to emerge . . . and that any individual is likely to interpret data and write research accounts in very different ways” (Seale, 1999 as cited in Spicer, 2012, p. 484). In the organizational sciences discipline, experts have found limited direction in how to design mixed methods research. They have also found triangulation to be very time-consuming work and have identified a need to obtain researcher expertise across different methodological areas (Turner, Cardinal, & Burton, 2015, p. 2). Historically, there are “proponents of the incompatibility and incommensurability theses that qualitative and quantitative methods rest on different paradigm assumption and hence cannot be easily combined” (Denzin, 2012, p. 82). I experienced some of these challenges and often found it very time consuming and difficult to combine information from each research method. At times, the information was like the combining of oil and water: it just didn’t work. For the oil and water to come

together, an emulsifier was needed to help stabilize the combination. My personal goal was not just to experience each research method, but to be able to find a pragmatic means to triangulate the information in a clear, informative, and well laid-out manner that would identify significant findings (if I found them). I was the necessary emulsifier needed to bring the results of the varying research methods together: persistence was the key. I also recognized the importance to be able to step back, as the picture of the results took form, and to know when I should step-in to make changes or address problems.

I recognized that it was essential for me through the analysis process to know when to incorporate my own metacognitive information, values, and beliefs, so that data was not over-generalized, details were not lost, or information misrepresented by not having a full understanding of the data. An example of a picture that challenges the concepts of bracketing and bridling is: three individuals are watching three horses and perceive that the horses are idyllically eating side-by-side in a field of tall grass and clover. The first person, having no knowledge of horses, enjoys watching the grazing and perceives that the horses are enjoying their meal (bracketing). The second person sees the same three horses eating grass, but notices that one of the horses is swishing its tail more than usual (bugs?), the other horse is pinning back its ears (as a warning to the others to stay away), and the third horse seeing the pinned ears of its partner tightens his muscles in readiness to flee from its small herd (bracketing). A third person sees the horses eating their lunch, but knows that the horses are in an area where noxious (poisonous) plants exist and observes an open gate (horses have escaped!). The other field that the horses moved from was overgrazed, the open gate provided an opportunity for food, and there is a strong likelihood that the horses could bring harm to themselves

as a result of eating these plants. Some of the plants are especially harmful to the pregnant mare and her unborn foal (tall fescue is noted in the field and is dangerous to pregnant mares). The field is also full of clover (alsike clover) consequently the field is covered in bees which can become a bother to the horses resulting in bee or wasp stings; the alsike clover is also harmful to the horses as compared to other clovers. The third person, steps into the field using her wisdom, experiences, and beliefs to know that the picture of the idyllic horses is not one of calm, but requires her to take action using the best tools available to her (bridling). This is an example of how a researcher with experience in the subject matter may see different outcomes from those of the casual observer. Through reflexivity, the researcher incorporates bracketing and bridling, understands when it is necessary to step in (triangulate) and is able to paint an honest and open picture for the reader.

I found the analysis process of coding and examining of survey results took time and was tedious work. Eventually, the identifying of codes, themes, frequency of codes, and defining of codes and themes was completed. As I reviewed, analyzed, re-assessed, and re-analyzed the data in searching for clues and meanings within the participants' responses, I was continually comparing the findings and observations against reality in an attempt to determine its validity and reliability.

How codes were chosen. The information from the participants was constructed using an open coding system which involved a set of instructions or rules describing how to observe and record content from text, and is tailored to the type of text (Newman, 2011, p. 363). A challenge is to convert the information into precise, objective,

quantitative data using manifest coding which involves counting the number of times a phrase or word appears in a written text or latent coding which looks for underlying and implicit meaning in the content of a text (Neuman, 2011, p. 364, 365). Using both methods may strengthen the final analysis. Likely having additional students in the study, (greater than 27), may have provided for better analysis and validity of the results.

I read through the materials several times to get an idea of the flow of information from and between the participants. Having taken various M.Ed. courses, I now have an inventory of words and concepts in my head that I am able to pull from and utilize. I recognized and acknowledged the importance of my mind needing to be empty of preconceptions (concept of reflexivity). I was able to step back, utilize the inventory of words from my own database (memory) founded on my understanding and perceptions of the various written survey responses. I compiled the information provided by each survey participant into a Master table. I read the survey answers through again, but this time the responses were associated with each question of the survey. I remembered to not attempt to overanalyze the words but to assemble the data into new ways (axial coding) and determine if interrelationships existed. The axial codes consist of causal conditions (factors causing the phenomenon), contextual and intervening (broad or specific situational influencing factors), strategies (actions taken), and consequences (outcomes using the strategies) (Creswell, 2007, p. 64, p. 171). This was challenging as the responses varied greatly. As individuals are distinctive; no one thought between individuals are the same. At times, a picture began to evolve, faded, and then took form once again. Through selective coding, propositions or themes were identified that would describe relationships between the various codes.

With the first draft of codes, I did not attempt to overanalyze the words but simply wrote them out recognizing there would be changes over time. Over many days and weeks, of re-reading the survey responses, codes were fine-tuned. In some instances, there were codes that I perceived as having similar meaning, (e.g., change and metamorphosis), and had to determine if in fact they were different or if they were different degrees of the word. Through the development of the analysis, in some instances, I found a code evolved because of another code, but might not be a reciprocal code (e.g., reflection can evolve to critical analysis, but critical analysis does not evolve to reflection). For those few codes created, I again reviewed and reflected on the various codes to determine if they should be deleted or combined with another code. Often the singular code remained, and even though the code could have been deleted because of its limited use, the code remained as I thought the code might provide additional insight into the participants' responses. For example: in the 'barrier' category, the codes of *demotivating*, *censorship*, and *inexperienced* remained, and in the 'personal makeup' category, the codes of *active learner* and *explorer* remained. It was only after I had finalized all of my codes that I reviewed the list of codes produced. I discovered in reading and re-reading the survey responses that codes continually evolved within the participant's response.

The challenge was then to define each code and provide examples, so the reader would understand the codes. Even though I felt some codes should have sub-codes, these were identified within the definition of the code. Once the code list was finalized, the themes were determined. Strauss and Corbin (1998) continue to develop a conditional matrix as a coding device to help the researcher make connections between the macro and

micro conditioning influencing the phenomenon (Creswell, 2006) while Charmaz places more emphasis on the views, values, beliefs, feelings, and ideologies of individuals than on the methods (p. 65). Coding or memoing still occurs, but Charmaz recognizes the role of the researcher in the process. As the researcher, I became very curious to analyze the frequency of the codes, to determine if there were relationships between codes, whether the codes were fairly and realistically chosen, and whether I would be able to credibly interpret the data based on the chosen codes.

Through the second stage of coding, core themes became apparent and only the most pertinent passages from the participants were used and coded. The process of coding ceases when the point of saturation occurs, “one keeps on collecting data until one receives only already known statements” (Selden, 2005, p. 124, cited in Jones & Alony, 2011, p. 108). I reviewed and revisited each line of information to determine if data should be transferred to another code or revisited as to its meaning (Appendix E and H). The process of determining the theme where each code should reside now began (Appendix E). Through the coding process, 243 codes were identified and reduced to seven themes to conceptualize causal relationships; a more succinct picture then emerged. Over time, codes were deleted, added, moved and combined with other codes; the process of coding ever evolving as a picture began to form. Glaser & Holton refer to these as, “theoretical codes giving integrative scope, broad pictures, and a new perspective” (2004, p. 9, cited in Jones & Alony, 2011, p. 108). The challenge was to paint a picture that fairly represented the comments of the survey participants.

Determining the themes for the codes. The compiling and categorizing of codes is a thoughtful and challenging process where through my reflection, critical analysis and

the use of personal constructs, I attempted to qualify the survey comments and paint a picture that was credible. The assigned codes may move from one category to another and may also crossover to different themes. Codes were reviewed numerous times to determine if they should be changed, added, or deleted. The complexity of the codes within the themes demonstrated the complexity of the process as well as the complexity of the comments from the research participants. Themes were divided into sub-themes where applicable. The themes chosen and to be discussed are:

- Barriers, internal and external;
- Tools for success;
- People for success;
- Personal makeup (personality characteristics);
- Building the constructs, and
- Positive outcomes.

Sub-themes were also identified. Example: the three sub-themes for the ‘Barriers’ theme are:

- Internal (feelings, of being);
- Has control over; external (little to no control over);
- Barriers to practical application; subthemes varied between themes.

Figure 8 (page 144) provides a visual representation of the various themes consisting of perceived barriers (constraints), personal makeup, tools for success, people for success, building the constructs, and positive outcomes. Within the various themes,

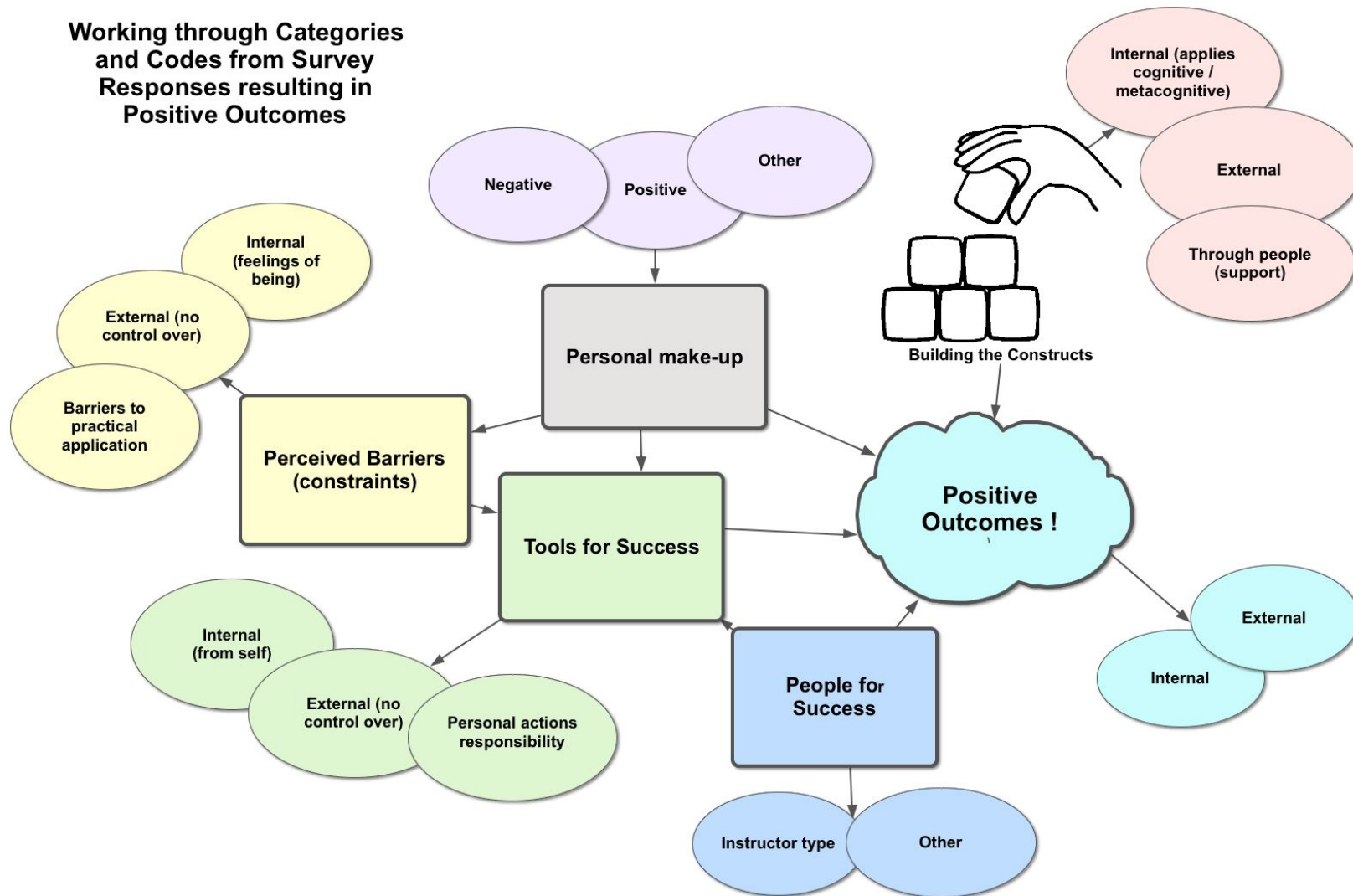
sub-themes are identified that consist of the numerous codes that are identified through the analysis of the survey comments.

Discussion of the Themes from the Open-ended Questions

The participants from the survey were graduate students who agreed to partake in a survey related to exploring the process ePortfolio at a western Canadian university. Participants came from a variety of industries; education, healthcare, government, and the military. There did not appear to be a relationship between the work-industry of the participants and the survey results. I did not consider gender and age to be important variables as the focus of the study related to graduate students irrespective of their gender or age, therefore this information was not collected. Within the online survey, it was difficult to determine if the home/work environment of the participants influenced their written comments. The environment can have a positive or negative impact on the participant's responses; this was taken into consideration. For example, the environment may be comfortable and conducive to encourage thoughtful responses or there may be outside distractions, such as lack of privacy or noise. The codes and themes assigned represent a fair and credible assessment of the survey based on the information provided. Spicer (2012, p. 482) suggests that "all research whether quantitative or qualitative tends to be an iterative (repetitive) process" which is confirmed by Hammersley in that "all research involves both deduction and induction in the broad sense of those terms; in all research we move from ideas to data as well as from data to ideas" (1992a: 48 as cited in Spicer, 2012, p. 482). Deductive reasoning is moving from general concepts to specifics while inductive reasoning moves from specific concepts to broader generalizations

(Trochim, 2006). The information provided by Spicer and Hammersley aligns with the analysis and discussion of the various quantitative and qualitative elements of this thesis. An additional complexity to this research is that the qualitative element has two components: 1) the open-ended survey responses, and 2) online semi-structured interviews via Skype™. Information on the themes constructed and codes identified in the interviews were substantiated from the comments gathered from the participants' open-ended responses. Each of the themes; barriers, tools for success, people for success, personal makeup (personality characteristics), building the constructs, and positive outcomes were examined to determine the relationships among the various themes. There were numerous codes assigned to each of the themes, (Appendix E) but only those codes considered to be significant (from frequency) are provided with examples (to follow), from the participants' open-ended responses. A complete set of themes and codes can be found in Appendix F & H. A discussion of the similarities between various constructed codes is also provided. A discussion of the various themes continues as follows.

Figure 8. Working through Categories and Codes from Survey Responses



Barriers internal and external. A main theme that evolved from the analysis of the open-ended survey results was internal and external barriers. Internal barriers are described as ‘feelings of being’ and ‘having little to no control over’. External barriers refer to the participants’ having little to no control over their environment or other external factors. The barriers were also broken down into a third subcategory (sub-theme) relating to ‘practical applications’ and included codes such as broader community and unsuitable or not beneficial for the real world. Barriers were identified throughout the open-ended survey comments and were evident as influencing factors in the participants’ decision-making process to pursue the ePortfolio. Barriers also existed for the participants in their perceptions of understanding critical reflection, in the attainment of knowledge, and in the participants’ perceptions of challenges in having the ePortfolio accepted by the broader community. The following provides information on significant codes found within the barrier theme along with examples from the open-ended survey results.

Table 5		
<i>The theme of 'Barriers' associated significant codes, and examples.</i>		
Barriers	Significant Codes	Example
Internal barriers	Disappointment	<i>It was not what I wanted out of my degree program;</i>
	Frustration	<i>I find Mahara non-intuitive and impossible to design;</i>
	Perceptions	<i>Sometimes - We are a victim of "dysfunction" in our institution); I am not sure that my personal reflections can be much of a guide for anyone.</i>
	Doubt	<i>Why would they [employers] think a student assignment was of any value;</i>
	Possibility of failure (or feelings of)	<i>I was unable to successfully complete artefacts without the advisors assistance;</i>
External barriers	Challenges	<i>I cannot say that I felt able to openly express challenges or concerns;</i>
	Technology	<i>. . . as I had difficulties with Mahara;</i>
	Difficulties	<i>I am still struggling with this [ePortfolio];</i>
	Need for change	<i>. . . as this was not explained to us during our course;</i>
	Improvements	<i>Response time is slow, currently attributed to many students using the system;</i>
	Need for support (lack of)	<i>Obviously I can't decide which artefacts demonstrate the greatest learning;</i>
Practical application	Broader community (constraints or values)	<i>I would *not* share the eportfolio that I developed with a potential employer;</i>
	Lack of skills	<i>. . . because I felt so inexperienced;</i>
	Unsuitable or not beneficial for the real world	<i>. . .the reflection makes it unsuitable;</i>
<i>Note: Information compiled from Appendix H, Theme & Coding Table</i>		

Tools for success. Participants revealed various tools for success that were necessary to help break down barriers. The theme of ‘tools for success’ was identified as having three sub-categories including ‘internal’ (from self, a quality or feeling), ‘external’ (having no control over), and ‘personal actions’ involving taking responsibility. Key external tools for success included ease of use as it related to technology (easy for editing or navigating), and functionality including being accessible, availability and measurement of tools, having options, positive features, being straight forward and multipurpose, sharing of information, and user friendly. Technology is another tool for success, as it is a physical or conceptual tool and implies a means or method of attaining an end. Other external tools for success included: the instructor who helped to facilitate, mentor, and guide the individual through the learning process, implying that the instructor could have positive influences on students. The sub-theme of ‘personal actions of responsibility’ implies activities that help to create a positive outcome and form part of our individual constructs, such as involvement in decision-making. Interaction with others, including peers and instructors, implies a greater understanding by the participant in their ability to communicate within various course discussions and could be viewed as a tool to break down barriers.

Table 6		
<i>The theme of 'Tools for Success' associated significant codes, and examples.</i>		
Tools for Success	Significant Codes	Example
Internal (from self, a quality or feeling)	Certainty	<i>Yes, I had a very open communication with the instructor;</i>
	Openness	<i>He was good at listening to and accommodating out-of-the-box thinking;</i>
	Recognition	<i>The ones [artefacts] I remember having the most impact on my learning;</i>
	Reflection (reflective)	<i>The reflection required definitely caused me to grow as an educator and as a person;</i>
	Resolve	<i>. . . and so I had to self-censor my comments;</i>
External tools for success	Technology	<ul style="list-style-type: none"> • Easy for editing or navigating; • Functionality including being accessible; • Availability of tools and measurement tools; • Having options and positive features; • Being straight forward and multipurpose • Reader friendly.
	Instructor	<i>The majority of the instructors in this program were EXCELLENT!</i>
Personal actions of responsibility	Having experiences	<i>It's pretty difficult to complete a course (let alone a programme) without having experiences upon which to reflect;</i>
	Interaction of others	<i>. . . that is to say that we learned from each other.</i>
<p><i>Note:</i> This information is a compilation from Appendix E, Theme, Code, and Frequency Table and Appendix H, Theme & Coding Table where themes and codes are identified, definitions, flags, qualifications, and identifying line from the Coded Transcript are provided.</p>		

People for success. The theme, ‘people for success’ was broken into two sub-themes being ‘instructor type’ and ‘other’. Instructor types included facilitator, coach, subject matter expert, guide, and mentor and referred to the positive and supportive role of the instructor in a given course. These individuals assist in breaking down barriers relating to challenges in understanding critical reflection and frustrations with technology. The ‘people for success’ theme helps to guide and mentor the participants so that the five digital artefacts, contained within the ePortfolio, include and demonstrate the core competencies required of the M.Ed. program.

Table 7		
<i>The theme of ‘People for Success’ associated significant codes, and examples.</i>		
People for Success	Significant Codes	Examples
Instructor	<ul style="list-style-type: none"> • Facilitator • Coach • Subject matter expert (SME) • Mentor 	<p><i>[he/she] provided excellent guidance and was great teacher/facilitator.</i></p> <p><i>I think the instructor’s role was to be the steering wheel in our journey of learning. I think that [he/she] fulfilled the functions sufficiently</i></p>
Other	<ul style="list-style-type: none"> • Peers • IT support • SME administrator 	No comments provided.
<p><i>Note:</i> This information is a compilation from Appendix E, Theme, Code, and Frequency Table and Appendix H, Theme & Coding Table where themes and codes are identified, definitions; flags, qualifications, and identifying line from the Coded Transcript are provided.</p>		

Personal makeup. The theme of ‘personal makeup’ is considered significant as the composition or makeup of the individual (personality characteristics) helps to form

the person or identity. Attributes, traits, behaviors, and qualities, vary from individual to individual and helps to determine who we are and how we see and interact with the world. The theme of personal-makeup is subcategorized by ‘positive’, ‘negative’, or ‘other’, (emphasis, emotional statements, or questioning tones). Negative codes are often associated with, and may contribute to, forming barriers for the individual. Motivation, personal constructs, and the act of sharing of self, are considered to be positive attributes of the individual and may help to break down barriers. These same codes can be used as forms of encouragement when used as ‘tools for success’ (a theme) by the participants.

Motivation allows the individual to be empowered, while constructs are experiences, knowledge or skills that add to our own person. Individuals have their own skills and knowledge based on personal learning, life experiences, learning from others, and their environment. All of these codes contribute to the individuals’ current knowledge base and helps to form their constructs. Sharing, as a positive internal trait, is the act of giving of self, contributing, and sharing of one’s thoughts or learnings. Other traits that help to form the individual’s personal make-up are indicators of emotion, emphasis, questions (thoughtfulness) or what the individual deems or perceives to be personal. Emphasis and emotion are usually identified by emphasis on words, e.g., capitalizing or the use of characters. The use of emphasizing characters did not necessarily indicate positive or negative traits of the individual, but provided me with insights as to the emotional thoughts of the individual. The ‘personal make-up’ theme can contribute to creating barriers or breaking down these barriers, helping to form ‘tools for success’ (another theme).

Table 8		
<i>The theme of 'Personal Makeup' (individual) associated significant, codes and examples.</i>		
Personal Makeup (individual)	Significant Codes	Examples
Negative	<ul style="list-style-type: none"> • Lack of resolve • Lack of understanding • Indifference • Bias • Anger 	<p><i>My values, beliefs, and thoughts are none of the business of the instructors;</i></p> <p><i>I felt I was beyond my comprehension;</i></p> <p><i>. . .however, personally I had a difficult time openly expressing my challenges or concerns;</i></p>
Positive	Motivation	<i>. . . because that's one of the main purposes I have in completing my Master's degree --to make contributions to the learning community;</i>
	Personal constructs	<i>I can be open, share my values, beliefs, thoughts, and whether an artefact was based on evidence or conjecture;</i>
	Sharing	<i>. . . one of the biggest impacts have stemmed from forum activities and what was contributed and shared by the community within these activities;</i>
Other traits	Emphasis and emotion	<p><i>. . . which truly should begin with your FIRST course in the program - not at the end of the journey;</i></p> <p><i>I would *not* share the eportfolio;</i></p>
	Personal and private	<i>I would not voluntarily review and comment on other peoples portfolios.</i>
<p><i>Note:</i> This information is a compilation from Appendix E, Theme, Code, and Frequency Table and Appendix H, Theme & Coding Table where themes and codes are identified, definitions; flags, qualifications, and identifying line from the Coded Transcript are provided.</p>		

Building the constructs. Each construct, whether it is intrinsic or extrinsic, is a building block that adds to our overall knowledge base and person. Brookfield (1995)

posits, “in a very important sense we construct our experience: how we sense and interpret what happens to us and to the world around us is a function of structures of understanding and perceptual filters that are so culturally embedded that we are scarcely aware of their existence or operation” (p 4). I propose that our knowledge is formed in a similar manner. Constructs are the pieces of knowledge and skills gained from experiences (e.g., achievements, change, critical thinking). There is a fine line of distinction for many of the constructs, as they can also be identified as tools used for success and may also be considered as barriers. Some of the constraints noted (e.g., change, perceptions), are viewed as positive and help to build upon the individual’s constructs. Participants in the survey attain knowledge and become successful by breaking down barriers, recognizing intrinsic traits or skills (tools for success), and undertake positive practices. Sub-themes for building the constructs include: internal (application of cognitive and metacognitive functions), external, and through people (support). The support from people theme included significant codes of community and social perspective. Important codes for building the constructs from an internal perspective included achievements, competencies, critical analysis, critical reflection, critical thinking, crucial skillsets, need for change, perceptions, reflection, skillsets (new, increase, change in) and crucial components, (a thought, a tool, or emphasis). Important external constructs are direction and delivery, which are identified as the process or manner in which the individual achieved the constructs, methods, timing of research competencies, timing of the ePortfolio, and tools for success consisting of artefacts, creations, courses, and assignments.

Table 9		
<i>The theme of 'Building the Constructs' associated significant codes, and examples.</i>		
Building the Constructs	Significant Codes	Examples
Internal constructs	Achievements	<i>It was a really good experience to look at what I had done over these years and look at the friends I made and the projects that I completed;</i>
	Competencies	<i>The process of review and reflection on specific outcomes (competencies) allowed threads of cognitive gain or cognitive dissonance to surface.</i>
	Critical analysis	<i>The process reinforces what you know you know! It assists in a critical thought process of capturing, articulating and demonstrating relevant experiences and knowledge;</i>
	Crucial skillset	<i>The hardest is actually being able to critically reflect;</i>
	Need for change	<i>The current process relied on a trial-and-error process whereby folks created a document, waited to discover how it missed the mark and then tried again, based on comments from the instructor;</i>
External constructs	<ul style="list-style-type: none"> • Direction and delivery; • Timing of the ePortfolio; • Tools for success. 	
Support (through people)	Community	<i>. . . and look at the friends I made;</i>
	Social Perspective	<i>I enjoyed feeling part of a learning community.</i>
<p><i>Note:</i> This information is a compilation from Appendix E, Theme, Code, and Frequency Table and Appendix H, Theme & Coding Table where themes and codes are identified, definitions; flags, qualifications, and identifying line from the Coded Transcript are provided.</p>		

Positive outcomes. From the analysis of the open-ended survey comments, and through various tools for success (intrinsic and extrinsic) along with people for success, I discovered individuals are able to break down various types of barriers and begin to build individual constructs. The ‘personal makeup’ of the individual is important in overcoming barriers and being able to identify those tools that may be important in their journey of learning. The end results are positive outcomes both internal and external. External positive outcome codes are: indicators of accomplishment, such as a Master of Education degree, assignments or courses completed, or positive feedback. The ‘indicators of accomplishment’ are positive outcomes that add to the cognitive and metacognitive growth of the individual that are then used to help the individual progress to the next step in a personal goal. The ‘compilation of knowledge indicators’ implies a collection of elements consisting of indicators of knowledge gained, resulting in feelings of success for the individual.

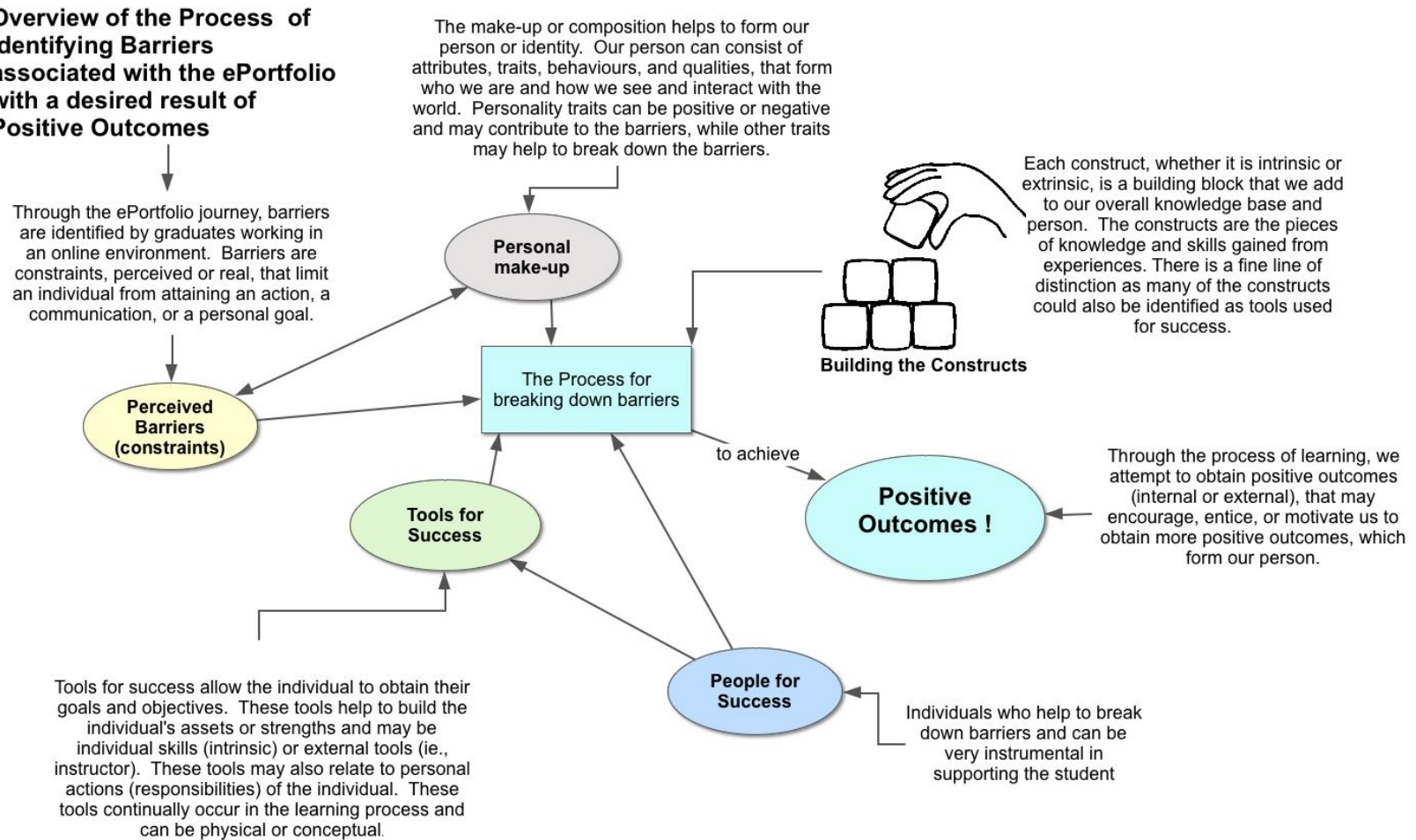
Knowledge gained, as it relates to the ePortfolio, a specific course, or degree, may imply that knowledge gained (real or perceived) can result in scaffolding of information to other areas of life resulting in further personal growth. The resulting deep and meaningful learning is the continuing process of learning that does not cease, after new information or knowledge is obtained, but continues as we learn new things every day of our life whether it be accidental, with intention, informally or formally. Knowledge gained, by the participants, was explored further in the semi-structured interviews.

Table 10		
<i>The theme of 'Positive Outcomes', associated significant codes, and examples.</i>		
Positive Outcomes	Significant Codes	Examples
Internal positive outcomes	Achievements	<i>Meaningfulness to me and my learning within the program - and cross-reference to the competencies;</i>
	Awareness	<i>So that they [students] can better understand some of the challenges and rewards of being a MDDE student and better visualize the path they may end up on;</i>
	Cognition	<i>For 2 of the 5 artefacts I felt that I was drawing on an insight that I achieved from that course</i>
	Competence	<i>. . .that I had learned a great deal, and could apply my learning to real life examples within my career and education;</i>
	Deep and meaningful learning	<i>. . . not only gave many opportunities to reflect on what was being learned but also to put it into practice in a relevant way;</i>
	Empowerment	<i>The reflection required definitely caused me to grow as an educator and as a person;</i>
	Personal growth	<i>I really enjoyed the program, I grew a lot;</i>
	Recognition	<i>It helped to solidify my beliefs of teaching and learning and build an identity as a distance educator;</i>
	Knowledge gained	<i>. . . that I have completed the program is a true success and being able to apply/transfer the knowledge and skills I have learned through this program within my organization;</i>
External positive outcomes	Indicators of accomplishment	<ul style="list-style-type: none"> • Master degree; • Assignments and courses completed; • Positive feedback.
<p><i>Note:</i> This information is a compilation from Appendix E, Theme, Code, and Frequency Table and Appendix H, Theme & Coding Table where themes and codes are identified, definitions; flags, qualifications, and identifying line from the Coded Transcript are provided.</p>		

Figure 9 (page 157) provides an overview and visual representation of the themes involved in the process of identifying barriers associated with the ePortfolio and the desired results being to achieve positive outcomes for the individual. The process for breaking down barriers involves identifying the personal make-up of the individual, and tools and people needed for success. These themes are the building blocks that help to build the constructs used to contribute to the individual's overall knowledge base. Through the process of breaking down the initial barriers, learning is achieved and positive outcomes are achieved. The positive outcomes may encourage, entice, or motivate individuals to obtain more positive outcomes, and break down more barriers, that continue to form our person.

Figure 9. Overview of the Process of Identifying Barriers Associated with the ePortfolio with a Desired Result of Positive Outcome

Overview of the Process of identifying Barriers associated with the ePortfolio with a desired result of Positive Outcomes



Similarities of construct codes. The codes of reflection and critical reflection may appear to be the same, however, I propose they are somewhat different. Reflection refers to thinking about something and then commenting from a personal perspective. Thought can (sometimes) cross over or develop into critical analysis or critical reflection. Reflection is a thought process that we may be aware of (or not) and allows the individual to think through a process, a communication, determine its meaning and may be prefaced by comments of, “*I feel . . .*”, or “*I believe . . .*”, where critical reflection takes the reflective process a step further as the individual, based on experiences, is able to recognize, analyze, and provide explanations for how they evaluated their experience. Whether the experience is positive or negative, the individual is able to learn, as a result of the critical reflective process and respond accordingly.

Critical thinking implies in-depth learning and meaning as a result of an experience. Reflection, as proposed by Mezirow (1990), is used “to examine the justification for one’s beliefs ... and to reassess the efficacy of the strategies and procedures used in problem solving” (p. xvi as cited in Colley, Bilics, Lerch, 2012, p. 1). Moon, (2008), suggests that critical thinking is “a capacity to work with complex ideas whereby a person can make effective provision of evidence to justify a reasonable judgment. The evidence, and therefore the judgment, will pay appropriate attention to context” (p. 96). Individuals reflect on their activities and thoughts, then step back and ask themselves difficult and challenging questions; the purpose is to achieve growth and gain knowledge over time, and to understand and learn about themselves. An example of critical reflection was:

- *Mahara works reasonably well, but the problem is not the technology, it is learning how to reflectively write.*

I view critical reflection (experiential) as being different from critical thinking, (logical thinking); implications are that the ability to critically think is important in utilizing cognitive and metacognitive processes for gaining knowledge as exemplified:

- *Yes, but there are always biases. The best one can do is to understand their biases and try to reflect on how they influenced the learning.*

Critical thinking, from my perspective, is very similar to critical analysis and implies a greater understanding within a given context:

- *The process reinforces what you know you know! It assists in a critical thought process of capturing, articulating and demonstrating relevant experiences and knowledge.*

As illustrated below, many of the participants in the survey (41.6%), noted that they did not have a grasp or understanding of critical reflection or were unsure of what critical reflection meant as indicated by:

- *As a teacher, reflection plays a very large part of my educational classroom. I should have done more of it through the process of this portfolio but ultimately I just wanted to get finished;*
- *I am still struggling with this [ePortfolio] as I finish my artefact write-ups. The experiences that were most relevant don't always result in 'checking off the box' next to the competency required;*
- *This carried on into my e-portfolio, which allowed me to use the critical thinking skills to revisit my earlier course and justify not what I had learned, but whether I had learned.*

Central research questions and positive outcomes. The research questions relating to the ePortfolio and the component of critical reflection were explored deeper to determine, if knowledge had been gained by the participants in the creation of the ePortfolio, and whether the sharing of said knowledge would be perceived to be accepted by the broader community. The broader community consisted of the students' peers, current, or future employers, educational community, and the academic community,

where the individual demonstrated concretely how knowledge had been gained through a variety of competencies. This implies that the ePortfolio has a role in the broader community depending on the positive outcomes of the individual's experience with the ePortfolio. The assumption is that 'knowledge belongs to all' and that "knowledge must be shared with others" (Neuman, 2011, p. 14). One of the survey participants noted:

- *. . . because that's one of the main purposes I have in completing my Master's degree -- to make contributions to the learning community.*

Another participant noted a positive outcome being a desire to share:

- *I always wanted to share my increased knowledge with a broader community*

The implication is that knowledge gained is eventually transferred to the real world where there are opportunities, career advancement, or increased application of a given skillset or knowledge in the real world as demonstrated by:

- *Simply knowing that I have completed the program is a true success and being able to apply/transfer the knowledge and skills I have learned through this program within my organization, [is a success].*

It was difficult to identify which of the positive outcome codes (internal or external) were most important to the survey participant, whether it was a combination of outcomes, or a single goal. From the frequency table of codes, and themes (Appendix E), the 'internal positive outcome' with the greatest frequency, was knowledge gained and the 'external positive outcome' was real world (application, opportunities, and career assistance). The implication of the latter is that achievement of knowledge should be transferrable to the real world.

Semi-structured Interviews – the Process

I documented the information from the semi-structured interviews after the open-ended survey results were analyzed and my findings explored and reflected upon. My focus turned to the next qualitative component of the research being the analysis and discussion of the semi-structured interviews.

All interviewees were asked the same set of initial questions. The questions were created as a result of my review and analysis of the open-ended survey comments. Some additional questions were posed to specific participants; these questions varied between individuals as no-two open-ended survey comments were identical. A quick overview of the steps taken, in the analysis of the semi-structured interviews, is provided followed by a discussion and analysis of the responses. The interview questions support for the individual (technology and related support), and critical reflection are explored further. A summary is then provided on knowledge construction and the scaffolding of this knowledge to life situations.

1. I contacted the participants by email to determine if they would like to participate in a semi-structured interview via Skype™ at their convenience;
2. I compiled a script that was reviewed numerous times to ensure my focus related to exploring the central research questions (critical reflection, knowledge gained, and sharing of said knowledge with the broader community);
3. I read the same script and asked the same questions to all interviewees. I had identified in advance of the interview that there were specific questions to be asked to some interviewees based on their individual responses. These additional questions

were asked to further explore or clarify information that related to the central research questions. During the interview, if there was uncertainty about something the interviewee was saying, then I took the opportunity to ask additional questions. The interviews were audio recorded.

4. I made typed notes at the same time as the interview;
5. I identified each interviewee with a name-code. The date and time of the interview was noted;
6. I transcribed the semi-structured interviews and verified the typed notes against the audio recording taken at the time of each interview;
7. I highlighted significant phrases within the interviewees' response (for ease of identification of the statements and subsequent analysis for myself).

Discussion and Analysis of the Semi-structured Responses

All nine participants in the semi-structured interview were asked the same questions (Appendix G). Some of the participants were asked additional questions related to the open-ended survey questions that required a further response or additional information. The questions asked were sorted by name-code (to keep the individual's name private), included the question, a number was assigned to each interviewee's response, and the interviewee's response to the question was provided in italics (for ease of reading). I transcribed this information from the audio recording for each of the nine participants. The typed notes from the interview helped validate the transcribed information. I didn't contact any of the interviewees for a second interview; the

information provided was sufficient and satisfactory. I initiated an analysis across responses to the semi-structured interview questions to determine if there were similarities in the responses to the various questions asked in the interview. Only two questions were not fully answered by two interviewees. Upon review, there were no similarities to their responses. My impressions of the verbal-tone from the recorded responses varied from positive to indifference, and frustration, and validated my typed notes from the semi-structured interviews.

I identified a few new insights to the transcribed responses. A participant, (Edu-1), was asked about the meaning of ‘reformulate’, as it related to Edu-1’s use as a response to critical reflection from the online survey. I found the explanation interesting, as Edu-1 explained:

- *When I was doing an assignment, . . . specific requirements for assignments, it wouldn’t require to do a summary of what I learned in general, but would be specific [transcribed grammar corrected], so when I put it [the reflection] into the EP, I had to reconsider everything from a broader perspective from what I used during the assignment.*

This same individual further commented on the relevance of the ePortfolio to the broader community:

- *I was able to see how the reflection in the ePortfolio would apply to larger research projects and to the larger community.*

These comments provided an example of critical reflection and the need for the individual to be able to ‘step-back’ by taking a broader perspective on both the assignment and the use of critical reflection with the larger community.

At times during the semi-structured interview, the conversation would ebb and flow often leading to specific follow-up questions; as is allowed and encouraged through the use of semi-structured interview technique. I discovered that the semi-structured interviews allowed me to gain a deeper level of understanding of the answers to the open-ended survey questions. There were pauses in the various conversations with “ahhh, hmm, um” as indications of reflection, time to think, or personal quirks in the participants’ conversational tones. Being able to see the individuals online (via Skype™) was an advantage for me as I was able to see smiles, questioning expressions, see the thinking expressions, and hear laughing. I was surprised that there were no indications of anger tones. I had previously read comments that displayed signs of frustration and anger. At times, there was an exclamation such as “OMG!” and more laughing providing indications of comfort by the participant in sharing of their information.

There were times when the technology (internet or Skype™) did not cooperate with the semi-structured online interview. At those times, the phone was used in combination with Skype™ for the audio portion of the interview and was completed in a phone-to-phone conversation. Phone interface was a challenge as digital phones often cut in-and-out as one person speaks and another listens. A lack of visual access via Skype™ made typing of transcripts more difficult for me as I could not see the individual’s lips move in-time with their words. The majority of interviews were in a quiet, uninterrupted space at the participant’s location other than obstacles experienced from two interviewees’ environment; one being Mother Nature (the wind) and the other being the voices of children at home (active and loud). The interviews were not video recorded, only audio recorded.

Interview questions. Each of the participants were asked “*how long ago did you get your Master degree?*” I asked this question to determine if there were additional barriers for the participants in obtaining the M.Ed. Of the nine semi-structured interviews through Skype™, two individuals had not yet obtained their M.Ed. The time to complete for these individuals ranged from one year to nine years. It appears the norm for completion of the degree is approximately three years. During that time, barriers noted were change in advisor, lack of communication with new advisor, change in ePortfolio completion rules in 2016, work commitments, lack of time, expense of the courses, single working parent with children, and change from ePortfolio route to thesis. The majority of the barriers appeared to be out of the control of the individual (external).

The questions focused on critical reflection and the ePortfolio, the choosing of the artefacts for the ePortfolio, resolving any associated dilemmas, and scaffolding of knowledge construction (transfer of information/skills) relating to critical reflection. Questions also focused on suggested improvements that they (the participants) might have to the ePortfolio process. Responses for improving the ePortfolio process included expansion of guidance or support for the technical aspects of learning Mahara, knowledgeable and skilled people support for the ePortfolio (technology), improvements for sharing the ePortfolio with the broader community, and work to improve perceptions by students of knowledge sharing, as a result of the ePortfolio experience. The conversations were not coded, but I undertook an in-depth review with each participant, to determine if there was a relationship to previous open-ended survey responses relating to critical reflection, knowledge gained, and sharing of such knowledge with the broader community. The semi-structured interviews expressed the participants’ thoughts,

provided for a 'deep' rather than 'surface' approach to investigating, and reinforced previous findings from the open-ended survey responses.

Support for the individual (technology and related support). Of the nine interviewees, 88.9% felt they had the necessary guidance or support for the technical aspects of learning Mahara. This question varied slightly from the open-ended survey responses, where participants were asked whether they viewed the technology as user-friendly. From a user-friendly perspective, 66.7% thought the technology was satisfactory with 29.2% being unsure. It should be noted that technologies used for creation of the ePortfolio were Mahara, Moodle, Weebly, Wikispaces, Wix, Word Press, and one cloud-based platform, with Mahara being the platform that most students used (50%), followed by Wix at 14.7%. There were barriers (Table 3) noted associated with the technology, including elements of frustration, lack of creativity, lack of flexibility, and need for improvement.

In the M.Ed. program, at least one course in technology is compulsory and that two areas of competency in the M.Ed. reside in technology, therefore students are expected to be able to learn, manage and problem-solve technology by themselves. The challenge for students is that they may not be aware of this expectation going into the ePortfolio process. In a longitudinal three-year study by Gerbic, Lewis, and Northover, it was discovered that the greatest challenges to the ePortfolio were being able to use the technology. From 80 students (83%), the main barriers referred to "understanding what the software did, navigating it, creating views, and the time involved in using it" (2009, p. 329). On review of Brown's (2000, p. 26), 'time triangle' where, in the beginning of learning new technology, more time is spent learning and working through the

technology, whereas later as the student becomes more familiar, the individual then spends more time on the subject matter as they have ‘mastered the process’. New learners represent the large base of the triangle (heavy learning curve), whereas veteran or students who are more along in the program represent the point of the triangle. The base with the large part of the triangle moving towards the point of the triangle demonstrates the growth of students over time. This ‘time triangle’ can be applied to the technical aspects of the ePortfolio as experienced by these participants. As the student becomes more familiar with the technology, I propose students spend more time on collecting, analyzing, and reflecting on their artefacts that would be included in the ePortfolio. The ‘time triangle’ may help to explain the positive comments from the interviewees (majority being M.Ed. graduates). When support or guidance relating to the technology is received, I deduced participants have mastered their technology challenges as indicated by:

- *I felt comfortable enough to resolve the process on my own with patience and time, (Edu-15);*
- *The professor was awesome and, which I think was another advantage of the course, because she was totally focused on it, (Edu-7);*
- *The IT persons didn’t really know how to use it [Mahara] themselves . . . like attachments, I’m going to have to go to therapy, like OMG that was so onerous (laughing)! (Edu-7)*
- *From a technical point of view, I think there was a lot of support although I never used it, (Edu-1).*

This interviewee, who is an educational technologist, enjoyed the flexibility of use in Mahara, but recognized the value of other platforms and commented,

- *. . . if they [M.Ed. cohorts] are comfortable with Preziie [sic] , then they don’t have to learn anything new, - - - they can focus more on the ePortfolio rather than the technology.*

I concluded the ePortfolio technology platform is viewed as a material external barrier, (Tables 3 & 5) being the heavy base of the triangle, as there is little to no control by individuals over the platform (how it works). I identified that there is a need for a support component to the technical aspects of learning Mahara. The technology and support components also help to build the constructs and may provide positive outcomes (empowerment, knowledge gained, personal growth, success, and achievement). ECAR proposes, “support staff (information technologists, instructional designer) need to be trained to handle different types of problems and requests” (2009, p. 8). This is apparent from my research based on the varying platforms that the individuals are privy to using. Comments from interviewees relating to their perceptions of teacher, instructor, or other support were very similar to the comments from the online survey. There was positive feedback about support relating to the ePortfolio journey as demonstrated by:

- *I got some good feedback from my instructors, and I always got responses to my emails and had actually some good conversation about what I was writing and about the ePortfolio process, (Edu-3) ;*
- *[she] was the go-to- person – absolute support . . . if she wasn't there, I wouldn't have completed it, or I wouldn't have the motivation to complete it . . . she was always there listening (Edu-14).*
- Edu-14 apprised the success of the professor was in her approach where, “*the feedback wouldn't tell you what was wrong, she kind of eluded to what was wrong*”.

In that sense, interviewees were able to return to the ePortfolio, locate the area to be changed and reflect on the proposed changes by the Professor. There were also comments about frustration with the support for the ePortfolio. Interviewee Edu-15 felt there was support from peers, technical support, instructor support, but did not feel there was advisor support as it related to the change to the new ePortfolio course. Another interviewee commented:

- *I think the teachers were confused, I was confused - - I hope they do figure it out and get involved with the user (Edu-6);*
- *there was a lot of support in 'how to' for the ePortfolio, but there was a lack of support after you kind of put yourself out there and published your ePortfolio, and wouldn't get a lot of responses - - - I wasn't sure how to increase that [the support]. (Edu-1).*

Edu-12 spoke of working away at the ePortfolio and then presenting when ready, but there were external challenges imposed to complete the ePortfolio by a given time. The new ePortfolio course (CePP) began the fall of 2016, and Edu-12 complimented the new course:

- *I think that move to making the portfolio a course is ahhh - - it was necessary move, not just in terms of legitimizing the ePortfolio project, but also in supporting the students in what they need (Edu-12);*

Any barriers of lack of communication, frustration, doubt, uncertainty (real or implied) were eliminated as:

- *I got feedback within 48 hours and there was always someone checking it [the ePortfolio] out - - saying look at this, try to do, do this, and so - - that having it as a class, definitely gave me support I needed" (Edu-12).*

By incorporating 'tools for success' such as: openness, recognition, reflection, certainty, and a perception of support for the student, positive outcomes of satisfaction, empowerment, and success were recognized.

Critical reflection. A main focus of the research asks participants about their understanding of, and the importance of critical reflection and its use in the ePortfolio. This query correlates to knowledge creation and the sharing of such knowledge with the broader community. I concluded that there was uncertainty from the participants as to the meaning of critical reflection, and how to apply it as determined from the online survey and semi-structured interview responses. Moon, (2001) proposes that "reflection

has a role in the deeper approaches to learning” (p. 6) and, with critical reflection, the learner is aware that the same actions and events may be seen in different contexts with difference explanations associated with the contexts (p. 13). Mezirow contends, “Critical reflection involves a critique of the presuppositions (assumptions) on which our beliefs have been built” (Mezirow, 1990, p. 1) and is generally used as a synonym for higher-order mental processes (worldview)” (p. 5). Reflection as a conscious action is often used as a means to assess our beliefs and values, and involves taking action as a result of this thoughtful process. Critical reflection is reflection on our assumptions, concerned with the “whys” (the reasons), and implies an element of evaluation (critique) of those assumptions (beliefs and values). Awareness of our assumptions (presuppositions), results in our ability to challenge our beliefs, actions, communications, or our expectations that help form our meaning perspectives (if we so choose). Mezirow also proposes that, “to make ‘*meaning*’ means to make sense of an experience, we make an interpretation of it” (1990, p. 1). It may be very challenging to be able to critically reflect, on an artefact that is to be incorporated into the ePortfolio, if a student does not understand the concept of critical reflection or how to apply it. Smyth simplifies the concept of critical reflection associated with teacher education by characterizing four sequential stages linked to the questions of “(a) describing (What do I do?), (b) informing (What does this mean?), (c) confronting (How did I come to be like this?), and (d) reconstructing (How might I do things differently?)” (1989, p. 2). It is not important that the subjects (interviewees) are not teachers (in some cases) but that they are required to critically reflect on artefacts to be incorporated in their ePortfolio and may be asking themselves the same questions that Smyth refers to. Smyth’s questions align with

Mezirow's concepts for the need of the individuals' presuppositions (beliefs and values), experiences and interpretation (meaning), and taking action as a result of this thoughtful process (artefact incorporation into the ePortfolio). I agree with the idea of applying critical reflection to an artefact and follows Schon's (1983) proposition of shifting from 'problem solving' for the individual to 'problem setting'. This means to move from "a rational process of choosing from among possibilities that best suit agreed-upon ends" (as cited in Smyth, 1989, p. 3), to questioning, challenging, or debating with oneself as to why that particular artefact is important to the ePortfolio and how it demonstrates various competencies associated with the individual.

As previously noted in Chapter 4, only 58.3% (14/24) of the survey participants had an understanding of critical reflection relating artefacts or works that demonstrated their greatest level of learning, with 20.8% being *unsure* and 20.8% responded with *no* as to their understanding of critical reflection. When asked if their environment and prior experiences impeded their ability to critically reflect, 45.8% responded with *no* and 41.7% as *sometimes* or *unsure* (Figure 4). The open-ended survey comments and semi-structured interviews both affirmed the uncertainties associated with understanding critical reflection by the research participants.

The form of the research allowed me to explore the interviewees understanding of critical reflection from a different perspective with the result being the participants did not believe they would have had the necessary skills and understanding of critical reflection as a new student to the M.Ed. program. All of the interviewees felt that incorporating elements or components of the ePortfolio, into the M.Ed. earlier in the program, would be of value. Examples are expressed as:

- *A lot of reflection. . . helps to have it earlier;*
- *If they [the university], could incorporate an aspect of the ePortfolio that would be great.*

For some interviewees in the M.Ed. program, much time had passed, and as one interviewee noted:

- *For somebody who takes 4 or 5 years, thinking back to what happened for first classes is often difficult . . . the more we think about doing things the more memory invents details and creates a coherent story that doesn't necessarily reflect what actually happened (Edu-3).*
- *I definitely did not understand the ePortfolio well enough to have the skills necessary to do the critical reflection element . . . I couldn't come up with the decisions I made as to why (Edu-12);*
- *I might have had the skills to do critical reflection but I might not have known how to apply it (Edu-1).*

These comments and statistics from the interviewees align with the overall feeling that critical reflection is not clearly understood and that many have challenges in knowing how to apply critical reflection to artefacts within the ePortfolio. These uncertainties, make it difficult for students to achieve the competency requirements in the M.Ed. program. Whipp (2003), proposed that “critiquing and reframing problems within broader sociopolitical and moral perspectives”, and “taking action that is informed by such reframing” (p. 322) provides for insight on the application of critical reflection. Hatton and Smith (1995) suggest that dialogic reflection must occur prior to critical reflection being incorporated by the individual. The use of dialogic reflection is proposed to be complex as individuals “step back from events, weighing various perspectives in an effort to analyze the reasons behind situations” (Whipp, 2003, p. 324). I do not know whether the M.Ed. graduate interviewees ‘reframed’ their artefacts from a broader sociopolitical stance, or whether the element of critical reflection and associated

challenges were weighed, analyzed, and reframed so that action would eventually be taken.

When I asked the interviewees, “*do you see advantages to developing the portfolio earlier in the program? And why?*”: the majority of the results were *yes!* One interviewee implied that the work would not be so onerous at the end of the program (Edu-7). Another interviewee viewed having access to the ePortfolio at the beginning of the M.Ed. program would provide more opportunities for students, and through these experiences and connections, students would be able to:

- *Extrapolate or expand on those connections* (Edu-15);
- *There is so much thought that goes into the ePortfolio . . . the earlier that you are exposed to the idea of what you need to be doing, the better you will be prepared to do that* (Edu-1).

Calderhead (1989) proposes that the term ‘critical reflection’ may mean “no more than constructive self-criticism of one’s actions with a view to improvement” (as cited in Hatton and Smith, 1995, p. 35). I would propose that solutions, in resolving challenges and understandings associated with critical reflection and the ePortfolio, requires graduate students to be open and willing to critically reflect upon their own meaning perspectives. Students may need to take action to resolve areas of ambiguity within their perspective (lifeworld), be able to articulate and communicate freely within a safe environment, and to have support that is timely. Without tools and individual strengths (e.g. technology, communications skills, reflective skills), and depth of experiences, individuals recognize there is a problem, but do not have the skillset to resolve the dilemma. Future research suggestions will be summarized in Chapter 6.

Summary: Knowledge Construction and Scaffolding to Life Situations

Abrami and Barrett (2005, cited in Athabasca (2014a) noted, “ePortfolios have been found to scaffold attempts at knowledge construction”, meaning there can be a transfer of information and/or skills to the workplace or the individual’s lifeworld. The interviewees were each asked, “*Have you found situations where the component of critical reflection is of assistance so that you are able to apply skills learned (such as reflective practice) to your own work or life situations? Please provide examples*”. This question was asked as it related to critical reflection, the process ePortfolio and knowledge construction, (central research questions). The majority of the interviewees (88.9% or 8/9) found value in learning critical reflection and applying the information to their work or life situations, even though the quantitative statistics gathered were contrary to these findings. As one interviewee noted:

- *Reflection was done . . . The ePortfolio was extremely valuable for that*” (Mil-2).

Another interviewee found that knowledge was transferred to situations in the workplace with program evaluation and the challenges of cognitive load process and impact on learning. Edu-15 discovered that:

- *After careful evaluation of the audience as a whole and their pressures, I was able to find potential conclusions . . . that was the most meaningful because I had to dig deep within myself to do as much research as possible when learners are not doing well and use info from the course, to address the problems and potential solutions for it* (Edu-15).

Others, such as Edu-3, discovered the learning of mind maps to be of great value and commented:

- *How do I keep all this stuff in my head? . . . so I started using some of the things that I read in my textbooks and mind maps started to be a powerful tool for me* (Edu-3).

Edu-15 continues to use journaling to help develop personal goals for the next 5-10 years.

Interviewee Edu-12 described having:

- *A different box of toolboxes to draw on now, in that reflection process (Edu-12).*

Edu-12's ePortfolio included reflections relating to work and also to home life (a teenager with challenges):

- *I could critically think about what they [the school] were trying to do instead of emotionally consider what was happening with my kid (Edu-12).*

Another interviewee, (Edu-1) had a difficult time with interviews, but with studying and exercising of critical reflection, discovered that the interview process improved,

- *. . . both improve your performance and improve your work experience (Edu-1).*

Edu-14 commented that:

- *Reflective practice - - well it does allow me to focus on an experience and to perhaps find a better way of handling a situation;*

But Edu-14 noted that narrative pedagogy might have more value to the process ePortfolio, as:

- *I don't want to slam the ePortfolio, but I'm just wondering who the market is? - - - really tough time trying to gage who the audience is - - coz I personally wouldn't read it - - my own stuff (Edu-14).*

One of the central research questions queries whether knowledge is gained through the reflective process of the ePortfolio and if this knowledge should be shared with the learning community. The results from the quantitative survey were 35% *yes*, 30% *no*, and 35% as being *unsure*. As can be seen from the participants' responses above, the verbal responses provided a much clearer and deeper understanding of the

value of learning to critically reflect, the knowledge gain, and personal growth that could occur.

In Chapter 2, a review of literature was undertaken on varying aspects of knowledge including acquired knowledge, self-knowledge, cognitive and metacognitive mental processes, where “knowledge is both created and integrated with existing knowledge” (Anderson & Dron, 2011, p. 85). Acquirable knowledge refers to that understanding, skill, or cognition, which is obtained through the completion of various courses in the M.Ed. degree, where information is learned, and critically reflected upon by students through the journey of the ePortfolio. Self-knowledge included an awareness and understanding of one’s own capabilities, attributes, or abilities, and was then incorporated into the cognitive processes as a means to acquire new knowledge.

Through the process of study, research, analysis, reflection, and communication, deep and meaningful learning was attained where new materials and/or concepts were internalized through critical reflection. Deep learning, as characterized by Rourke and Kanuka, “is the critical examination of new facts and the effort to make numerous connections with existing knowledge” (2009, p. 24). Garrison, Anderson, & Archer, asserted that “reflection was the heart of the thinking process but was framed by a perplexing and confused situation initially and a unified or resolved situation at the close” (2000, p. 91). The examples of how the interviewees perceived the use of critical reflection for their benefit (knowledge gain) personally or in their work place is well-documented even though one interviewee questions:

- “*Who the market is? . . . I personally wouldn’t read it [the ePortfolio]* (Edu-14);

Perhaps the insights of Borg & Davis (2012, p. 6) reveal the purpose of knowledge where, “the university was to become a factory for the creation of new knowledge” (p. 6) . . . “with the dissertation as a contribution to knowledge - - to a body of knowledge shared with a potentially worldwide community” (p. 13). My understanding is that knowledge is to be shared with all, and can be obtained through scholarly resources such as peer-reviewed journals, articles, conferences, courses, media, and includes online sharing of ideas through community such as Facebook, YouTube, and other internet resources. The works of knowledge in the written word have been shared through many different types of vessels such as books, journals, and online communications. The interviewees acknowledge knowledge transfer of critical reflection to their personal and work life, but appear to question whether the ePortfolio can or should be shared with the broader community:

- *Yeah, its of no value to the broader community - - its very specific to particular artefacts which are completely irrelevant to the community (Edu-14);*
- *. . . but in the course of actually working, always working by myself, it never really felt [like] building knowledge with the community or sharing knowledge within the community (Edu-3).*

These comments align with the transfer of information results where it was determined that the ePortfolio would not be beneficial to the securing of employment as 54.2% responded with *no* and 66.7% of participants would not use the ePortfolio to aid them in a job application.

- *skeptical with employers - - I kind of don't want it all out there . . . if I am going to keep mine [the ePortfolio], have to be more reflective, not a great idea to show an employer. It is an interesting question, and the ePortfolio is going to have to deal with that (Edu-6).*

I would propose the university administration and instructors recognize and promote the students as being the vessels of knowledge for sharing of knowledge through scholarly writings within the walls and spatial halls (the internet). I would also propose that it is the individual who is the container of knowledge that will eventually be shared within their lifeworld through their words and actions. I support the concepts through Sullivan's law of 'form ever follows function' (1896):

"Where function does not change, form does not change. . . . It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human and all things superhuman, of all true manifestations of the head, of the heart, of the soul, that the life is recognizable in its expression, **that form ever follows function.** *This is the law*" (Sullivan, 1896, p. 408).

In my example, the 'person' is the vessel or container (the function) of all that is known and that 'knowledge' is the form. Similar to Sullivan (1896), the expression or manifestation of the sharing of such knowledge consciously or unconsciously by the person changes the function of the person. I acknowledge that the ePortfolio is a container of reflections and artifacts, but there are uncertainties. I deduced from the combined data results (quantitative and qualitative), that the ePortfolio may be viewed as a container of knowledge, but these containers are not effectively being shared with the broader community. I would propose that it is the student or M.Ed. graduate who will champion the sharing of knowledge; these individuals should be promoted as such by the university.

In Chapter 4, quantitative data of the open-ended survey results were analyzed. In Chapter 5 the qualitative opened-ended survey results were analyzed and compared to the semi-structured interview information. Some statistical information was incorporated in Chapter 5 to validate the open-ended survey results and the semi-structured interviews. A

discussion on support (technical and people) was expanded upon as these elements can create barriers for the student in achieving their goals as the students' focus may be taken away from important materials to be learned. Students obtain a deeper understanding of themselves and their environment through critical reflection and their experiences when knowledge is constructed, and scaffolded (transferred) to life situations as needed.

Critical reflection was determined to be very important to the individual (participant) throughout their Master program. I would propose that critical reflection should not be viewed as a means (tool) to be used in the creating of the ePortfolio, but should become a part of the student's overarching understanding in the gaining of knowledge applied to all aspects of their lifeworld.

This last section attempted to triangulate the quantitative and qualitative research results and paint a clear picture of the challenges and successes in the participants understanding of critical reflection, of knowledge gained, and concerns with sharing of knowledge with the broader community. The significance of this research and implications for future research as a result of the discussion and analysis will be discussed in Chapter 6.

Chapter 6 – Significance, Implications, and Future Research Suggestions

Significant Findings and Implications

This research explored how graduate students perceived their ability to resolve challenges and critically reflect on the processes, objectives, and goals involved in the creation of a process ePortfolio within an online environment. I also studied how M.Ed. students were able to effectively identify and translate their experiences into meaningful learning, reflect upon acquired knowledge, and how students used or perceived the utilization of that knowledge within their own environment.

This Chapter speaks to the significant findings from the research results that I have determined, resulting implications, and further research recommendations.

The research process. Through the use of the concurrent mixed methods research approach, I was able to collect varying forms of data, (quantitative and qualitative), integrate my findings (triangulate), and interpret the overall results. The triangulation process allowed for a look at the data from more than one perspective, therefore, the results of the research became more comprehensive in their interpretation. I discovered that the analysis of the qualitative component, involving the semi-structured interviews, added richness to my overall research interpretations, and dispelled certain understandings of the survey results that I had previously determined. I had decided the mixed methods research approach best allowed for each method to maintain its independence in the type of data and information provided. I brought together (triangulated), the quantitative and qualitative research methods by incorporating

reflexivity, with patience, and personal resolve. The varying research methods coordinated to bridge results and form a composite view of the data.

The quantitative research component provided the statistical component and pointed to potential areas of concern. The open-ended survey results opened the doors to greater understanding of the statistical information and allowed for categorizing (themes) and coding of survey responses. However, the results from the open-ended survey did not provide the candor and openness that I later discovered through examining of the semi-structured online interviews. I determined that the information from the semi-structured interviews validated and reinforced the findings identified from the open-ended survey results. The interviewees provided their insights on the ePortfolio process as well as suggestions for improvement to the ePortfolio process. I was able to connect the central research questions to critical reflection (in general, and specific to the ePortfolio), knowledge transfer, and use of the ePortfolio to the broader community.

I have identified significant findings and resulting implications as a result of the research, including suggestions for improvement for the university administration. Findings relating to the university administration include (a) to provide more timely and consistent support for the researcher during the research process; (b) to identify the triggers associated with the decision to pursue the ePortfolio experienced by the participants earlier in the M.Ed. program; and (c) to review the communication of information and general understanding, or lack thereof, by students relating to critical reflection (graduate students and graduates of M.Ed.). My findings involving the central research questions identified a 'need-to-address' (a) incorporating the ePortfolio earlier in the M.Ed. program; (b) improving the technology resources to students relating to the

ePortfolio by providing timely and effective support by knowledgeable support staff; (c) examining the concept that the ePortfolio is a ‘container of knowledge’, rather than the individual holding the knowledge that is to be shared; and (d) determining if the ePortfolio is of value to the broader community. Future research suggestions are then provided based on the significant findings and their implications.

Table 11 provides a high-level summary overview of the mixed-methods research analysis, the central research questions, and other research findings that will provide additional insights for participants working on their ePortfolio.

Central Research Question	Quantitative results	Qualitative Results		Summary Results
		Open-ended Survey	Semi-structured interviews	
Trigger or influencing factors that swayed you towards the ePortfolio route?	Yes (89%)	Yes	Not discussed	Yes
Through critical reflection, are you able to discern what artefact or which work demonstrates the greatest level of learning?	Yes (58.3%)	Uncertainty	Uncertainty	Uncertainty
Did the environment and prior experiences impede your ability to critically reflect?	Yes or unsure (54.2%)	Uncertainty	Yes	Uncertainty
Is the technology viewed as being user-friendly?	Satisfactory (66.7%)	Barriers experienced	Barriers experienced	Yes, but qualified with barriers
Was the teacher (instructor) supportive?	Yes	Yes	Yes	Yes
Use of critical reflection within the ePortfolio	No	Uncertainty	Yes	Overall uncertainty
Do you believe the ePortfolio would be beneficial to securing employment?	No (54.2%)	No	No	No
Have you used an ePortfolio to aid you in a job application?	No (67%)	No	No	No
Perceive that you will have created knowledge that should be shared with the learning community?	Mixed response (35%, 30%, 35%)	Mixed response	No	No, but qualified with mixed response

The findings (general or relating to the research questions) relate to the following subjects, are recapped, and implications from these findings are provided:

- Need for support for the research process by administration;

- Triggers in deciding upon the ePortfolio route;
- Communication of information to students;
- Barriers;
- Understanding of critical reflection;
- Feedback on the ePortfolio: introduction of, support, and instruction;
- Technology;
- Knowledge sharing;
- Use of the ePortfolio in the broader community;

Support for the research process by administration. Out of a population of 525 emails sent to current M.Ed. students or graduates, only 27 responses (5% sampling) were received. A limitation that I recognized was that there was no way for me to confirm that the intended audience received the ‘Request to Participate ‘or’ Reminder emails. It is unknown as to how many emails were undeliverable, whether the degree designation name had changed over time (potential participants to the research were not captured), or if the database for M.Ed. students and graduates had been archived, inadvertently missing potential research participants.

A return of 5% of emailed responses received placed doubt in my mind, as to whether all applicable graduate students or graduated M.Ed. students were captured. A positive result from the minimal replies that I received, was that I viewed the 27 responses as manageable to analyze, but I continue to question if other university researchers had similar concerns to me with the size of their own research population. As a result, I was unable determine if the sample of 27/525 in my research was representative of the population.

Triggers in deciding upon the ePortfolio route. The majority of the survey participants, (89%) indicated there were various triggers or influencing factors in determining the point at which graduate students decided upon the ePortfolio as a means to obtain the M.Ed. degree. I determined that students chose the ePortfolio as a route for completing the M.Ed. for varying reasons including (a) there were too many challenges associated with pursuing the thesis, (b) that participants perceived the ePortfolio to be an easier, quicker, and more beneficial means to complete the M.Ed., and (c) that the ePortfolio was a valuable reflective tool. Table 2 (p. 106) in **Chapter 5**, provides a good overview of the varying triggers and influences.

Implications from my findings are that many of the M.Ed. students would pursue the thesis, but do not because of various roadblocks and challenges. The ePortfolio has positive connotations for the student (time, less frustrations, end goal of a M.Ed. is achieved).

Communication of information to students. From my analysis of various results from the mixed-methods research, I determined that communication of various principles or topics studied should be improved between the centre in which the M.Ed. students studied and the graduate students in the degree program, (Figure 3, p. 114). Improvements consist of all forms of communication including verbal, written, Internet, course materials, university guidelines, policies, and expected competencies. I found that the communication by the M.Ed. process on defining a ‘process’ ePortfolio is not well understood by students. For example, how to complete or work through (choosing artefacts) the ePortfolio is not well understood. The university has a mandate for graduates to create a process/capstone ePortfolio incorporating and applying various

competencies, yet results from the survey showed that 93% of the survey participants did not know the difference between a process/capstone, showcase, or assessment portfolio (Chapter 4, pg 112). The university strongly recommends that the development of the process ePortfolio begins early in the students' program to take advantage of the benefits of long-term cognitive and skill development (Athabasca, 2014b) yet I determined that practical applications early in the M.Ed. program are limited and that many students did not know the type of ePortfolio they were to create. These results imply that the various competencies to be achieved for M.Ed. students are not fully understood.

Implications from my findings are that improvements should be made in communicating information about the process ePortfolio in an effort to dispel any misunderstandings that may confuse or frustrate the student. I also identified that the component of critical reflection and the practical work in the ePortfolio journey should be included into the M.Ed. earlier in the student's program (Chapter 5, 169).

Barriers. I identified that the majority of barriers that students face, during their time in the M.Ed. program, are external and out of their control. These barriers are often associated with ineffective communications. I determined that the time taken for graduates to obtain their M.Ed. varied from one to nine years, based on a variety of reasons. External barriers previously discussed in Chapter 5 such as work commitments, or single working parent with children, are not the responsibility of CDE, but proactive efforts to address student situations would help to reduce or eliminate unnecessary frustrations or expectations for the students.

I concluded from the research data that ineffective (or lacking) communication between students and CDE creates barriers and cause student disappointment, frustration

and uncertainty. Barriers include unnecessary time consumed by students on various course or ePortfolio activities. Information as to how many graduate students drop out from the M.Ed. program based on the barriers identified in Chapter 5, (Table 5, p. 146) are unknown. Creating an environment where communication between students and CDE is open, relevant, and timely is paramount for the success of the student. Incorporating ‘tools for success’ such as openness, recognizing student concerns (eliminate or reduce barriers), providing for an informative environment, and a perception of support for the student results in ‘positive outcomes’ of satisfaction and empowerment in the real world.

Understanding of critical reflection. Of significance in my findings, was determining that there was a lack of understanding of the meaning of critical reflection along with employing said reflection by students in their work. I determined that the majority of survey participants (58.3%), had difficulties identifying the artefacts or works that demonstrated their greatest level of learning. From the findings, I also identified that students experienced uncertainty about the meaning of critical reflection and how they are to apply critical reflection.

The greatest response to whether critical reflection was understood, came from those individuals who had completed the Master degree. Through a review of the responses to this question, as well as other questions in the survey, many of the participants demonstrated critical reflective writing even though they did not perceive they had an understanding of this concept. The implications from these findings determined that there is a disconnect, for students in understanding the concept of critical reflection. For example, participants were unable to clearly explain the concept of

critical reflection; indicating a lack of understanding or the application of critical reflection.

Implications are that if a student does not understand the concept of critical reflection or how to apply it, then being able to critically reflect on an artefact, that will be included in an ePortfolio, will be challenging, overwhelming, and result in needless barriers and possible eventual withdrawal from the M.Ed. program.

From the nine semi-structured interviews, I determined that 66.7% of the individuals perceived that they would not have had the necessary skills and understanding of critical reflection as a new student to the M.Ed. program. All of the interviewees felt that incorporating elements or components of the ePortfolio earlier into the M.Ed. program would be of value. I also identified that many participants were sometimes unsure and felt that the environment and prior experiences impeded their ability to critically reflect. The majority of participants, 70.8%, felt that the various courses in the M.Ed. program provided necessary development and growth of critical thinking skills over time.

Uncertainties by students relating to critical reflection appeared to resolve over time within the M.Ed. program. Implications are that defining and introducing the concept of critical reflection should come early in the students' degree program; reinforcement of critical reflection concepts should continue throughout the program.

Feedback on the ePortfolio: introduction of, support, and instruction. The majority of the semi-structured interview participants acknowledged that there were significant advantages in developing the ePortfolio earlier in the program which would result in having (a) having a better understanding of the concept of critical reflection and

(b) critical reflection is a necessary component in critiquing various artefacts. One

interviewee noted:

- *It [the ePortfolio] just should be incorporated much earlier - - a portion of every course, [where the student] would have to submit for every course some sort of artefact (Mil-2);*
- *I can see some real positives from it [earlier in the program], because it removes a lot of burdens at the end (Edu-3);*

Edu-3 commented on the ePortfolio course:

- *Is it really a course, worth of material - - - and questions if it [the ePortfolio course] is really reflective of a graduate level course.*

A suggestion by Edu-3 was:

- *. . . spreading it out by incorporating some in all the courses and have a final course on the ePortfolio. Teach a line course such as assessment in distance education. That would provide practical exercise to go along with the theoretical study of the ePortfolio that gives you content, it gives you something substantive, it gives you the opportunity to the theory of it, and then actually referring back to the theory, content, and assessment, and how does it actually work in an online environment.*

Other comments and feedback reflected similar frustrations:

- *Because it was just reflection, reflection, reflection . . and that gets to be a little much, to be honest (Edu-3);*
- *There should be some kind of workshop, at the very beginning . . . that explains what the ePortfolio is, what the requirements are, and give people some tips and tricks, especially if you spread it out over a period of time (Edu-12);*
- *it would be worthwhile to have actual grads [doing the workshop], identifying some of the things that worked, some of the stumbling blocks they had, because there can be a huge gap in time from the beginning to the end, instead of the talking heads of faculty (Edu-12).*

Other suggestions for improvement related to:

- *Trying to get people on board, trying to get people to contribute to see the value behind it – and how you do that, I have no idea (laughing) (Edu-14);*

One interviewee (Edu-14), praised the professor:

- *She was so helpful incredible - - - (Edu-14);*

but Edu-14 also discovered that it was difficult to get others to read the ePortfolio, such as former students, to make recommendations and commented:

- *There was no involvement, nobody had their heart in it at all then one person made a comment, so I thought - - that kind of reflected on how many people really believed in the ePortfolio (Edu-14); and shared that the ePortfolio to be long winded - - but I love the flexibility.*
- *. . . there seems like nobody is reading it [the ePortfolio], is reviewing it, nobody is making comments on it - - and I'm not getting the feedback on it that you really need to make it better, and to give you ideas (Edu-1).*

And finally Edu-15 suggested an improvement of 'clarity' of instruction, as:

- *I felt I was really trying to delve in deep within, and to also to deeply evaluate - - to find an epiphany - - because there wasn't those specific instructions on how-to deeply (Edu-15).*

Implications are that critical reflection is an important and essential component needed in the creation of an ePortfolio and that combining critical reflective activities, as well as incorporating the ePortfolio at the beginning of the M.Ed. program, will resolve or eliminate many barriers for students. Having peers and instructors involved to critique the ePortfolio along the way in a timely manner would be of value. I also found that it could take years for many to complete their degree, resulting in challenges for the students in trying to remember or choosing relevant artefacts. The final ePortfolio course is important and should be "*reflective of a graduate level course*" (Edu-3). A suggestion from Edu-3 for change within the ePortfolio course that is worth considering is that theoretical findings on a chosen topic should be incorporated in the ePortfolio course. Critical reflection practices on personal experiences would continue to be incorporated into the ePortfolio. The perceived results would be positive as noted:

- *Make the capstone really round your whole education and now you have some really solid assessment skills - - ways of assessing student work that you have looked through and experienced. (Edu-3).*

Implications are that incorporating the ePortfolio earlier into the M.Ed. program would remove many barriers and provide for a deeper enriching experience for the student that would be carried forward to the real world.

Technology. The majority of survey participants thought the technology platform they chose was satisfactory. Of the nine interviewees, a high percentage felt they had the necessary guidance or support for the technical aspects of learning Mahara. In the M.Ed. program, the technology platform is considered an essential tool used to create and display various competencies of the student in the process ePortfolio. Other suggestions for improvement related to the technology such as:

- *the platform was difficult to work in, even adding social media into it was difficult (Edu-7);*

Edu-6 commented about the online support via online Adobe sessions, where:

- *The other student kind of dominated the conversation, and I sat there for 30 minutes waiting to get a word in . . . so if you are in the 4th week, talk about 4th week not 1st week [materials] (Edu-6).*

These comments align with the barriers noted earlier associated with technology. Edu-9 provided a suggestion to this end:

- *To incorporate in other courses like that video on reflective practice and what you are looking for and how to do it (Edu-9).*

Implications are that technology is an important tool in the creation of the ePortfolio, and that barriers (challenges) with the technology may cause frustration or delays in the completion of the ePortfolio. Even though there were only 29.2% of the participants not satisfied with the technology, the barriers of frustration, lack of

creativity, lack of flexibility, lack of knowledgeable and accessible support, should be investigated.

Knowledge sharing. One of the central research questions queries whether knowledge is gained through the reflective process of the ePortfolio and if this knowledge should be shared with the learning community. The results indicated overall uncertainty from the survey participants (35% “*yes*”, 30%, “*no*”, and 35% as being *unsure*). The majority of the interviewees (88.9%) found value in learning critical reflection and applying the reflective practices to their work or life situations, but did not believe they would have had the necessary skills and understanding of critical reflection as a new student to the M.Ed. program. This aligns with the suggestions for incorporating the ePortfolio earlier into the program. The responses from the interviewees indicated that there was a need for clearer and deeper understanding and the value of (a) critical reflection, (b) knowledge gain, and (c) personal growth, as they related to the ePortfolio. Examples of the interviewees’ perception in the use of critical reflection, for their benefit (knowledge gain), personally, or in their workplace, are well documented (in Chapters 4 and 5).

Implications are that graduates have a great appreciation of critical reflection and resulting knowledge gain as a result of the ePortfolio activities undertaken in the M.Ed. program. Furthermore, individuals gain knowledge by being able to utilize critical reflection within the ePortfolio activities and within their own external environment (life).

Use of the ePortfolio in the broader community. The majority of the participants, with the largest percentage being graduates, did not view the ePortfolio as being beneficial to the securing of employment. I determined that these participants (graduates), would not use the ePortfolio to aid them in a job application. Results from the survey demonstrated that the ePortfolio is not considered a useful tool for potential employers, and would not be used by the participants for the purpose of a job application (Figures 5 and 6, Chapter 4). When the interviewees were asked ‘*what kind of knowledge or increased skills do you feel you have shared with the broader community, as a result of the ePortfolio process*’, the responses were:

- *The reflection - - - that the ability to reflect goes beyond the academic (Mil-2);*
- *it [the ePortfolio] validated the work that I did over the four years . . . shared with colleagues; (Edu-7);*
- *to a circle of colleagues [graduate peers], “we vented to each other,. . . I was sharing knowledge”, (Edu-3).*

Edu-12 shared, how he/she worked through his/her own technical questions about producing a ‘rap song’ on the ePortfolio where:

- *Sharing that knowledge about how they [the students] can open up presentations without actually having to teach PowerPoint to allow students to be a little more open and express themselves has led to students becoming more creative. (Edu-12).*

These interviewees demonstrated how the knowledge gained from creating the ePortfolio had been incorporated in their life world (broader community). Other interviewees were candid with their comments:

- *I don’t believe that I shared anything, but I do plan on sharing the skills that I have learned (Edu-15);*

- *I found the ePortfolio to be a very individual activity . . . it [the ePortfolio process] never really felt like building knowledge with the community or sharing knowledge within the community (Edu-3);*
- *Skeptical with employers . . . I don't want it all out there (Edu-6).*

Another interviewee had experience with Asian cultures and didn't see the ePortfolio being used by that culture as:

- *There is a very strong public and private face in Asian cultures . . . and more specific things to a future employer - - not going to see value of that (Edu-1).*

There was a perception that the ePortfolio was of a private nature, (Edu-1) and as Edu-14 commented:

- *I didn't create anything – there was just reflection. If I wanted to create – write a book and continued, it's of no value to the broader community - - it's very specific to particular artefacts, which are completely irrelevant to the community. Those artefacts are relevant to me only. On an encouraging note, it (the ePortfolio course] had the workings of a terrible terrible online course . . . but the experience was golden for me (Edu-14).*

Implications are that the ePortfolio is a collection of artefacts created by an individual who is knowledgeable and has experience with the artefacts. The participants to the open-ended survey and the participants to the semi-structured interview questioned the practicality of sharing the ePortfolio with the broader community. From this information, I can infer that the ePortfolio is a 'tool' to expand the student's understanding and use of critical reflection. However, I identified that the participants struggled with the concept and utilization of critical reflection. Creation of the ePortfolio may go against the values and beliefs that students may hold as indicated by:

- *Perhaps ePortfolio are selfish, I don't like to be self-centered, and ePortfolio is very self-centered – totally against my character (Edu-1).*

Students may pursue the ePortfolio route as a means to “cultivate within themselves both the culture and practice of lifelong and life-wide learning” (Hoven,

2015). Students pursue the ePortfolio as the alternative, as many perceive that the barriers to undertake the thesis are too great.

Implications are that the ePortfolio is an assessment tool utilized by graduate students towards their M.Ed., the skills and knowledge obtained during their M.Ed. journey are used within their individual lifeworlds; the tool is personal and private and is viewed as not being of value to the broader community. Closing comments to me from two interviewees were:

- *I think you get the best of both worlds because you get to do the thesis, and learn about what was in the ePortfolio (laughing) (Edu-12);*
- *I think it [the ePortfolio] needs some refining . . . I'm hoping you can make some changes with this research (Edu-14).*

Future Research Suggestions

The breaking down of barriers and recognition of personal traits or skills through positive practices will allow future graduate students to attain knowledge, be confident and empowered to share their personal knowledge and skills with others in their own life world. Within design considerations for distance education, survey participants implied (subtle overtones in wording) that in order to be successful in the distance education environment, access to it should be convenient, flexible, and allow for reflection, critical analysis, and interaction with other like-minded individuals.

Significant findings and implications, specifically related to the research participants were discussed: communication of information; understanding of critical reflection; addressing the ePortfolio earlier in the program; technology and the ePortfolio (what works and what doesn't work); knowledge gained; and use of the ePortfolio in the

broader community. Suggestions for future research based on my findings from this research relating to the current M.ED. program, include the following:

- Undertaking an in-depth evaluation of the understanding and application of critical reflection between new and graduate students, (Is the concept of reflection understood by graduate students?);
- Further comparison of insights and experiences, relating to critical reflection, between ePortfolio M.Ed. students and graduates, and thesis M.Ed. students and graduates;
- Explore if barriers associated with technology, and the process ePortfolio, are specific to graduate students who are not well versed in computer technologies;
- Explore the reasons for withdrawal of graduate students from the M.Ed. and the barriers (internal or external, real or perceived) that caused the withdrawal from the M.Ed. program;
- Explore if new assessment tools have been put in place by various post secondary institutions, for graduate students in an online environment, for the practical instruction, and application of critical reflection;
- Explore if there are other assessment tools for a Master Degree through which critical reflection and knowledge gain can be evaluated?
- Undertaking an in-depth assessment of the practicality of the process ePortfolio and the broader community;
- Reviewing the implications of student privacy and the process ePortfolio as an assessment tool for graduate online learners;

- Identify the necessary skills for instructors to adequately support ePortfolio students. Identify skills required by other support individuals for introducing the process ePortfolio as an assessment tool at the onset of a Master online degree;
- Further analyze the challenges of time and the choosing of artefacts for the process ePortfolio;

Summary

Assuming changes were made to the M.Ed. program, as identified through my research, students would be aware of and understand their expectations as they create the process ePortfolio. Clear and concise communication of the associated competencies of the ePortfolio may also have been provided and explained earlier in the M.Ed. program. The component of critical reflection would thus be well defined and reinforced from the beginning of the student's program and the collection of artefacts and creation of the ePortfolio would be incorporated at the beginning of the graduate program. The end use of the ePortfolio, by the student, would be reviewed and reassessed to be a tool and promoted by the university as such. The graduate student would be recognized as the holder of knowledge, where such knowledge and skills are then shared with the broader community. As these changes may have occurred, further research would be required to determine the following:

- Further evaluation of critical reflection and the process ePortfolio through the journey of the graduate student;
- In-depth review of the type of knowledge and skills that are shared with the broader community;

- Identify barriers and successes of knowledge gained by graduate students through the use of the process ePortfolio;
- In-depth evaluation of the process ePortfolio as a learning tool for graduate students and its theoretical implications for learning within an online environment;
- Determining if collaborative activities incorporated early in the graduate student's program, relating to the ePortfolio, enhance or hinder the journey;
- Resolving of dilemmas through critical reflection.

These areas of research would be significant for the ePortfolio component of the M.Ed. in terms of providing students with greater insight into critical self-reflection and the value of an ePortfolio for synthesizing their learning across the program and relating this to their work and professional lives.

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Appendix A**CERTIFICATION OF ETHICAL APPROVAL - RENEWAL**

The Athabasca University Research Ethics Board (AUREB) has reviewed and approved the research project noted below. The AUREB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS) and Athabasca University Policy and Procedures.

Ethics File No.: 22341

Principal Investigator:

Mrs. Shirley Ternan, Graduate Student
Centre for Distance Education/Master of Education in Distance Education

Supervisor:

Dr. Debra Hoven (Supervisor)

Project Title:

Exploring the Process ePortfolio of Graduate Students in an Online Environment

Effective Date: November 6, 2017

Expiry Date: November 05, 2018

Restrictions:

Any modification or amendment to the approved research must be submitted to the AUREB for approval.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

A Project Completion (Final) Report must be submitted when the research is complete (*i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable)*) or the research is terminated.

Approved by:

Date: November 6, 2017

Joy Fraser, Chair
Athabasca University Research Ethics Board

Certification of Ethics Approval Memo

November 15, 2016

Mrs. Shirley Ternan
Centre for Distance Education\Master of Education in
Distance Education Athabasca University

File No: 22341

Expiry Date: November 14, 2017

Dear Shirley Ternan,

The Centre for Distance Education Departmental Ethics Review Committee, acting under authority of the Athabasca University Research Ethics Board to provide an expedited process of review for minimal risk student researcher projects, has re-reviewed your project, 'Exploring the Process ePortfolio of Graduate Students in an Online Environment'.

Your application has been **Approved** and this memorandum constitutes a ***Certification of Ethics Approval***. Ethical approval is valid for a period of one year and will expire on November 14, 2017.

It is noted that you require AU Institutional Permission to access university systems, staff or students to conduct your

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research project, therefore a request for institutional permission *has been initiated* on your behalf by the Research Ethics Office.

*****Participant recruitment and/or data collection *may not proceed* until this institutional permission has been granted. Information on this process will be forthcoming.*****

AUREB approval, dated November 15, 2016, is valid for one year less a day.

As you progress with the research, all requests for changes or modifications, ethics approval renewals and serious adverse event reports must be reported to the Athabasca University Research Ethics Board via the Research Portal.

To continue your proposed research beyond November 14, 2017, you must apply for renewal by completing and submitting an Ethics Renewal Request form. Failure to apply

for **annual renewal** before the expiry date of the current certification of ethics approval may result in the discontinuation of the ethics approval and formal closure of the REB ethics file. Reactivation of the project will normally require a new Application for Ethical Approval and internal and external funding administrators in the Office of Research Services will be advised that ethical approval has expired, and the REB file closed.

When your research is concluded, you must submit a Project Completion (Final) Report to close out REB approval monitoring efforts. Failure to submit the required final report may mean that a future application for ethical approval will not be reviewed by the Research Ethics Board until such time as the outstanding reporting has been submitted.

At any time, you can login to the Research Portal to monitor the workflow status of your application.

If you encounter any issues when working in the Research Portal, please contact the system administrator at research_portal@athabascau.ca.

If you have any questions about the REB review & approval process, please contact the AUREB Office at (780) 675-6718 or rebsec@athabascau.ca.

Sincerely,

Susan Moisey
Acting Chair, Centre for Distance Education Departmental Ethics
Review Committee Athabasca University Research Ethics Board

Appendix B

Survey/Questionnaire – ePortfolio participants

Table B1	
<i>Survey/questionnaire</i>	
Nbr.	Question
1.	Are you a full or part time M.Ed. graduate student?
2.	What is your current work environment (industry)?
3.	How many courses have you completed within Master of Education in Distance Education?
4.	<p>At what point in the Master Education program (M.Ed.) did you make your decision to pursue your degree via the ePortfolio?</p> <p>Please advise which best applies to you:</p> <p>a) <input type="checkbox"/> I am a M.Ed. student and have not as yet decided whether I will pursue the ePortfolio or thesis route</p> <p>b) <input type="checkbox"/> I am a M.Ed. student planning to take the MDDE610 course (Survey of Current Education Technology Applications).</p> <p>c) <input type="checkbox"/> I am a M.Ed. student currently taking the MDDE610 course (Survey of Current Education Technology Applications).</p> <p>d) <input type="checkbox"/> I am a M.Ed. student and have completed the MDDE610 course (Survey of Current Education Technology Applications) and have just begun work on my ePortfolio.</p> <p>e) <input type="checkbox"/> I am a M.Ed. student, have completed the MDDE 610 course (Survey of Current Education Technology Applications) and am in the process of working on my ePortfolio for submission.</p> <p>f) <input type="checkbox"/> I have completed my Master in Distance Education and took the MDDE 610 course (Survey of Current Education Technology Applications) as one of the courses for the ePortfolio route.</p> <p>g) <input type="checkbox"/> I have completed my Master in Distance Education, did not take MDDE 610 course (Survey of Current Education Technology Applications) and completed my degree via the ePortfolio route.</p> <p>h) <input type="checkbox"/> Other – please specify</p>
5.	Was there a ‘trigger’ or influencing factor(s) that swayed you towards the ePortfolio route? Please explain.
6.	Do you know which type of ePortfolio is required as a M.Ed. student? (Yes/No)
7.	Do you know the difference between process/capstone, showcase, or assessment portfolio? (Yes/No)
8.	If ‘Yes’, which ePortfolio do you understand (or expect) to develop for your

	<p>Master of M.Ed.?</p> <p>Process Showcase Assessment</p>
<p>9.</p>	<p>If you plan on taking MDDE 610, are currently in the course, or have taken the course:</p> <p>a) What is (was) your motivation to take the course? If you did not take the course, why not?</p> <p>b) Did you consider the thesis route? If you decided to not pursue the thesis, what were your reasons?</p>
<p>10.</p>	<p><i>“Interaction is seen as central to an educational experience and is a primary focus in the study of online learning . . .where interaction is seen as communication with the intent to influence thinking in a critical and reflective manner”</i> (Garrison & Cleveland-Innes, 2005).</p> <p>Did you perceive that the learning experience through the creation of the ePortfolio had an impact on expansion of skills, sense of self, or a perception of increased knowledge that you wanted to share with the broader community?</p> <p>Please comment. (If you are not working as yet on the ePortfolio, please comment on the critical reflection component of participation.)</p>
<p>Please complete the series of questions found within question 11, 12, or 13 depending on where you currently are within the Master program.</p>	
<p>11.</p>	<p>The following questions relate to those graduate students who have not as yet taken the MDDE 610 course, but plan to pursue their degree through the ePortfolio. (If this does not apply, please go to question #12)</p> <p><i>Simonson, Smaldino, Albright, & Zvacek, propose that, “self-reflection leading to the development of standards and the determination of criteria to use in selecting these materials are integral components of this process [the portfolio] (2012, p. 276).</i> Even though you are not at a point where you have decided on the ePortfolio route, you will have participated in various forums, and submitted assignments that would be considered artefacts that could be included with the final capstone ePortfolio. Chosen artefacts included within the ePortfolio are supposed to be significant, and must have had an impact on the learner involving an increase in skills or a change of self, resulting in deep and meaningful learning.</p> <p>a) Do you feel you have the experiences from which to draw and reflect? Please explain.</p> <p>b) Are you able to be open and without bias in sharing and examining your values, beliefs, thoughts, and examine whether an artefact is based on</p>

	<p>evidence or conjecture? Please explain.</p> <p>c) Are you able to discern which work or experiences that demonstrate the greatest level of learning through critical reflection? Please explain.</p> <p>d) Do you feel that your environment and/or prior experience impede the ability to critically reflect? Please explain.</p> <p>e) Do you perceive the learning experience through the creation of an ePortfolio will have an impact on expansion of skills, sense of self, or a perception of increased knowledge that you will want to share with the broader community? Please explain.</p> <p>f) Do you perceive that the ePortfolio would be beneficial to securing employment? Please provide explanation for your response.</p> <p>g) Would you use an ePortfolio to aid in the gaining of employment?</p> <p>Completed. Thank you for your participation!</p>
<p>12.</p>	<p>The following questions relate to those graduate students who are currently taking or have taken the MDDE 610 course and are in the process of working on their ePortfolio (but not yet graduated). (If this does not apply, please go to question #13)</p> <p><i>Garrison, Anderson, and Archer (2000) developed the “Community of Inquiry” model, which postulates that deep and meaningful learning results when there are sufficient levels of three presences, being cognitive, social, and teaching. Cognitive is where learning takes place in an environment that supports development and growth of critical thinking; social, relating to establishing a supportive and safe environment, and teaching presence where teachers design and organize learning experience, devise and implement activities, and are guides or subject matter experts (Anderson, 2008, p. 344). Keeping in mind these Community of Inquiry presences pertaining to your ePortfolio journey:</i></p> <p>a) Cognitive: Did you perceive that various courses in the M.Ed. program provided the necessary development and growth of critical thinking required to complete the ePortfolio route? Please explain.</p> <p>b) Social: Within MDDE610, was collaboration and communication encouraged and did you feel able to openly express your challenges or concerns? Please explain.</p> <p>c) Teacher: What was the role of the instructor in the MDDE610 course?</p> <p>d) Technology: Is the technology that you used (there are several options) for the ePortfolio user-friendly so that you are able to focus on your best work and subsequent reflections? Please include the options and define what platform you used. Please note what worked and what didn’t work in relation to the ePortfolio technology.</p> <p>The chosen artefacts included within the program-long version of the process</p>

	<p>ePortfolio are supposed to be significant, and must have had an impact on the learner involving an increase in skills or a change of self, resulting in deep and meaningful learning. <i>Simonson, Smaldino, Albright, & Zvacek, propose that, “self-reflection leading to the development of standards and the determination of criteria to use in selecting these materials are integral components of this process (the portfolio) (2012, p. 276). “Reflective action, understood as action predicated on a critical assessment of assumptions may also be an integral part of decision making” (Mezirow, 1990, p. 6) and “critical reflection involves a critique of the presuppositions on which our beliefs have been built” (p. 1).</i></p> <p>e) Do you feel you have the experiences from which to draw and reflect? Please comment and/or provide examples.</p> <p>f) Are you able to be open and without bias, share your values, beliefs, thoughts, and examine whether an artefact is based on evidence or conjecture? Please comment.</p> <p>g) Through critical reflection, are you able to discern what artefacts or which work demonstrates for the greatest level of learning, and how did critical reflection influence you in your choices? Please comment.</p> <p>h) Do you feel that your environment and/or prior experiences impede your ability to critically reflect? Please explain.</p> <p>i) Do you perceive that the learning experience through the creation of the ePortfolio will have an impact on expansion of skills, sense of self, or a perception of increased knowledge that you may want to share with the broader community? Please explain.</p> <p>j) What process did you use to select a given artefact to be included in the ePortfolio? Please describe.</p> <p>k) Do you believe that the ePortfolio will be beneficial to securing employment? Why? Why not?</p> <p>l) Would you use an ePortfolio to aid in the gaining of employment?</p> <p>Upon completion of the above, please go directly to Question # 11.</p>
<p>13.</p>	<p>The following questions relate to those graduate students who have completed their ePortfolio, have graduated or are in the process of submitting the ePortfolio.</p> <p><i>Garrison, Anderson, and Archer (2000) developed the “Community of Inquiry” model, which postulates that deep and meaningful learning results when there are sufficient levels of three presences, being cognitive, social, and teaching. Cognitive where learning takes place in an environment that supports development and growth of critical thinking; social, relating to establishing a supportive and safe environment, and teaching presence where teachers design and organize learning experiences, devise and implement activities, and are guides or subject matter experts (Anderson, 2008, p. 344). Keeping in mind these</i></p>

Community of Inquiry presences pertaining to your ePortfolio journey:

- a) Cognitive: Did you perceive that various courses in the M.Ed. program provided the necessary development and growth of critical thinking required to complete the ePortfolio route? Please explain.
- b) Social: Within MDDE610 was collaboration and communication encouraged and did you feel able to openly express your challenges or concerns? Please explain.
- c) Teacher: What was the role of the instructor in the MDDE610 course?
- d) Technology: Is the technology for the ePortfolio user friendly so that you are able to focus on your best works and subsequent reflections? Please note what worked and what didn't work in relation to the ePortfolio technology.

The chosen artefacts included within the ePortfolio are supposed to be significant, and must have had an impact on the learner involving an increase in skills or a change of self, resulting in deep and meaningful learning. *Simonson, Smaldino, Albright, & Zvacek, propose that, "self-reflection leading to the development of standards and the determination of criteria to use in selecting these materials are integral components of this process (the portfolio) (2012, p. 276). "Reflective action, understood as action predicated on a critical assessment of assumptions may also be an integral part of decision making" (Mezirow, 1990, p. 6) and "critical reflection involves a critique of the presuppositions on which our beliefs have been built" (p. 1).*

- e) Did you feel you had the experiences from which to draw upon and reflect? Please explain and/or provide examples.
- f) Were you able to be open and without bias share your values, beliefs, thoughts, and examine whether an artefact was based on evidence or conjecture? Please explain.
- g) Were you able to discern what demonstrates or which work demonstrated the greatest level of learning through critical reflection? Please explain.
- h) Did you feel that your environment and prior experience impede the ability to critically reflect? Please explain.
- i) Did you perceive that the learning experiences through the creation of the ePortfolio had an impact on expansion of skills, sense of self, or a perception of increased knowledge that the individual wants to share with the broader community? Please explain.
- j) What process did you use to incorporate a given artefact to be included in the ePortfolio? Please describe.
- k) Do you believe the ePortfolio would be beneficial to securing employment? Please provide explanation for your response.
- l) Have you used an ePortfolio to aid in the gaining of employment?

14.	What successes have you accomplished in working through or completing the ePortfolio? Please explain.
15.	What challenges did you experience, that if you could, you would pass on to your peers as they work towards building and presenting their ePortfolios Please explain.
16.	Through the reflective process of ePortfolio, do you perceive that you will have created knowledge that should be shared with the learning community? Why or why not?
17.	To which external groups do you perceive or view your ePortfolio as being valuable? Why?

Appendix C

Letter of Invitation to Participate
For Masters of Education in Distance Education – M.Ed. Students and/or Graduates
Deadline for Volunteering: xx/xx/xx

Ethics File # xxxxx

Date

Athabasca University
1 University Drive
Athabasca, AB
T9S 3A3

Hello,

My name is Shirley Ternan and I am a graduate student in Athabasca University's Masters of Education in Distance Education (M.Ed.) program. I am currently conducting research under the supervision of Dr. Debra Hoven, Associate Professor, Centre of Distance Education, Athabasca University, and I am inviting you to participate in my research study.

Apologies for the length of this letter of invitation to participate, but it is important to make sure you are aware of all that is involved relating to the study, the protection of your identity, confidentiality of the results, risks, and who to contact should you have any concerns.

Purpose of the Study

This letter is to invite you to participate in a study that I am conducting for my M.Ed. thesis. The following information is provided for you to decide whether you wish to participate in the present study. The expected benefit associated with your participation is the opportunity to participate in a mixed methods phenomenology study where your valuable thoughts and opinions will be kept confidential. The thesis will be made available upon completion where the results may affect or influence you or your future M.Ed. peers in your decision to pursue the ePortfolio and/or thesis route for the M.Ed. degree. There are four central research questions.

1. The first question asks, at what point in the M.Ed. program, through reflective thought, real or perceived assumptions, and/or influences was a decision made to pursue the ePortfolio?
2. The second question asks what are/were the influencing factors in your decision process?

3. The third research question extends to include the same processes (reflective thought and critical reflection), to explore whether you perceive knowledge has been attained through the creation of the ePortfolio (current stage or completed), and;
4. The fourth question asks to what extent you perceive there will be acceptance of the ePortfolio by the broader community?

For the purpose of this study, community is defined as individuals within the educational community (academics, instructors, researchers, administrators) involved in post secondary education, as well as those within the business community (current or future employers).

Voluntary Participation

You should be aware that you are free to decide not to participate or to withdraw at any time. Explanation for your withdrawal is not required or to not participate without prejudice.

To participate you need to be a graduate student of the M.Ed. program who may:

- Be planning to pursue the ePortfolio for your degree,
- Be currently working on the ePortfolio towards your degree,
- Have completed the ePortfolio and is waiting to defend your portfolio;
- Be a graduate of the M.Ed. program and completed your degree via the ePortfolio route.

Study Procedures

The amount of time to complete the online questionnaire comprising of general information as well as written responses is approximately 30 minutes.

You may be asked to participate further in an interview via Skype™, where additional questions or clarifications of your responses will be asked. The purpose of these interviews is to take the opportunity to further explore your responses as to the efficacy and challenges that you face(d) in the preparation and creation of the ePortfolio relating to the critical reflection component. This information serves to provide a more complete picture of the insights and challenges experienced. The face-to-face Skype™ interview will not be videoed, but an audio recording may be made to ensure there are no misunderstandings between your response and what I understand (as the interviewer) I plan to type your responses to the questions in a word document (I'm a fast typist!) and trust that the clicking of the keyboard will not be distracting to you. The audio recording will allow me to return to sections of the interview where I may have missed, misunderstood, or not heard your responses. The expected time for the interview is estimated at 20 minutes.

Risks, Privacy, and Confidentiality

Do not hesitate to ask any questions about the study either before or during the time that you are participating. I will be happy to share the findings with you after the research is completed. Your name will not be associated with the research findings in any way. Only my research supervisor and myself will know your identity as a participant in the study. Your name will not be presented on any document. There are no known risks and/or discomforts associated with this study.

The questions for the survey will be presented through SurveyMonkey®, an online survey tool and will become part of the quantitative and qualitative data collection. SurveyMonkey® was founded in 1999; results are hosted and stored in the USA. Company requirements for security falls under the United States Patriot Act, which was put in place in response to incidents of terrorism. SurveyMonkey® was chosen as it is more robust, easier to use, programming skills are not required, is secure, and has been in use for over 10 years. SurveyMonkey® provides privacy points such that data collected is not sold to anyone, (information belongs to the researcher), respondents' email addresses are safeguarded, and survey responses are not sold to third parties. Data is held securely incorporating physical network, storage, application, user, and organizational and administrative security applications and processes.

Please note that all responses will be stored on my computer which is password protected. Upon completion of the study, your responses will be removed from my computer and stored on a password protected USB drive. The audio recording will be secured in a locked cabinet. All information (USB and audio recording) will be destroyed after five years. The storage and destroying of information conforms to Athabasca University's Research Ethic Board policy of ethical conduct involving humans and adheres to the Tri-Council's Policy Statements, Section C, Article 5.3 (Athabasca University, 2009; TCPS 2(2014)).

Results of this study may be published in a thesis report and may be published in an academic journal. Quotes from your interview may be included, but your anonymity will be respected and your identity will not be disclosed.

As a thank you for partaking in this study, your name will be placed in a random draw for a \$100 gift certificate for Amazon.ca. Don't miss the opportunity to support your peer (Me!) through this study to further understand the efficacy (effectiveness and value), the insights and challenges experienced by you and others, in the e-portfolio journey, as well as the opportunity to win an Amazon gift certificate!

This study has been reviewed by and received ethics clearance from the Athabasca University Research Ethics Board (Ethics File No. XXXXX). If you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 1-800-788-9041, ext. 6718 or by email to rebsec@athabascau.ca

Please complete and return the attached acceptance to survey via e-mail to sternanhome@gmail.com as your consent with full knowledge of the nature and purpose of the study.

Your time is truly appreciated. Thank you in advance for your interest in this project.

Sincerely,

Shirley Ternan,
M.Ed.(DE) Graduate student

Researcher: Shirley Ternan sternanhome@gmail.com

Supervisor: Debra Hoven (Associate Professor); debrah@athabascau.ca; phone contact
1-xxx-xxx-xxxx

*Appendix D***Reminder to Participate**

Deadline for Volunteering: xx/xx/xx

Ethics File # xxxxx

Date

Athabasca University
1 University Drive
Athabasca, AB T9S 3A3

Hi there,

Just thought I would send on a gentle reminder asking you to participate in my mixed methods phenomenology study relating to the element of critical reflection, your insights or challenges (real or perceived) through the creation your e-portfolio.

If you are still in the planning stage of determining the route to obtain your Masters of Education in Distance Education, and have decided to pursue your degree via the ePortfolio, your input is very welcome even though you have not as yet began the ePortfolio process.

For your convenience I have attached another copy of the Letter of Invitation to Participate.

As a reminder, and a thank you for partaking in this study, your name will be placed in a random draw for a \$100 gift certificate for Amazon.ca. Don't miss the opportunity to support your peer (Me!) through this study to further understand the efficacy (effectiveness and value), the insights and challenges experienced by you and others, in the e-portfolio journey, as well as the opportunity to win an Amazon gift certificate!

Thank you in advance for your interest in this project.

Sincerely,

Shirley Ternan,
M.Ed.(DE) Graduate student

Researcher: Shirley Ternan sternanhome@gmail.com

Supervisor: Debra Hoven (Associate Professor); debrah@athabascau.ca; phone contact
1-xxx-xxx-xxxx

Appendix E

Theme, Code, and Frequency Table

Table E1			
<i>Theme, Code, and Frequency Table</i>			
BARRIERS			
Code	Themes = Barriers		
	Sub-themes		
	Barriers – internal (feelings, of being) has control over	Barriers – external (little to no control over)	Barriers – to practical application
Censorship	-	-	1
Challenges	-	52	-
Change in direction	-	-	2
Contradictory to indicators of accomplishment	-	-	1
Course limitations	-	1	-
Demotivating	1	-	-
Dependence	1	-	-
Development and direction (lack of)	-	-	1
Difficulties	-	17	-
Disappointment	34	-	-
Dissatisfaction (perception of)	2	-	-
Doubt	5	-	-
Emotional	6	-	-
Helplessness	2	-	-
Impractical	-	-	4
Instructor (closed door, marker, grading person)	-	4	-
Internet security (concerns)	-	2	-
Involuntary	2	-	-
Isolation	2	-	-
Frustration	38	-	-
Inexperienced	1	-	-
Lack of broader community (constraints or values)			5
Lack of communication (with peers)	-	-	2
Lack of communication skills	-	-	1
Lack of creativity	1	-	-
Lack of disclosure	-	2	-

Lack of flexibility	-	2	-
Lack of freedom	-	2	-
Lack of information	-	1	-
Lack of knowledge gained	-	-	1
Lack of meaning to others	-	-	2
Lack of motivation	3	-	-
Lack of practical application	-	2	-
Lack of sharing	-	3	-
Lack of skills	-	-	7
Lack of understanding	3	-	-
Limiting (adequate)	-	-	1
Need for change	-	10	-
Need for improvement	-	19	-
Need for support (lack of)	-	15	-
No personal growth	-	-	1
No practical value	-	-	1
No real world application	-	-	2
No social perspective (lack of)	-	-	3
Not beneficial	-	-	3
Overload	-	1	-
Perceptions	22	-	-
Poor design	-	1	-
Possibility of failure, failure (feelings of)	5	-	-
Question relevance	-	-	1
Real world constraints (impracticalities)	-	5	-
Restrictions	-	4	-
Somewhat satisfied	1	-	-
Technology	-	19	-
Technology (problems, outdated)	-	2	-
Time (matter of time, lost, required, and planning)	-	9	-
Time (lack of time efficiency)	-	1	-
Transactional distance	-	-	2
Trial and error process	-	-	1
Uncertainty (real or implied)	49	-	-
Uncomfortable	3	-	-
University (internal use)	-	1	-
Unfamiliar	1	-	-
Unorganized	-	-	1
Unsuitable (for real world)	-	-	3
Unthinking	1	-	-
Unwilling participant (perceptions of)	-	1	-
TOOLS FOR SUCCESS			

Code	Themes = Tools for Success		
	Internal (from self, a quality, a feeling)	External (no control over)	Personal actions (responsibility)
Ability	2	-	-
Community (support of peers)	-	-	1
Activities	-	-	21
Application of skills	-	-	3
Certainty (knowing)	35	-	-
Clear and concise (outcomes / guidelines)	-	2	-
Competencies challenged (perception of)	2	-	-
Compromise	1	-	-
Constructs	-	1	-
Delivery and direction	-	-	2
Diligent	1	-	-
Diversity	2	-	-
Decision and delivery	-	-	4
Decision making (decision making process)	-	-	18
Discovery	-	-	2
Ease of use (easy, editing, to navigate)	-	14	-
Experience(s)	-	-	27
Familiarity	1	-	-
Flexibility	2	-	-
Free (relating to cost)	-	1	-
Friendships	-	1	-
Functional (accessible, availability of tools, functionality, measurement tool, options, positive features, straight forward, multipurpose, sharing of information, reader friendly)	-	11	-
Independence	1	-	-
Information provided	-	3	-
Instructor	-	13	-
Interaction	-	-	4
Know-how	2	-	-
Mapping and sequencing	-	-	1
Openness	48	-	-
Permission	-	1	-
People for success	-	9	-
Practice	-	-	2
Proactive	-	-	1

Problem solving skills	6	-	-
Recognition	28	-	-
Reflection / reflective	78	-	-
Reinforcement	-	-	3
Requirement (application of)	-	-	2
Resolve (tenacious)	6	-	-
Support (perception of)	-	11	-
Technology	-	20	-
Time efficiency	-	4	-
Transactional distance	-	2	-
Understand expectations	2	-	-
Uniqueness	2	-	-
Verbal support (acknowledgement)	-	-	-
PEOPLE FOR SUCCESS			
Code	Theme = People for Success		
	Sub-themes		
	Instructor type	Other	
Coach	13	-	
Facilitator	24	-	
Guide	2	-	
Instructor	3	-	
IT support	-	1	
Mentor	2	-	
Peers	-	7	
SME (administrator)	-	1	
SME (student)	-	1	
Subject matter expert (SME)	10	-	
Supporter	1	-	
TECHNOLOGY USED			
Code	Theme – Technology Used		
Cloud based	1		
Mahara	17		
Moodle	2		
Other tools (AU's platform)	1		
Weebly	4		
Wikispaces	2		
Wix	5		
Word Press	2		
PERSONAL MAKE-UP			
Code	Theme = Personal Make-up		

	Sub-themes		
	Positive	Negative	Other
Ability	-	-	2
Acceptance	1	-	-
Active learner	1	-	-
Anger	-	1	-
Biased	-	2	-
Communication skills (applies effort)	1	-	-
Constructs (applies effort)	16	-	-
Creative	2	-	-
Decisive	2	-	-
Disconnect	-	1	-
Easiness	2	-	-
Emotional (emotion) (Indicators of)	-	-	30
Empathy	2	-	-
Emphasis	-	-	14
Excitement (real or implied)	1	-	-
Explanatory	1	-	-
Explorer	1	-	-
Expresses reflective skills	1	-	-
Generalizes	-	-	1
Indecisive	-	1	-
Indifference	-	5	-
Introspect	2	-	-
Lack of resolve	-	12	-
Lack of sharing	-	3	-
Lack of success	-	1	-
Lack of understanding	-	5	-
Motivation / motivated	26	-	-
Noncommittal	-	-	1
Objective	3	-	-
Of self	1	-	-
Opinionated	1	-	-
Pensive	1	-	-
Personal and private	-	-	29
Pragmatic	3	-	-
Pride (proud)	2	-	-
Questions (questioning, questions sharing)	-	-	13
Reasoning (applies effort)	1	-	-
Sharing (act of sharing of self)	11	-	-
Uncomfortable	-	3	-
Unbiased	1	-	-

BUILDING THE CONSTRUCTS			
Code	Theme = Building the Constructs		
	Sub-themes		
	Internal (apply cognitive / metacognitive)	External	Through people (support)
Achievements	20	-	-
Change	1	-	-
Collaboration	-	-	5
Community (peers / cohorts)	-	-	7
Competencies	9	-	-
Compilation of constructs (experiences)	1	-	-
Choices (through making of)	3	-	-
Critical analysis	29	-	-
Critical reflection	50	-	-
Critical thinking	116	-	-
Cross-referencing (ability to)	1	-	-
Crucial skillset(s)	14	-	-
Crucial component (a thought, a tool) (emphasis)	13	-	-
Demonstrating of knowledge and learned skills (to others)	-	4	-
Demonstrating (demonstration of) competencies	-	9	-
DE vs traditional education (working in)	3	-	-
Direction and delivery (the process)	-	41	-
Evidence	-	1	-
Face-to-face	-	-	1
Import of aesthetics	5	-	-
Improvements	2	-	-
Incorporate reflective skills	1	-	-
Incorporate ePortfolio each course	-	1	-
Learner centered	5	-	-
Main focus	5	-	-
Metamorphosis	2	-	-
Methods (methodology)	-	6	-
Need for change	10	-	-
Peer review sources	-	1	-
Perceptions	10	-	-

Practical applications	-	2	-
Research competencies (apply and required)	-	7	-
Recollection	2	-	-
Reflection / reflective	77	-	-
Skillset (new, increase, change in)	10	-	-
Social perspective	-	-	17
Solution finding	8	-	-
Specific context	2	-	-
Speculation	2	-	-
Support of peers	-	-	1
Teacher centered	-	-	2
Technology	-	19	-
Timing of ePortfolio	-	1	-
Tools for success (artefacts, courses, assignments, creations)	-	137	-
Transformation	4	-	-
Types of real world	-	4	-
POSITIVE OUTCOME			
Code	Theme = Positive Outcome		
	Sub-themes		
	Internal	External	
Achievement(s)	20	-	
Awareness	32	-	
Belonging (feelings of)	1	-	
Broader community (sharing)	-	52	
Cognition	25	-	
Competence	13	-	
Compilation of knowledge indicators	-	92	
Confidence	19	-	
Creative	2	-	
Deep and meaningful learning	20	-	
Desire to share	1	-	
Empowerment	35	-	
Experiences (positive)	23	-	
Feedback (received)	-	2	
Freedom (to act / to decide)	11	-	
Indicators of accomplishment	-	65	
Knowledge gained	113	-	

Metacognition	12	-
Personal growth (development and growth, increased understanding)	19	-
Proud (pride)	4	-
Real world (application, opportunities, career assistance)	-	143
Recognition	29	-
Resolution	4	-
Satisfaction	19	-
Showcase	-	2
Success (resolution)	43	-

Appendix F

Theme Definitions

Table F1	
<i>Theme Definitions</i>	
Theme (Label)	Definition (Mine)
Barriers (constraints)	<p>Barriers are constraints, perceived or real, that limit an individual from attaining an action, a communication, or a personal goal.</p> <p>Barriers have been organized into the following subcategories: internal, external, and practical applications.</p> <p>Barriers – internal (feelings, of being) has control over</p> <p><u>Codes (included in this theme):</u> <i>Animosity, demotivating, dependence disappointment, dissatisfaction (perception of), doubt, emotional, helplessness, involuntary, isolation, frustration, inexperience, lack of (creativity, influence, motivation, understanding), perceptions, possibility of failure, failure (feelings of), somewhat satisfied, uncertainty (real or implied), uncomfortable, unfamiliar, unthinking.</i></p> <p>Barriers – external (little to no control over)</p> <p><u>Codes (included in this theme):</u> <i>Challenges, course limitations, difficulties, instructor (closed door, marker, grading person), university (internal use), internet security (concerns), lack of (disclosure, flexibility, freedom, information, practical application, sharing), need for (change, improvement, support (lack of)), overload, poor design, real world constraints (impracticalities), restrictions, technology, technology (problems, outdated), time (matter of time, lost, required, and planning), time (lack of time efficiency), unwilling participant (perceptions of).</i></p> <p>Barriers – to practical application</p> <p><u>Codes (included in this theme):</u> <i>Censorship, change in direction, contradictory to indicators of accomplishment, development and direction (lack of), impractical, lack of (communication (with peers), communication skills, community (constraints or value), knowledge gained, meaning to others, skills, solution finding), limiting (adequate), meaningless, no (personal growth,</i></p>

	<p><i>practical value, real world application, social perspective (lack of)), not beneficial, question relevance, transactional distance, trial and error process, unorganized, unsuitable (for real world)).</i></p>
<p>Tools for Success</p>	<p>Tools for success allow the individual to obtain their goals and objectives. These tools help to build the individual’s assets or strengths and may be individual skills (intrinsic) or external tools (ie., instructor). These tools may also relate to personal actions (responsibilities) of the individual. These tools continually occur in the learning process and can be physical or conceptual.</p> <p>Internal (from self, a quality, a feeling)</p> <p><u>Codes (included in this theme):</u> <i>Ability, alignment, assumptions made, beneficial, certainty (knowing), competencies challenged (perception of), compromise, diligent, diversity, familiarity, fitting of idea and concepts, flexibility, independence, insight, know-how, openness, personal constructs, problem solving skills, recognition, reflection / reflective, resolve (tenacious), understand expectations, uniqueness.</i></p> <p>External (no control over)</p> <p><u>Codes (included in this theme):</u> <i>Acknowledgement, clear and concise (outcomes / guidelines), constructs, ease of use (easy editing, to navigate), free (relating to cost), friendships, good features (accessible, availability of tools, functionality, measurement tool, options, positive features, straight forward, multipurpose, sharing of information, reader friendly), information provide, instructor, organizing tools (diary), permission, people for success, support, technology time efficiency, transactional distance.</i></p> <p>Personal actions (responsibility)</p> <p><u>Codes (included in this theme):</u> <i>Assistance (giving of), activities, application of skills, apply study methods, delivery and direction, examination, decision and delivery, decision making (decision making process), discovery, effort, experience(s), interaction, mapping ad sequencing, practice, proactive, reinforcement, requirement (application of).</i></p>
<p>People for Success</p>	<p>Individuals who encourage, support, and guide individuals to be able to accomplish goals that they set for themselves (ie., Master of Distance Education).</p> <p>Instructor type</p>

	<p><u>Codes (included in this theme):</u> <i>Coach, facilitator, guide, instructor, mentor, subject matter expert (SME), supporter.</i></p> <p>Other</p> <p><u>Codes (included in this theme):</u> <i>IT support, peers, SME (administrator), SME (student)</i></p>
<p>Technology used</p>	<p>Software platforms utilized for the ePortfolio.</p> <p><u>Codes (included in this theme):</u> <i>Cloud based, Mahara, Moodle, other tools (AU's platform), Weebly, Wikispaces, Wix, and Word Press.</i></p>
<p>Personal Make-up</p>	<p>The make-up or composition helps to form our person or identity. Our person can consist of attributes, traits, behaviors, and qualities, that form who we are and how we see and interact with the world.</p> <p>Positive traits</p> <p><u>Codes (included in this theme):</u> <i>Acceptance, active learner, communication skills (applies effort), constructs (applies effort), creative, decisive, easiness, empathy, excitement, explanatory, explorer, expresses reflective skills, introspect, motivation / motivated, objective, of self, opinionated, pensive, pragmatic, pride (proud), reasoning (applies effort), sharing (act of sharing of self), unbiased.</i></p> <p>Negative traits</p> <p><u>Codes (included in this theme):</u> <i>Anger, biased, disconnects, indecisive, indifference, lack of (resolve, sharing, success, understanding), uncomfortable.</i></p> <p>Other</p> <p><u>Codes (included in this theme):</u> <i>Ability, emotional (emotion, indicators of), emphasis, generalizes, noncommittal, personal and private, questions (questioning, questions sharing).</i></p>
<p>Building the Constructs</p>	<p>Each construct, whether it is intrinsic or extrinsic, is a building block that we add to our overall knowledge base and person. The constructs are the pieces of knowledge and skills gained from experiences (ie.,</p>

	<p>collaboration, change). There is a fine line of distinction as many of the constructs could also be identified as tools used for success.</p> <p>Internal (apply cognitive / metacognitive)</p> <p><u>Codes (included in this theme):</u> <i>Achievements, change, competencies, compilation of constructs (experiences), choices (through making of), critical (analysis, reflection thinking), cross-referencing (ability to), crucial skillset(s), crucial component (a thought, a tool, with emphasis), DE vs traditional education (working in), import of aesthetics, improvements, incorporate reflective skills, learner centered, main focus, metamorphosis, need for change, perceptions, recollection, reflection / reflective, skillset (new, increase, change in), solution finding, specific context, speculation, transformation.</i></p> <p>External</p> <p><u>Codes (included in this theme):</u> <i>Demonstrating of knowledge and learned skills (to others), demonstrating (demonstration of) competencies, direction and delivery (the process, evidence, incorporate ePortfolio each course, methods (methodology), peer review sources, practical applications, research competencies (apply and required), technology, timing of ePortfolio, tools for success (artefacts, courses, assignments, creations), types of real world.</i></p> <p>Through people (support)</p> <p><u>Codes (included in this theme):</u> <i>Collaboration, community (peers / cohorts), face-to-face, social perspective, support of peers, teacher centered.</i></p>
<p>Positive outcome</p>	<p>Through the process of learning, we attempt to obtain positive outcomes that may encourage, entice, or motivate us to obtain more positive outcomes, which form our person. Internal and external</p> <p>.</p> <p>Internal</p> <p><u>Codes (included in this theme):</u> <i>Achievements, awareness, belonging (feelings of), cognition, competence, confidence, creative, deep and meaningful learning, desire to share, empowerment, experiences (positive), freedom (to act / to decide), knowledge gained, metacognition, personal growth (development and growth, increased understanding, proud (pride), recognition, resolution, satisfaction, success (resolution).</i></p>

	<p>External</p> <p><u>Codes (included in this theme):</u> <i>Broader community (sharing), compilation of knowledge indicators, feedback (received), indicators of accomplishment, real world (application opportunities, career assistance), showcase).</i></p>
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*Appendix G***Questions and Script for Semi-Structured Interview**

The following is the script and questions for the participants from the research study who agreed to participate in the semi-structured Skype™ interview. Out of the 27 survey participants, nine individuals agreed to participate.

Each individual is contacted, via email and a time that is convenient is arranged for the interview. The participant is assigned an identifying code based on their work industry and a number (1, 2, 3, etc.). Example: ‘Edu’ for Education, ‘Mil’ for Military, and ‘Hea’ for Health. All of the participants were from education industry with one individual from the military. Prior to the beginning of the script and the interview being recorded, the participant and I chat and they are advised that their name will not be used within the recording, only their assigned name-code; this is to retain their anonymity. All files associated with the participant are also noted with the name-code. The date, time, and name-code are noted with the beginning of the recording.

Script.

This is [date], [time], and I am chatting with [name-code].

Thank you for partaking in the final part of my research involving the Skype™ interview. I have compiled, a couple of your responses to the survey that you completed back in December or January, that I would like to expand upon (more detail please). I would also like to expand upon previous questions asked, pertaining to critical reflection, knowledge transfer, and sharing of the ePortfolio with the broader community.

Our conversation will be recorded so that I can refer back, if needed, for clarification. I will also be typing your responses (I’m pretty quick) - - - hopefully the clicking of the keyboard will not be a distraction to you.

Thank you again!

Note: the references noted within the questions are not read out to the participants. The citations were noted for personal reference or if there were questions from any participants on the questions, which there were not.

Questions specific to the participant. Before the questions that all participants are asked, questions specific to the participant are put forth. The number of questions

may vary depending on the commentary from the participant's survey. Additional questions were based on need for clarification, additional information, requiring a response, or developed as a result of the participant's response to the question asked, as allowed for through the pragmatic paradigm followed by the questions provided to all (Appendix G).

Table G1	
<i>Main interview questions via Skype™</i>	
1.	How long ago did you get your Master degree?
2.	<p>Critical reflection is considered an integral part of the ePortfolio where artefacts chosen for the ePortfolio must be subjectively valued by the individual involving taking action as a result of this thoughtful process.</p> <p>a) Thinking back to your time as a new student to the program, if the ePortfolio was incorporated earlier into the program, do you believe you would have had the necessary skills and understanding of the critical reflection component? Please explain.</p> <p>b) The process ePortfolio (capstone) is recommended to be implemented as an ongoing portfolio early in the program, (Athabasca, 2014b), yet it appears that this may not be so. Do you see advantages to developing the portfolio earlier in the program? And why?</p>
3.	<p>Also included in the ePortfolio are methods of inquiry where you would have based your decisions on grounded evidence - - - and where conflicts real or perceived may have occurred. Dilemmas may also have occurred in the reflection process where they eventually needed to be resolved.</p> <p>How did you determine which artefact to choose? Did you experience dilemmas (challenges) in the reflection process? How did you resolve these dilemmas?</p>
4.	If you could incorporate improvements to the ePortfolio process, what areas would the improvements be?
5.	<p>"ePortfolios have been found to scaffold attempts at knowledge construction" Abrami and Barrett (2005). For example to the workplace, (where scaffold = transfer of information/skills).</p> <p>Have you found situations where the component of critical reflection is of assistance so that you are able to apply skills learned (such as reflective practice) to your own work or life situations? Please provide examples.</p>
6.	Do you feel you had the necessary guidance or support to the technical aspects of learning Mahara? If not, How could this be improved upon?
7.	<i>Did you feel you had the appropriate amount of support relating to the ePortfolio journey (people, technology, other). Please explain.</i>
8.	The broader community is defined as the students' peers, current, or future employers, educational community, and the academic community, where you can demonstrate concretely how knowledge has been gained through a variety of competencies. The

	<p>assumption is that ‘knowledge belongs to all’ and that “knowledge must be shared with others” (Neuman, 2011, p. 14). Alternatively, students may pursue the ePortfolio route as a means to “cultivate within themselves both the culture and practice of lifelong and life-wide learning” (Hoven, 2015).</p> <p><i>a) How could the ePortfolio be improved so that it could be shared with the broader community?</i></p> <p>b) What kind of knowledge or increased skills do you feel you have shared with the broader community, as a result of the ePortfolio process?</p>
9.	Is there anything else that you wanted to add about the EP, or just in general?

Appendix H

Theme and Coding Table

Table H1					
<i>Theme & Coding Table</i>					
<i>Survey Responses for Discussion of Critical Thinking and the ePortfolio, Knowledge gained, and Transfer to the Broader Community</i>					
<i>Note: Themes and codes identified, definitions, flags, qualifications, and identifying line from the Coded Transcript</i>					
Code (Label)	Definition (Mine)	Flag	Qualifications	Line	Example
BARRIERS					
Censorship	Reference to self and having to restrain from commenting	Verbal cue, "censor my comments"	Implies that he/she as well as others who are the same nationality (Canadian) do not openly express their concerns	3-7	"Canadians are sensitive and so I had to self-censor my comments"
Challenges(ed)	Reference to barriers that can be intrinsic or external that may be out of the control of the individual.	Verbal cue, "challenges" or "concerns", "difficult"	Implies that the individual encounters situations, people, and technologies, attitudes that place barriers on allowing the individual to move forward or achieve a task or goal.	3-3	"I felt was beyond my comprehension"
				3-8	" I cannot say that I felt able to ""openly express challenges or concerns" "In the very beginning it is difficult to get the hang of it"
				7-15	" . . .my artifacts were strongly based on conjecture as it is difficult for me to prove what I stated"
Change in	Looks to behave and	Verbal cue,	Indication of change over time, or	7-20	"It was a place to vent

direction	think differently, and take a different path.	“initiate change”	change due to a new thought process. Something that occurred in the past and is now done differently		and hopeful initiate change.”
Contradictory to indicators of accomplishment	Opposite to items considered as indicators of accomplishment.	Verbal cue, “worthless”	Implies assignments, are not considered an indicator of accomplishment	11-7	“Also, assignments are essentially worthless < for showing an employer”
Course limitation	A barrier exists due to lack of information creating a limitation	Reference to discourse	Implied	11-9	“ . . . as this was not explained to us during our course”
Collaboration	Working together in a group setting or with another individual in order to obtain a common goal. Helping each other (support). A positive action.	Reference to individuals working together or providing support	Within a distance education context	9-7 3-16	“ . . .and emphasizing team work.” “ all of the courses provided some type of it through group projects”
Demotivated	Because of a negative perception, an activity is delayed	Reference to delay over time	Indication of lacking motivation	14-18	“before it was a course and it was slow and easy to put off.
Dependence	Actions cannot be pursued because of a real or perceived need	Reference to reliance on others in order to succeed	Implies that he/she cannot complete task(s) without support from instructors	10-16	“I was unable to successfully complete artifacts without the advisors assistance.”
Development and direction (lack of)	Difficulties in completion of a task because of external guidance (technical or personal)	Identifies a potential problem	Implies that the individual cannot complete a task without frustration due to external influences	5-9	“I'm not sure if that's a problem with the system or with planning.”
Difficulties	Are personal challenges in completion of a task due to external/internal barriers. The individual is not in control of the situation because of these	Identifies a problem or a personal struggle Verbal cue,	Implies the individual struggled through a task	5-11 5-13	“I tried the Mahara system, however it was very poorly designed hard to navigate” “I had difficulties with

	challenges or struggles.	“difficulties”		5-18	Mahara” “making a page visible/ shared and part of the collection was a little cumbersome”
				8-13	“I am still struggling with this [ePortfolio]”
Disappointment	Unhappy or dissatisfied with a situation or end result that did not turn out as positive for the individual.	Provides information about a situation that is not satisfactory (in a negative or wistful tone)	Implies that the individual is unhappy with the results, technology, person and there is a desire to have wanted better (or more)	5-23	“ Also, the editors are not that great - i.e. changing background colors etc. wasn't that easy or intuitive”
				6-5	“My degree has taken longer than most... 7 years”
				9-17	“It was not what I wanted out of my degree program.”
				15-7	“As discussed previously, a reflective portfolio which has no references and artifacts is not much use.”
Dissatisfied	A stronger version of disappointment leading to feelings of frustration and a tone of anger.	Referenced by strong words, with a negative connotation “cult, or brainwashing”	Implies that the individual is not only disappointed with a situation or problem, but lends itself to the individual being angry and very unhappy	16-4	“I spent many hours trying to figure things out and became frustrated”
				7-7	“My values, beliefs, and thoughts instructors and this aspect of the e-

				13-9	portfolio seems more like a cult, or brainwashing, than education” “”We are a victim of ""dysfunction"" in our institution”
Doubt	Is a feeling of uncertainty	Referenced by questioning or by verbal indications of uncertainties , “hard to be sure”	Implies that the individual is uncertain which may create insecurities in completing a task or resolving a problem.	11-7 2-5	“Why would they [employers] think a student assignment was of any value?” “I feel confident that I can complete it, so I am leaning toward ""Yes"" but it is hard for me to be sure”
Emotional	An openness and state of feeling happy, sad, angry. An implied tone.	Reference to a written tone or exclamation. A verbal cue, “ha!”	Implies that the individual is sharing openly or maybe with discourse feelings.	3-3 7-7 7-13	“This made me feel uncomfortable and I ended up just trying to find something to say and worried that the something I said would be unhelpful or inappropriate” “. . . are none of the business of the instructors “ “Even when I was wrong and yes it happened more than once - ha!”
Helplessness	A feeling of having little	Reference to	Implies that the individual feels	9-13	“. . . We have done so

	to no control over a problem or situation. That no matter what we do, the result will not be satisfactory	feelings of inadequacy	lost and without any control		much, with so little, for so long, we are now qualified to do nothing..."
Impractical	No real world application	Verbal cue, "worthless, unsuitable"	Implies that the activity or process is of no use and has no real world application	11-7 11-7	"Also, assignments are essentially worthless" "The reflection makes it unsuitable."
Instructor	In this instance, the instructor does not fulfill the real or perceived needs of the individual.	Verbal cues, "grading person" Emphasis verbal cue, "AND" capitalized Reference to receiving less than supportive comments from the instructor	Implies that the instructor took on the role of a grading person and was not supportive to the individual (did not meet their needs).	5-5 4-15	"AND, usually I know when something isn't working, so I was unhappy to get feedback saying that none of my images showed up." "he marked my papers"
Internet security	Concerns with security of personal information on the world wide web	Verbal cue, "internet privacy concerns"	Implies that the individual does not feel safe with how the WWW manages his information.	11-10	"Has no value [the ePortfolio] with internet privacy concerns"
Involuntary	An action that is undertaken not by their choice.	Verbal cues, "forced", "would not voluntarily"	Implies that the individual undertook an action not of their choice.	13-15	"There was a requirement to review and comment on other peoples work, if that requirement was not embedded in the"

				3-3	process, I would not voluntarily review” “but I was forced to comment anyway”
Isolation	A feeling of loneliness (negative).	Verbal cues, “do not connect”. Reference to lack of connection	Implies that the individual feels alone because of the lack of connection with others	3-8	“I do not connect” “I didn't know or feel very connected”
Frustration	A feeling as a result of not being able to do, say, attain an action. Frustration is an emotional response and can be a barrier that gets in the way of thinking through a process or of achieving a goal. Frustration may cause us to withdraw	An emotional response Can be demonstrated through comments or verbal tones such as “obviously”, “I’m feeling”	An implied emotional response as it relates to technology, indecision, or something that is beyond the control of the individual	5-2 5-9 8-7 8-13	“I find Mahara non-intuitive and impossible to design” ‘Response time is slow currently attributed to many students using the system’ “Obviously, I can't decide which artefacts demonstrate the greatest learning” “I'm feeling that I've had to make a number of compromises in my artefact selection because of pre-determined criteria or because I am unsure . . .”
Inexperienced	Demonstrates or voices concerns about a lack of experience	Verbal cue, “relatively new”	Implies that the individual is new to the program, therefore does not yet have the necessary skills to accomplish tasks (as it relates to	13-3	“I could see how this could impact the broader community, but I am relatively new”

			communication)		
Lack of communication (with peers)	Real or perceived barrier relating to lack of communication or encounters with peers	Verbal cue, "minimal communication" Reference to an activity undertaken alone.	Implies that the ePortfolio is a solitary activity with little communication between peers.	13-9	"The ePortfolio involve minimal communication,"
Lack of communication skills	Different from having access to others. Real or perceived barrier in the skill level as it relates to communication	Verbal cue, "I didn't know how to communicate"	Implies that the individual has communication skills challenges.	3-3	"I felt it was beyond my comprehension, I didn't know how to communicate that with the group"
Lack of broader community sharing	Relates to sharing with the broader community as it relates to the ePortfolio being beneficial in securing employment	Verbal cue, "I would not share . . . with potential employer"	Implies that potential employer is considered the broader community and that the ePortfolio should not be shared	11-15	"I would *not* share the eportfolio that I developed with a potential employer."
Lack of creativity	The inability to be able to express creativeness as it relates to technology software because of the technology's limitations.	Verbal cue, "limits . . . creative aspect"	Implies that the individual cannot be creative with technology because of its limitations	5-27	The downside to Mahara is that there is limited functions for organizing the material which limits to some extent the creative aspect of the portfolio.
Lack of disclosure	Lacking the ability to properly disclose perceived necessary information to a third party (the reader) as it relates to the ePortfolio.	Reference to inability to provide readers with necessary information	Implies that the individual had to follow rules rather than provide information that the individual felt necessary to the reader	11-9	". . . were not able to provide anything in the way of a legend guide readers outside of the AU programme"
Lack of flexibility	Lacking flexibility in software as it relates to technology	Verbal cue, "not allow flexibility"	Implies that technology did not provide necessary tools to make the ePortfolio visually more	5-22	"I felt Mahara did not allow flexibility in column width or

			appealing		wraparound features for graphics “
Lack of freedom	Lack of choice to include information in the ePortfolio for a multiple of uses	Reference to creating a tool (ePortfolio) as required without freedom to insert information for future purposes	Implies that the ePortfolio was not diversified enough for additional uses	11-9	“The end result [ePortfolio] seemed to be directed mostly to meeting some unspecified and unpublished desire rather than allowing us to include what we consider useful for other purposes.”
Lack of information	Lack of details or information to provide ease of use of the ePortfolio for external parties (the reader).	Reference to “not able to provide anything” (a legend) as it relates to ease of use for the reader	Implies that the ePortfolio was lacking in useful information as perceived by the creator of the ePortfolio.	11-9	“we were not able to provide anything in the way of a legend to guide readers outside of the AU programme to what our reference numbers meant”
Lack of knowledge gained	A recognition by the individual of skills lacking as it relates to critical reflection. Critical reflection is incorporated into the constructs of the individual in the process of gaining knowledge.	Reference to a lack of understanding Verbal cues, “could not explain”, “could not say that I have”	Implies that the individual has not gained any knowledge as it relates to critical reflection	9-15	“I could not say that I have an understanding of how to *do* critical reflection and could not explain to someone else what critical reflection is.”
Lack of meaning to others	Recognition by the individual that the ePortfolio may not be meaningful to the broader	Reference to the inability to include information	Implies that the ePortfolio serves only a specific purpose or has limitations for real world application	11-9	“However, certain constraints were imposed: we could not include actual pieces of

	community (including employment)	that may be applicable to the real world (employment)			work (things [work] that could be important for securing employment); although we needed to reference course competencies by number.”
Lack of motivation	An intrinsic desire to undertake a task or to take action.	Reference to passage of time and inaction by the individual	Implies that the individual is not motivated to continue an activity or share information	2-5 3-8	“I have not looked at my portfolio in a few months” “This also made it hard for me to openly express.”
Lack of practical application	No real world application as it relates to the ePortfolio	Reference to more accepted in “institutional setting than private sector”	Implies that the ePortfolio is not practical in real world situations	11-22	“It [eportfolio] also seems to be more accepted in an institutional setting, rather than the private sector”
Lack of sharing	Inability for an individual to share information due to technology problems or a perception that information (the ePortfolio) should not be shared with the broader community	Reference to inability to share because of technical problems. Verbal cue, “limit access”	Implies that there may be technical problems therefore information cannot be shared. Implies that the ePortfolio should have limited audience viewing (not the broader community)	5-3 11-7	“ . . . but I did receive an email indicating that others did because the server kept shutting down (I think???)” “ Students should be shown how to limit access to their e-portfolio to just their instructors and the capstone cohort”
Lack of skills	The inability by an individual to carry out a task or activity due to real	Verbal cues, “didn’t know”, “felt	Implies that the individual did not have necessary skills to carry out a task or activity.	3-3 3-3	“ I didn’t know . . . “ “ . . . because I felt so

	<p>or perceived lack of knowledge or skills.</p> <p>Perceive skills as being more hands-on.</p>	<p>so inexperienced”</p>			<p>inexperienced”</p>
Lack of time efficiency	<p>As a result of inefficiencies in the degree program, there are time inefficiencies.</p>	<p>Reference to inefficiencies in the order of courses resulting in inefficiencies of time</p>	<p>Implies that time for the student would be improved if the ePortfolio were incorporated earlier in the program</p>	13-13	<p>“ A very worthwhile process [ePortfolio} which truly should begin with your FIRST course in the program - not at the end of the journey.”</p>
Lack of understanding	<p>The inability by an individual to carry out a task or activity due to real or perceived lack of knowledge or skills.</p> <p>Perceive understanding as being more cognitive</p>	<p>Verbal cue, “beyond my comprehension”</p>	<p>Implies that the individual did not have the understanding to complete a given task (communicate)</p>	3-3	<p>“ I felt was beyond my comprehension, how to communicate that with the group because I felt I didn't know what my questions were”</p>
Limiting	<p>An activity that has little action because of circumstances outside of the individual’s control.</p>	<p>Verbal cue, “very little”</p>	<p>Implies that the individual did not participate even though it was desired.</p>	3-20	<p>“ It was encouraged, but there was very little of it [participation]”</p>
Need for change	<p>The need for change comes as a result of a limitation as it relates to information (real or perceived).</p> <p>Refers to something (technology or a process) that does not exist. (similar to need for improvement).</p>	<p>Reference to a real or perceived limitation as it relates to information</p>	<p>Implies that there is a need for change</p>	<p>11-9</p> <p>11-9</p> <p>16-16</p>	<p>“ we were not able to provide anything in the way of a legend”</p> <p>“ as this was not explained to us during our course.”</p> <p>“ I think the biggest challenge is to start thinking about right from the beginning of</p>

	Until the limitation is eliminated, the need for change acts as a barrier.				the program, I wish that introduction course has something general in it”
Need for improvement	Refers to something (technology or a process) that currently exists. Until the technology or process is improved, the need for improvement acts as a barrier.	Verbal cues, “poorly designed, “response time is slow”. Reference to difficulties as a result of current technologies	Implies that there are improvements to be made in current technologies	5-9 5-11 5-22	“ Response time is slow, currently attributed to many students using the system “ “ I tried the Mahara system, however it was very poorly designed hard to navigate” “ I selected a cloud-based web development program as I had difficulties with Mahara.”
Need for support (lack of)	In the absence of real or perceived support, challenges occur for the individual in the completion of tasks or processes.	Verbal cue, “get better support” Reference to a lack of guidance. As a result, there is inaction (real and perceived) by the individual	Implies a need for support or guidance due to lack of experiences (information) for the course	5-22 6-9 8-7	“ I chose Mahara since I was unfamiliar with other platforms and felt I could get better support for it from the University” “ It's pretty difficult to complete a course (let alone a programme) without having experiences upon which to reflect.” “Obviously I can't decide which artefacts demonstrate the greatest

					learning”
No personal growth	When a limitation occurs, often there is a lack of personal growth. This lack of personal growth can be intrinsic or extrinsic.	Reference to a limitation where the broader community (employer) does not recognize any personal growth from the creation of the ePortfolio	Implies that the ePortfolio should be reviewed to see adaptability for the real world	11-8	“most employers assess you on what you have achieved - not the processes you have gone through or how much you have grown”
No practical value	Impractical real world application	Reference to the real world and the impracticality of the ePortfolio	Implies that there are changes needed in the ePortfolio to real world application	11-8	“ most employers would not be willing to spend the time required to critically review the e-portfolio ”
No real world application	Similar to no ‘practical value’. The ePortfolio is perceived as not being valuable in the real world (broader community).	Response to a questions as to which external groups may view the ePortfolio as being value	Implies that changes are needed in the ePortfolio to real world application	15-27	“None at this time”
No social perspective (lack of)	As a result of personal (intrinsic) or external forces, there is little communication between individuals in the making of the ePortfolio, therefore there is little input from peers.	Verbal cue, “minimal communication”, “I did not want . . . to share . . . “	Implies that communication activities should be encouraged, yet there will always be individuals who do not want to share their information.	13-9 13-14	“ The ePortfolio involve minimal communication” “ I did not feel that I 'wanted' to share it with anyone,”

<p>Not beneficial</p>	<p>Because of perceptions, the ePortfolio may not be beneficial, useful, or advantageous to individuals in the real world</p> <p>This code is similar to lack of practical application and lack of real world application</p>	<p>Verbal cue, "isn't a showcase".</p> <p>Reference to personal reflections as being useful to self and not to others.</p> <p>Reference to an ePortfolio as not being practical in the real world</p>	<p>Implies that there is uncertainty by individuals and their perceptions as to the use of the ePortfolio</p> <p>Implies that the ePortfolio and real world application should be reviewed.</p>	<p>17-6</p> <p>11-2</p> <p>11-4</p>	<p>" I am not sure that my personal reflections can be much of a guide for anyone,"</p> <p>" No - It isn't a showcase"</p> <p>" If an individual would bring their completed ePortfolio to a job interview, I am unsure if the interviewer may like the idea of viewing an ePortfolio"</p>
<p>Overload</p>	<p>There is undue burden on the technical systems of AthU</p>	<p>Verbal cue, "many students using the system"</p>	<p>Implies that the AthU system cannot handle the amount of students working of their ePortfolio.</p>	<p>5-9</p>	<p>" Response time is slow currently attributed to many students using the system"</p>
<p>Perceptions</p>		<p>Reference to how we perceive ourselves and how this perception may create barriers</p> <p>Reference to feelings or opinions that may hold an</p>	<p>Implies that change is needed to communicate with the institution (AthU)</p>	<p>6-11</p> <p>7-22</p> <p>7-27</p> <p>9-13</p>	<p>" I have always been ""agnostic"" in that sense."</p> <p>" Personally, I don't feel that anyone is ever truly free of at least some bias"</p> <p>" , but the there are always biases"</p> <p>" Sometimes - We are a</p>

		individual back from accomplishing what they want to achieve. Reference to external sources (institution) as being responsible for how we perceive our role in the course.		16-4	victim of ""dysfunction"" in our institution” “ from what I was seeing others had learned in their ePortfolios.”
Poor design	Lack of user friendly features to the technical ePortfolio features	Visual cue, “poorly designed”	Implies that improvements in design are needed to the technical platform	5-11	“I tried the Mahara system, however it was very poorly designed hard to navigate”
Possibility of failure, failure (feelings of)	Inability to successfully complete an activity. A perception of being disappointed in self.	Verbal cue, “unable to successfully complete”	Implies that the individual requires support for success.	10-24	“I was unable to successfully complete artifacts without the advisors assistance.”
Questions relevance, relevance	Challenges the significance of information, activities.	Verbal cue, “didn’t think they were relevant”, “would be relevant”	Implies that there is uncertainty as it relates to sharing of information in the broader community. Implies that there is uncertainty as to the importance of an event, activity, etc.	13-3 16-20	“ and am unsure how to reflect in a way that would be relevant to the broader community.” “ I couldn't remember those, or didn't think they were relevant. ”
Real world constraints (impractical-	The ePortfolio may be considered (real or perceived) impractical in	Visual use, “are not used in Asia”.	Implies that the ePortfolio is not useful in real world applications	11-9	“ . . . rather than allowing us to include what we consider useful

ities)	real world applications.	Reference to being allowed to incorporate information that would be useful (real or perceived)		11-11	for other purposes.” “ Such tools are not used in Asia”
Restrictions	Limitations that stop an individual from communicating or performing an activity	Visual cue, “warned me”, “provided barriers”	Implies that the individual felt he/she could not openly and freely communicate	3-7	“ I was as free to express concerns as much as in any course. But as one AU academic warned me”
		Reference to not being able to openly and freely communicate		3-8	“ I cannot say that I felt able to ""openly express challenges or concerns""
				3-8	“ the opportunity was there to openly express, but the environment provided barriers”
Somewhat satisfied	Almost pleased as it relates to technology	Reference to technology working	Implies that improvements could be made to the technology	5-7	“ Mahara works reasonably well”
Technology	Technology is a physical or conceptual tool and implies a means or method of attaining an end.	Verbal cue, “Mahara”, “old technology”	Can be physical or conceptual	5-13	“ . . as I had difficulties with Mahara”
				5-22	“ Having said that, I think Mahara is rather old technology”
Time	Reference matter of time, lost, required, and planning)	Verbal cues, “several weeks”,	None	5-24	“ But it took me several weeks and headaches to get used to it.”

	Time can be a barrier or a tool in attaining of a goal.	“longer than most”		6-5	“ My degree has taken longer than most... 7 years”
Transactional distance	Transactional distance (theory) is not the physical distance between individuals, but is the pedagogical distance or separation between individuals.	Verbal cue “distance nature”, “connected at a distance”	Implies that transactional distance (Moore’s theory) is not taken into consideration in the online environment	3-16	“ Although the collaboration and communication was not a focus due to the distance nature of the program” “- In 610 for example, I am mostly able to reflect upon the challenges I faced with feeling connected at a distance”
Trial and error	As a result of mistakes or errors, an activity is repeated. This may occur several times until the activity is considered acceptable (by the individual or instructor).	Verbal cue, “trial and error”	Implies that the ePortfolio process relied more on trial and error than by knowing exactly what information was required.	16-9	“ The current process [ePortfolio] relied on a trial-and-error process whereby folks created a document, waited to discover how it missed the mark and then tried again, based on comments from the instructor.”
Uncertainty	Uncertainties are similar to feelings of doubt, or can be related to indecision caused by self or external sources.	Verbal cue, “I am not sure”, “hard for me to be sure”. Reference to uncertainty by “being in flux”	Because of the uncertainty, the individual is not able to clearly define a feeling, path, action, or goal	17-6 17-13 2-5	“I am not sure that my personal reflections can be much of a guide for anyone,” “I am not sure I want to share all of it outside of my learning circle. “ “”Yes”” but it is hard

				2-12	for me to be sure” “However, the goals still seem to be in flux, and do not apply well to all fields, or environments”
Uncomfortable	Being in a state of uncertainty causing difficulties in feelings.	Reference to a feeling of not being able to do something	Implies that there are forces that stop the individual from carrying out a task or feeling secure to take action	7-7	“Clearly I can't be completely open writing “
University	As it relates to the degree program and having an internal use to a university than real world application	Reference to uncertainties “unspecified, unpublished desires) as it relates to the university	Implies that the graduate programme is geared towards the use of the university (as a tool) rather than real world application	11-9	“The end result seemed to be directed mostly to meeting some unspecified and unpublished desire of the programme,”
Unfamiliar	Reference to being new to an online learning environment or online programme thus creating a perceived (or implied) barrier.	Verbal cue, “relatively new”	Implies that because of a newness to an environment, there are barriers to overcome	13-3	“ . . . but I am relatively new”
Unorganized	Muddled, lack of being in an orderly fashion (as it relates to courses in the graduate program), lacks consistency of logic in the order of courses offered.	Verbal cue, “too much of an overlap” Reference to “stumbling blocks” created as a result of the overlap	Implies that the program is unorganized creating uncertainty and barriers. Implies that the programme requires improvements in the manner that courses are organized	2-13	“AU does use case studies but I felt there were times when there was too much of an overlap in courses - or gaps that were huge stumbling blocks”
Unsuitable	A perception that information is	Verbal cue, “unsuitable”,	Implies that certain activities or results from activities were not	11-17	“ . . . The reflection makes it unsuitable”. “. . .

	inappropriate and cannot be used causing barriers for the individual.	“unusable”	appropriate to be used	16-7	... Also the ban on including actual artifacts makes it unsuitable, as does the ban on formal references. “But most were unusable for my e-portfolio, as they [journal entries] were very critical of AU, the instructors and my fellow students.”
Unthinking	Because of an action that has not had a lot of thought put in place, a barrier is created.	Reference to groups being formed “very quickly” rather than in a methodical and thoughtful manner.	Implies there could be a better manner for forming groups in order to collaborate with multiple individuals.	3-8	“Also, our groups were formed very quickly and included people I didn't know or feel very connected”
Unwilling participant (perceptions of)	An individual takes part in an action not of personal choice or motivation.	Verbal cue, “may force a student”. Reference to an action having to be taken not of the individual’s choice.	Implies that as a result of inaction by an individual, the individual is forced to undertake an action rather than be personally motivated.	14-11	“One created [eportfolio] as one completes courses may not be of great use, on the contrary, may force a student to make up things [reflections] to fill in expectations placed on them.”
TOOLS FOR SUCCESS					
Ability	Capacity to perform.	Verbal cue, “able”	None	14-27	“ I was able”
Acknowledgement	As it relates to accomplishment in	Verbal cue, “recognition”	Provides motivation to	14-21	“recognition of specific skills”

	completing a task; a positive response		continue with various tasks or activities		
Assumptions made	As a result of an individual making an assumption, helps to form a construct to take action	Verbal cue, “assumed”	Implies that because of an assumption,	11-9	“ Prior to the feedback starting, I assumed that this role would be part of the purpose of the ePortfolio.
Activities	An action relating to a mental or physical task resulting in a positive outcome..	Verbal cue, “wrote large amounts”, “doing”, “rethink and retool”, “courses”	Implies that activities that create a positive outcome form part of our constructs	9-18 9-22 10-8 13-18	“ I wrote large amounts at the beginning, but they were summaries and not critical reflections.” “ . . .and doing the e-portfolio” “ but rather works that forced me to rethink and retool my beliefs about myself.” “ There were courses that I just plowed through”
Application of skills	When applying skills (mental or physical) towards an activity, this is considered to be a tool for success. Applying one-self, positively.	Reference to positive outcome as a result of applying skills	Implies that applying skills help form our constructs	14-24	“ The biggest success would be learning how to successfully complete the e-portfolio, “
Certainty	Statements by individuals that are definitive	Verbal cue, “yes”	None	2-13	“Yes, though I did do an extensive search, while

		Tone of comments are positive and definitive		3-26	half-way through my program, of other Instructional Design programs.” “ Yes I had a very open communication with the instructor in”
Clear and concise	Information is relayed and provides positive direction in a clear and concise form	Verbal cue, “clearer outline of expectations”	None	16-9	“ My success would have been enhanced with a clearer outline of expectations”
Community	Embraces community of learning. A group of individuals who come together for a variety of reasons. Could be to work together, to share an idea, or to socialize. Normally have a common interest or goal.	Verbal cues, “helping others”	Reference to a community of learning in an online venue.	14-20	“helping others” “ Helping others complete theirs”
Competencies challenges	Abilities, know-how, skills that are reviewed and reflected upon as a means for reinforcement	Reference to review of work for understanding of knowledge base or competencies	Implies that review of work can positively reinforce constructs and abilities	14-15	“ It was helpful to review all of the work that I completed throughout the program, it can be easy to complete a course, move on, and then forget what I did in that course”
Compromise	Negotiation of decisions made (internal process) that result in positive outcome.	Reference to decision making process that helps to achieve an end goal	Implies that reflection and review upon various artefacts using a decision-	10-18	“ wanted to incorporate what [artefacts] went well, what didn't go well,”

			making process can result in positive outcome.		
Constructs	New experiences, knowledge or skills that add to our own person. Each individual has their own skills and knowledge based on personal learning, life experiences, or learning from others and their environment. These form their constructs. A new construct adds to the individual's current knowledge base.	Reference to learning of new information	None	10-20	" I wanted a good mix and it seemed the chosen artifacts represented distinct points of the MDDE program"
Delivery and direction	As it relates to proactive decisions and implementing direction resulting in positive results.	Reference to incorporating decision-making process and then taking a direction based on the decision.	Implies that being proactive in decisions and taking resulting actions can be positive	14-18	" I began working through the eportfolio before it was a course"
Diligent	Hard-working	Verbal cue, "wrote large amounts"	Implies that being a hard worker and thorough will have positive outcomes	9-18	" Sometimes - I wrote large amounts . . . "
Diversity	Variety, mixture as it relates to various artefacts within the ePortfolio	Verbal cue, "variety"	Implies that greater success can be had by incorporating a variety of competencies within the ePortfolio,	10-9	"I preferred artefacts that provided an opportunity to identify attainment of a larger number and variety of competencies"
Decision and	Making a choice that	Verbal cue, "selected"	Implies that	10-9	"I selected what were

delivery	results in an action being carried out that is positive	Referencing to having carried out a decision	making decisions and taking action can become a tool for success		my most memorable creations”
Decision making	A progression of thoughts (possibly through reflection) where positive decisions are made	Verbal cue, “choosing” Reference to making a decision resulting in positive results	Implies that the decision making process can be an effective tool for success.	10-19 10-27 10-10	“ I wanted to incorporate what [artefacts] went well, what didn't go well,” “ . . .and reflected on the learning for each before choosing the ones that resulted in the greatest learning.” “ before choosing the ones that resulted in the greatest learning.”
Discovery	An action that unearths or finds new information	Verbal cue, “I found that”, I was led to discover” Reference through discovery a decision or action that should be taken to result in a positive result	Implies discovery that be a positive tool for success	7-13 7-14	“ I found that overwhelmingly I was allowed to pursue streams of study related to the course,” “ Most often I was led to ""discover"" my own logic errors and self-correct to reach sound positions worthy of further exploration. /”
Ease of use	Technology, information, that is easy to process or use	Verbal cue, “easily readable, “straight forward” Reference to no	Implies that technology or information that is not difficult to follow or easy to	13-24 5-3	“ . . . put it in a format that was easily readable” “I didn't have any difficulties using this

		difficulties	use is a tool for success	5-20	software” “ Mahara is straight-forward,”
Experiences	As a result of undertakings by an individual, actions are taken that become our experiences (good and bad) and help form how we perceive the world	Verbal cue, “experiences” Reference to experiences being important for reflection and for taking positive action	None	6-1 6-9 6-14	“ I believe that we all have experiences with our learning that we can draw upon to continue to grow and learn” “ It’s pretty difficult to complete a course (let alone a programme) without having experiences upon which to reflect.” “ The explorations within the units could be incorporated as artefacts in addition to the work from the two major assignments.”
Familiarity	Know-how, understanding of, results in ease of use	Reference to as a result of incorporating elements of the ePortfolio into first courses, the individual will have more know-how and experience with the ePortfolio (reducing frustration	None	16-5	“ The e-portfolio course should be one of the first courses. All MDDE courses could have a small e-portfolio component. ”
Free	Free as it relates to cost. No expense to the individual helping to reduce any real or perceived frustration	Visual cue, “free”	None	5-8	“I liked it because 1) it was free, “

Friendships	Positive relationships through the MDDE forums resulting in friendships or acquaintances	Verbal cue, “at the friends I made”	None	10-17	“ It was a really good experience to look at what I had done over these years and look at the friends I made”
Functional features	Refers to an activity to be undertaken be accessible, availability of tools, functional, measurement tool, options, positive features, straight forward, multipurpose, sharing of information, reader friendly)	Verbal cue, “useful”, multipurpose, more options for backgrounds”	None	14-13	“ Multipurpose as usual for me.”
				15-6	“ It [eportfolio] was useful as a measure of my growth as a student”
				5-3	“ I would have liked to have more options for backgrounds and layout”
Independence	Freedom to make choices that are beneficial to their learning	Verbal cue, “build their own”, “self-directed”	Implies that being allowed to make their own selections, individuals make best choices.	6-13	“ Most would allow students to build their own assignment criteria as long is it met the course outcomes - this is true self-directed learning in action.”
Information provided	Materials, communication, instructions are given to the student proactively (rather than reactively) to provide greater success.	Verbal cue, “provide you with”	Implies that having information provided results in positive learning.	2-16	“ All the grad programs provide you with critical thinking growth”
		Reference to information being provided assists in being successful		2-13	“ While the e-portfolio was not necessarily mentioned, course outcomes and the eportfolio competencies aligned well to assist artefact selection throughout the program process.”
Instructor		Verbal cue, “instructor”	Implies that the	3-16	“ I always raised my

	The Instructor is one of the tools for success and helps to facilitate, mentor, and guide the individual through the learning process.	Ones who provides "support" Reference to positive comments relating to the instructor	instructor can have positive influence on the individual resulting in success for the person. Within a distance education or F2F context	3-26 4-7	concerns with Instructors if I had them" " I had a very open communication with the instructor in MDDE 610 both through the forums and via email. " " More of a "sage on the stage" than a "guide on the side"
Interaction	Sharing of information with individuals, peers, instructor Communicating within the group – encourages others to communicate or participate. Through verbal interaction we attempt to communicate our ideas, thoughts, to share experiences and to connect with another individual. Interaction can be through positive or negative verbal communication. The tone of the conversation as well as the use of questions may invite communication and interaction	Verbal cue, "by another's contribution", "we learned from each other" Positive comments	Implies a greater understanding within discussions	13-24 3-22	" particularly when I realize something that was triggered by another's contribution that caused me to reflect and realize a new understanding." " That is to say that we learned from each other " "
Know-how	Underlying knowledge or	Verbal cue, "had	Implies an	3-22	" Each student had

	skillset	experience”	understanding or skill that allows for success		experience”
Mapping and sequencing	Planning and placing of information or a task in an order that is beneficial to the student	Verbal cue, “mapping”, “sequencing” Refers to an action taken	Implies that through thoughtful process, organizing of work processes leads to positive outcomes	2-13	“ some of the existing courses via program mapping of outcomes, activities and sequencing to more effectively build skill sets for distance learning.”
Openness	Ability to be honest, candid, and direct statements without fear.	Relates to a feeling and may be a positive or even critical statements; the purpose to share information honestly.	Implies a thought process occurs through reflection whereby the individual is able to express their feelings.	3-8 3-13 5-15	“Yes, collaboration and communication were encouraged” “ He was good at listening to and accommodating out-of-the-box thinking” “ I was struck by how poor the user interface was and how complex the process of creating a portfolio and adding objects (images and documents) to the portfolio was. “
Permission	Consent or authorization, real or perceived to take an action	Verbal cue, “I was allowed”	None	7-13	“ I found that overwhelmingly I was allowed to pursue streams of study related to the course,’ . . . “
People for success	Instructors, mentors, guides, peers, administrators, subject matter expert, supporter	Verbal cue, “mentor”, “motivator” Refers to individuals,	Implies that surrounding yourself with positive	16-8	“ . . . and following blogs of established educators

		(instructors, peers), who aid/guide/support	individuals who are supportive can result in positive outcomes	16-13 16-13	“ Work with peers who are going through the same process” “ .. as a reference point and motivator to refine and complete your portfolio; 4) find an AU mentor (prof) who loves you enough to be brutally honest”
Practice	Repetition of mental or physical activities is a positive reinforcement tool.	Refers to an activity that is repetitive which reinforces learning	None	16-5	“ All MDDE courses could have a small e-portfolio component.” “ Writing in the first person and reflecting.”
Proactive	Taking action, hands-on, positive	Verbal cue, “previewing” Refers to an action that is undertaken in advance	None	3-19	“ I have started previewing the reading assignments’
Problem solving skills	Ability to identify, reflect, and put in place actions needed to resolve an issue or difficulty Individual works through an actual or perceived problem. Problem solving skills allow the individual to think through a process in order to achieve an end.	Indications of means to resolve problems May incorporate reflection as a tool. Indicated by a comment implying the individual is working through a question or problem	Ability to resolve problems, real or perceived, and take action can lead to positive outcomes	3-22 9-3	“That is to say that we learned from each other that there are many ways to solve a given technological need, so a systematic analysis . . . “ . . .too many distractions and issues on my mind to critically reflect and I really had to force myself to sit down, clear my mind, and focus”
Recognition	Similar to reflection.	Verbal cue, “remember	Within the context	10-5	“The ones [artefacts] I

	<p>Perception or identification of something that has occurred in the past or sharing and acknowledgement of feelings or emotions that leads to a positive outcome</p> <p>As an “identity”, may or may not need to stand out in a crowd.</p> <p>Some individuals may set recognition as a personal goal. Recognition is an intrinsic element and can empower the person, but can also be a barrier</p>	<p>that”, “I reviewed all”</p> <p>Reference to an action taken to recall.</p> <p>An openness in emotions or an action taken</p>	<p>of success</p>	<p>10-27</p> <p>13-1</p>	<p>remember having the most impact on my learning”</p> <p>“ I reviewed all my projects within the program and reflected on the learning for each “</p> <p>“ I don't feel the need to always share these thoughts with a broader community.”</p>
<p>Reflection / reflective</p>	<p>Thinking about something and then commenting - a “personal perspective” or thoughts and can (sometimes) cross over or develop into critical analysis.</p> <p>Reflection is a thought process that we may be aware of (or not). Reflection allows the individual to think through a process, a communication, and determine what it means</p>	<p>Verbal cue, “I don’t feel, “, “I could see”, “reflection”</p> <p>Pensive Commentary</p> <p>Comments from a personal perspective on the past or in the future</p>	<p>Within the context of the survey (sharing of information)</p>	<p>13-1</p> <p>13-3</p> <p>13-4</p> <p>13-8</p>	<p>“However, I don't feel the need to always share these thoughts with a broader community”</p> <p>“ I could see how this could impact the broader community,”</p> <p>“ As I was unsure if my reflection was truly a meaningful one, “</p> <p>“ The reflection required definitely caused me to grow as an educator and</p>

	to his or her own self.				as a person”
Reinforcement	An action taken to strengthen a current skill, (mental or physical) and to gain additional knowledge	Reference to applying a thought process (reflection) to reinforce learning	Implies a greater understanding resulting in new knowledge or learning	6-1	“ It is also an important part of learning, to reflect, which allows us to connect our newly acquired knowledge with our previous connections.”
Requirement (application of)	A requisite to be undertaken resulting in positive outcome (whether known or unknown at the time)	Reference to a “need to undertake a task	None	14-14	“ The idea that I would need to build and submit a portfolio promoted me to take the time to reflect on the activities”
Resolve	Acceptance of something that the individual cannot control or change	Reference to acceptance	Implies that sometimes the individual must accept information even though they may not be in agreement with (at the time).	3-7 5-9	“ . . . and so I had to self-censor my comments” “ it seems odd that the system can't handle the students enrolled in the course requiring the use of the application. I'm not sure if that's a problem with the system or with planning. “
Support (perception of)	Help, guidance (real or perceived)	Verbal cue, “good feedback”, “were excellent”	Implies that support is needed	6-13 7-18	“ The majority of the instructors in this program were EXCELLENT!” “ I received good feedback”
Technology	Technology is a physical or conceptual tool and implies a means or	Reference to “technology”, means,	Can be physical or conceptual	2-8	“ Graduated 610 included a mini-portfolio, but it seemed

	method of attaining an end.			3-8 3-22	more geared towards the use of technology” “there were multiple group and multiple forms of communication were explored” “ I remember a lot of discussion around new technologies”
Time efficiency	Using time effectively	Verbal due “time”	Implies that good use of time (being efficient), results in better learning	5-22	“ Because the platform is simpler, there was less time wasted in learning it”
Transactional Distance	Understanding that the gap in communication between individuals need not be due to the physical distance, but due to an understanding	Verbal cue, “connected at a distance”	Working to remove barriers in connection between individuals can be a positive tool in online learning	6-8	“ . . .I faced with feeling connected at a distance, understanding why I felt those challenges, and finding ways to bridge the gaps”
Understand expectations	Recognize and/or comprehend what is required, be it, an assignment, activity, or communications	Verbal cue, “understanding of what was expected”	None	16-9	“ My biggest challenge was coming to an understanding of what was expected in the ePortfolio. “
Uniqueness				10-14	“ Novelty of a technology “
PEOPLE FOR SUCCESS					
People for success	Individuals who are of instructor type or other (IT support, peers, SME administrator or student). Coach, facilitator, guide,	Refers to the positive and supportiv e role of	None	4-7 4-13	“ More of a ""sage on the stage"" than a ""guide on the side"" “ Mentor, guide, challenger!”

	instructor, Mentor, Subject matter expert, supporter	the instructor in a given course Verbal cues, “excellent guidance”		4-16	“ . . . provided excellent guidance and was great teacher/facilitator”
TECHNOLOGY USED					
Technology used	Refers to technology used for the ePortfolio resulting in positive and challenging experiences. May be a barrier as well as tool used for success Cloud based, Mahara, Moodle, Other tools (AU’s platform), Weebly, Wikispaces, Wix, and Word Press	Verbal cues, “Word Press”, Mahara” Reference to the name of a technology used for the ePortfolio	Implies that technology is an important tool in the creation of the ePortfolio and that barriers (challenges) with the technology cause frustration or delays. Intent of the ePortfolio may be delayed.	5-2 5-3 5-5	“ I’m using Word Press. I find Mahara non-intuitive and impossible to design.” “ I used Mahara. I didn’t have any difficulties using this software” “ I often work on websites and in various LMS, so I was surprised that Mahara had me stymied.”
PERSONAL MAKE-UP					
Ability	Capacity to perform.	Verbal cue, “able”	None	14-27	“ I was able”
Acceptance	Examining of self through reflection, and acceptance of other’s ideas or thoughts	Reference to self-examination, (reflection), and acceptance	None	7-1	“ . . . that I am able to share and examine my values, even when others are offering constructive criticism”
Active learner	Individual takes initiative	Reference to taking action	None	13-1	“ I always learn a lot

	to learn through various actions (ie., reading, communication, participation)	through reading and participation with others			when I read other forums or participate in discussions.”
Anger	An emotion – irritation, annoyance	Reference to an emotion. Verbal cue, “none of the business”	None	7-7	“ My values, beliefs, and thoughts are none of the business of the instructors”
Bias	A feeling of preconceptions or prejudices that skew a person’s beliefs, values, and thoughts.	Verbal cue, “bias”	None	7-8	“ Yes - I believe we bring biases into everything (especially our values, beliefs and thoughts)”
Communication skills	Ability to communicate, discuss, interact with other individuals positively	Verbal cue, “write objectively” Shows an understanding of the importance of communication	None	7-4	“ I have been trained to write objectively, speaking of myself in the third person and emphasizing team work.”
Constructs	New experiences, knowledge or skills that add to our own person. Each individual has their own skills and knowledge based on personal learning, life experiences, or learning from others and their environment. These form their constructs. A new construct adds to the individual’s current knowledge base.	Reference to learning of new information Verbal cue, “building”	None	7-3 10-7 14-4	“ I can be open, share my values, beliefs, thoughts, and whether an artifact was based on evidence or conjecture” “I had covered all competency categories” “ I enjoyed going through a new learning process and building an ePortfolio”
Creative	An original or artistic personal style incorporated within self.	Verbal cue, “creative”	None	5-2	“ An eportfolio is a creative effort and WP supports all aspects of

					creativity.”
Decisive	Ability to make decisions; firm in decisions made	Verbal cue, “always”	None	8-20	“ . . . but we always should self-reflect”
Disconnect	Feeling of not being a part of a whole. Removed from, disengaged (as it relates to time)	Verbal cue, “connected”	None	6-5	“ My degree has taken longer than most... 7 years I'm sure there were moments of this, but it is hard to stay connected to those moments.”
Emotional (emotion – indicators of)	A state of feeling, happy, sad, frustrated. A statement of expression or passion	Verbal cues, “*not*”, “felt very isolated”, “I could feel the” A statement that references an emotional state be it, happy, frustrated, angst	None	11-7 11-1 11-15 16-4 2-3	“ Why would they [employers] think a student assignment was of any value?” “ Has no value with internet privacy concerns this will secured site with limited access only value is to pass the course” “- I would *not* share the eportfolio” “ I also felt very isolated when working on my ePortfolio” I could feel the ""stress"" of cognitive growth happening, but welcomed the learning journey”
Empathy	Understanding how	Recognizing the barriers that	None	6-8	“ . . . I faced with feeling

	<p>people feel as the individual has experienced similar experiences.</p> <p>Compassion, responsiveness</p>	<p>occur within distance learning</p>			<p>connected at a distance, understanding why I felt those challenges, and finding ways to bridge the gaps I feel when working with people at a distance.”</p>
<p>Emphasis</p>	<p>Highlighting of something that is important through stronger language or through a written style</p>	<p>A descriptive in the writing style to indicate emphasis</p> <p>Verbal cue, “in fact”</p>	<p>None</p>	<p>9-22</p> <p>11-15</p> <p>13-13</p>	<p>“ In fact, I feel I have always used critical reflection,”</p> <p>“ I would *not* share the eportfolio”</p> <p>“ . . . which truly should begin with your FIRST course in the program - not at the end of the journey.”</p>
<p>Excitement (real or implied)</p>	<p>A state of enthusiasm, pleasure or joy</p>	<p>Verbal cue, “with great enthusiasm”</p>	<p>None</p>	<p>13-25</p>	<p>“ Do share what I learn, sometimes with anyone who will engage in discussion on the topics and with great enthusiasm at times.”</p>
<p>Explanatory</p>	<p>Describes statements; provides reasons to illustrate actions taken</p>	<p>Reference to providing reasons or explanation for a thought</p>	<p>None</p>	<p>13-4</p>	<p>“ it was not a good time to advertise my reflection as the content was still a draft and not a completed one”</p>
<p>Generalizes</p>	<p>Makes a statement that involves including all things, people, actions, etc., rather than recognizing each thing, person, action, etc.,</p>	<p>Verbal cue, “most employers”</p>	<p>None</p>	<p>11-8</p>	<p>“ most employers assess you on what you have not the processes”</p>

	should be recognized and analyzed individually				
Indifference	Unimportance; indications of irrelevance	Statements that are non committal	None	17-5	“Sharing? meh.”
Introspect	Reflection, looking inward, examining thoughts or actions	Reference to examining of information – of self.	None	13-14	“The portfolio exercise forced me to examine the course as a whole - and there was a huge amount of content to look at”
Lack of sharing	Implies lack of involvement or lack of contribution	Verbal due, “how to limit access”	None	11-7	“ Students should be shown how to limit access to their e-portfolio to just their instructors and the capstone cohort, so artifacts can be included.”
Lack of understanding	Does not comprehend	Verbal cues, “I didn’t know”, “beyond my comprehension”, “didn’t understand”	None	3-3 3-3 11-5	“ I felt was beyond my comprehension,” “I didn’t know” “ Well.... I did use an artifact for a potential employer who asked me for a writing sample and he didn't understand what I was showing him.”
Motivation	Incentive, compelled to take on or do. May be intrinsic or extrinsic. Internal drive (intrinsic to self). Motivation is an	Verbal cue, “it pushes me” Reference to taking an action because of an intrinsic drive	None	14-14 17-3	“ I think it pushes me to actually hit transfer than the non-reflective process.” “ I hope so, because

	intrinsic element with each individual in varying degrees. Motivation may allow the individual to be empowered or lack of motivation can become a barrier to attaining a goal				that's one of the main purposes I have in completing my Master's degree --to make contributions to the learning community.”
Non-committal	Unimportance; indications of irrelevance	Statements that are non committal	None	17-5	“Sharing? meh.”
Objective	Fair, goal,	Verbal cue, “trained objectively” Reference to identification of the goals (“distinct points”)	None	9-7 10-20	“ As someone from the STEM disciplines I have been trained to write objectively,” “I wanted a good mix and it seemed the chosen artifacts represented distinct points of the MDDE program”
Of-self	Introspect, reflection on one’s thoughts, feelings, or actions	Reference to reflection on one’s own thoughts or actions	None	13-11	“ I know that I might be unique here . . .”
Pensive	Reflective, thinking, pondering	Reference to a mental state of reflection	None	13-13	“ You never truly know what you have accomplished until sit down to ""gather wool""”
Personal and private	As it relates to thoughts or information created providing indications that information, actions, thoughts, are for one’s own self and not necessarily to be shared.	Verbal cue, “I would not”, “do not . . share” Reference to statements indicating the information is personal and private and should not be shared	None	13-14 13-15	“ I did not feel that I 'wanted' to share it with anyone . . .” “I would not voluntarily review and comment on other peoples portfolios. “

				15-5	“ but I do not imagine wanting to share it extensively with external groups.”
Pragmatic	Practical, sensible, and reasonable	Reference to a practical thought process, or following instructions in a reasonable manner	None	7-11	“ I have not been a fan of one or another technology I have always been ""agnostic"" in that sense.” “ We were simply asked to reflect on what we did.”
Pride	Feeling of satisfaction related to an action or activity well done.	Verbal cue, “sense of accomplishment”	None	10-26	“ Others were based on a sense of accomplishment of a job well done or a very positive experience.”
Questions	May incorporate reflection. Queries a thought, believe, activity for its validity.	Verbal cue, “I’m not sure if . . .” Reference to uncertainty where a statement implies a question not yet asked (implied)	None	5-9 13-4	“ I'm not sure if that's a problem with the system or with planning.” “ As I was unsure if my reflection was truly a meaningful one, I did not want to share it with the broader community. “
Reasoning	Individual perceives a path to achieve a goal or continue on with an activity	Reference to providing a reason for not completing a task	None	13-4	“ it was not a good time to advertise my reflection as the content was still a draft and not a completed one.”
Resolve	Determination or an	Verbal cue, “what I intend”	None	13-13	“ A very worthwhile

	<p>understanding of a thought or path for an activity.</p> <p>Indications of a firm decision or action to be taken – an intention</p>	<p>Reference to firm and definite statements; an understanding of how the world works.</p>		<p>3-7</p> <p>5-8</p>	<p>process, which truly should begin with your FIRST course in the program - not at the end of the journey.”</p> <p>“ Canadians are sensitive and so I had to self-censor my comments”</p> <p>“ I used Wix for my 610 portfolio, and it is what I intend to used for my capstone”</p>
Sharing of (of self)	<p>Giving of self, contributing and sharing of one’s thoughts or learnings</p>	<p>Verbal cue, “sharing”</p>	<p>None</p>	<p>13-25</p> <p>13-25</p>	<p>“ one of the biggest impacts have stemmed from forum activities and what was contributed and shared by the community within these activities.”</p> <p>“ Do share what I learn, sometimes with anyone who will engage in discussion on the topics and with great enthusiasm at times.”</p>
Uncomfortable	<p>Lack of comfort or awkwardness within one’s self or within a given situation</p>	<p>Verbal cue, “uncomfortable”</p> <p>Reference to difficulties and frustration, resulting in being uncomfortable in a given situation</p>	<p>None</p>	<p>3-3</p> <p>3-3</p>	<p>“ . . .however, personally I had a difficult time openly expressing my challenges or concerns”</p> <p>“ I didn't have anything to contribute to the</p>

					discussions in one course because I felt so inexperienced in the subject matter, but I was forced to comment anyway in order to get marks , This made me feel uncomfortable”
Unbiased	Impartial, implies an openness to difference views and thoughts.	Verbal cue, “can be open” Reference to sharing of self	None	7-3	“ I can be open, share my values, beliefs, thoughts, and examine “
BUILDING THE CONSTRUCTS					
Achievements	Success and personal satisfaction can be built upon various activities or accomplishments that the individual undertakes or completes.	Verbal cue, “memorable creation”. Reference to an artefact or activity being completed satisfactorily	Implies that achievements whether intrinsic through personal learning or through the completion of an assignment or activity are important and help building personal constructs	10-9 10-13 10-18	“ I selected what were my most memorable creations” “ Meaningfulness to me and my learning within the program - and cross-reference to the competencies” “ It was a really good experience to look at what I had done over these years and look at the friends I made and the projects that I completed.”
Collaboration	Working together for the benefit of the group and for the person’s individual needs and learning	Verbal cue, “team work”, “group projects”	Implies that working together and sharing of ideas contributes to the person’s individual constructs	9-7 3-16	“ . . .and emphasizing team work.” “ . . .all of the courses provided some type of it through group projects”
Community	Peers, cohorts, friends,	Verbal cue,	Implies community is viewed	10-17	“ . . . and look at the

	family, a group of individuals that are supportive to the individual	“friends”, “cohort”	as valuable to building constructs	11-7	friends I made” “ Students should be shown how to limit access to their e-portfolio to just their instructors and the capstone cohort,”
Competencies	Are the skills and knowledge elements that go into various communications, activities. Are intrinsic and are the abilities and know how’s of the individual.	Verbal cue, “competencies”, “samples of my work”, “cognitive gain” Reference to elements that are intrinsic (abilities, skills, knowledge), that are demonstrated externally or used for personal gain.	Implies that competencies contribute to building the constructs of the individual.	11-15 11-20 13-13	“ . . . I would (and have) created a separate www site which borrows elements from the ePortfolio,” “ It would if it [eportfolio] was a professional ePortfolio with samples my work” “ The process of review and reflection on specific outcomes (competencies) allowed threads of cognitive gain or cognitive dissonance to surface.”
Choices	Refers to the options or selections that are available to an individual	Verbal cue, “I have chosen” Reference to a decision being made given various choices in choosing artefacts to be	Implies that choices play an important role in building constructs	2-13 10-8	“ While the e-portfolio was not necessarily mentioned, course outcomes and the eportfolio competencies aligned well to assist artefact selection” “ I have chosen the artefacts that elicited the

		incorporated			most emotion”
Critical analysis	More than just reflection. Expresses an understanding of a prior comment from self or another individual and formulates thoughts for their own understanding. May apply the new information to their own situation and adds to their constructs.	Recaps information Puts new information together Shows an understanding of breaking down information	Implies a greater understanding within a given context.	11-5 11-13	“ I did use an artifact for a potential employer who asked me for a writing sample and he didn't understand what I was showing him. I think it was more of a reflection on him than on the artifact.” “ The process reinforces what you know you know! It assists in a critical thought process of capturing, articulating and demonstrating relevant experiences and knowledge.”
Critical reflection	More than critical thinking. It is in-depth learning, where individuals reflect on their activities, and thoughts, then step back and ask themselves difficult and challenging questions; the purpose is to achieve growth and gain knowledge over time - - and to understand and learn about themselves. Can be difficult to understand the concept of critical reflection.	Reference to resolution or a thought process that results from in-depth thinking about a given subject (in this instance, about the ePortfolio	Implies that learning of self, cognition, and metacognition may have developed from practice relating to critical reflection	5-7 7-7 7-13	“ Mahara works reasonably well, but the problem is not the technology, it is learning how to reflectively write” “ I can't be completely open writing something I am being assessed on and which dozens of other students will read.” “ Even when I was wrong - and yes it happened more than once - ha! I found that

					overwhelmingly I was allowed to pursue streams of study related to the course,”
Critical thinking	The process of the ability to think through questions, concepts, problems logically and rationally. Very similar to critical analysis. Being able to discern thoughts.	Reference to a train of thought, a path taken in order to explain or comment	Implies that the ability to critically think is important to gaining cognitive, metacognitive, and for gaining knowledge.	7-13 7-13 7-27	“I was challenged to think critically about the theory, the practice and the consequence of my learning path” “ Most often I was led to ""discover"" my own logic errors and self-correct to reach sound positions worthy of further exploration.” “ Yes, but the there are always biases. The best one can do is to understand their biases and try to reflect on how they influenced the learning”
Cross-referencing	Ability to follow a logical path of thought and to tie information together	Reference to explaining or tying pieces of information together logically	Implies that the ability to cross-reference	11-9	“ However, certain constraints were imposed: we could not include actual pieces of work (things [work] that could be important for securing employment); although we needed to reference course competencies by number,”

<p>Crucial skillset</p>	<p>A skill or know-how that is an important tool or construct used to build upon other understandings or activities.</p>	<p>Reference to elements such as ‘reflections’ which is a valuable construct to aid the individual in building the ePortfolio</p> <p>Verbal cue, “specific strategies”</p>	<p>Implies that having specific skillsets and abilities are important constructs for the individual</p>	<p>16-6</p> <p>16-8</p> <p>16-9</p>	<p>“ I would advise my peers to make informal reflections on their courses while in the midst of them, “</p> <p>“ The hardest is actually being able to critically reflect.”</p> <p>“ My success would have been enhanced with a clearer outline of expectations and the presentation of specific strategies to create an acceptable ePortfolio. “</p>
<p>Crucial component</p>	<p>An important element or piece that has implications for success</p>	<p>Reference to ‘to start working’, ‘ to start thinking’ as it relates to the process of creating learning and knowledge</p>	<p>Implies that gathering of various important components through the learning process are valuable constructs for the individual</p>	<p>16-15</p> <p>16-16</p> <p>16-15</p>	<p>“ My advice is to start working on the portfolio on day one of the program”</p> <p>“ I think the biggest challenge is to start thinking about right from the beginning of the program,”</p> <p>“ My advice is to start working on the portfolio on day one of the program, by keeping notes (diary)”</p>
<p>Demonstration of competence</p>	<p>Providing evidence of the skills and knowledge elements that go into</p>	<p>Verbal cue, “demonstration of”</p>	<p>Implies that sharing or communicating understanding of concepts or materials is a</p>	<p>14-13</p>	<p>“ there was the process of selecting the presentation tool in my</p>

	various communications and activities. It is not just knowing information, but also providing evidence to others	Providing cues to show a level of competence	valuable construct		case a web site) and learning more about the technology of demonstration to allow the content to flow logically to support the learning process for reader.”
Demonstration of knowledge and learned skills	Providing evidence, sharing, showing, the individual’s understanding of the materials or questions being asked.	Reference to providing evidence through communication of understanding of a process (in this instance	Knowledge and learned skills are important constructs	14-13	“ It was not only the process of reviewing the sum content of the course activities and experiences but the process of selection ordering, and framing the learning”
DE vs traditional education (working in)	Differences between online or distance education and traditional education in a face-to-face environment.	Verbal cue, “non-F2F” Reference to structure in a given environment. Underlining words – new means to learn (through technology) or distance	Implies that there may be advantages to working in a face-to-face environment and the comfort of that environment allows the individual to more actively focus. Implies that structure in a program or course is advantageous to the individual. Distance is the separation of the psychological and communication space to be crossed (Moore,1997, as cited in Kanuka, 2001). It is not a	3-8 14-18	“ I am still uncomfortable with the dynamics of communicating in a non-F2F environment” “ I began working through the eportfolio before it was a course and it was slow and easy to put off. Once it was a class with a schedule, I was much more successful.”

			physical distance. Traditional education refers to face-to-face between teacher and student.		
Direction and delivery	Determining or leaning to a given path or goal and then providing information (real or implied) once the goal is reached.	Verbal cue, “visualize the path” Reference to an action (direction) that leads to a goal, that results in success	Implies that knowing where the individual is heading and how to demonstrate the knowledge attained helps to build successful constructs	14-24 15-8 17-7	“ The biggest success would be learning how to successfully complete the e-portfolio, “ “ So that they [students] can better understand some of the challenges and rewards of being a MDDE student and better visualize the path they may end up on.” “ Have done three talks on the e-portfolio process”
Evidence	Substantiation or proof of knowledge gained from reliable resources (not conjecture)	Verbal cue, “evidence”	Implies that constructs based on evidence, rather than conjecture may have more validity	7-22	“ I certainly was able to present my values, thoughts, etc. and examine the merits of the artefacts based on evidence rather than conjecture.”
Experiences	Are those understandings, skills, capabilities, activities, communications that have occurred previously and that we use or bring forward into future activities, communications,	Verbal cue, “previous learning” Reference to elements brought forward, compiled, and	Implies that experiences help form out cognitive and metacognitive self.	14-6 14-13	“ I was able to synthesize my previous learning . . . ” “ It was not only the process of reviewing the sum content of the course activities”

	thoughts, beliefs	utilized in future activities.		15-11	“ My own professional projects are what lead to job offers for me. ”
Import of aesthetics	Artistic taste, creativity, appreciation for how something looks (as it relates to the ePortfolio)	Verbal cue, “hard to operate,” “cumbersome ”	Implies that if the platform for creating the ePortfolio is friendly, easy to operate, has a clean and aesthetically pleasing looks, and is not difficult, the product and resulting skills form valuable constructs	5-16 5-18	“ I found Mahara very user unfriendly and hard to operate, as well it could not present me with the clean look I was looking for” “ It was pretty straightforward, but making a page visible/ shared and part of the collection was a little cumbersome”
Improvements	Enhancements, adjustments that make the ePortfolio a good platform to use	Reference to enhancements in the platform used (Mahara)	Implies that resulting improvements in the user platform, results in the individual being able to better utilize their skillset and know-how.	5-15	“ . . . I found it less complicated and assume that the application has been developed to be more user friendly”
Incorporate ePortfolio each course	Addition or inclusion of activities relating to the ePortfolio in various M.Ed. courses (from the beginning)	Verbal cue, “one of first courses”	Implies that by incorporating various ePortfolio activities in earlier M.Ed. courses, that the individual would obtain skills and know-how relating to the ePortfolio; adding to the constructs	16-5	“ The e-portfolio course should be one of the first courses. All MDDE courses could have a small e-portfolio component.”
Learner centered	Recognizes or perceives “self” as responsible for own learning. Learner centered is taking responsibility and action for our own learning.	Verbal cues – “us students”, “very hands-on”	Within a distance education context	2-16 2-25	“ . . .it is up to us students how we will apply it.” “ The courses were also very hands on, which meant that I was

					required to apply what I learned or interpreted throughout my learning”
Main focus	Primary or key concern or element that grabs our attention as it relates to a goal to be achieved.	Verbal cue, “important part” Reference to focus on an activity or goal	Implies that being able to identify elements that are of importance (main focus), helps us utilize our various constructs to build more.	5-22 6-1	“ Because the platform is simpler, there was less time wasted in learning it, so I could concentrate on the content” “ It [experiences] is also an important part of learning”
Metamorphosis	More than just change – a “coming out”. Metamorphosis requires change but is greater than simple change. It is a complete evolution of a person through the taking of actions, attainment of knowledge or perceptions of the individual. The individual thinks, does, and communicates different from before.	Implies a striking out or complete change	Implies the change can be positive helping to build constructs	2-3	“ I could feel the ""stress"" of cognitive growth happening, but welcomed. the learning journey”
Methods	The “how” of doing something or the design of undertaking an action or the “tools” needed to take on an action. Methods or methodology are a means to attaining a goal. We attain a goal through the use of various	Verbal cues, “how”, “the kinds of”, “solutions”	None	3-22 14-24	“ . . .there were often several solutions “ “ The biggest success would be learning how “

	tools and may adjust the methods if the means does not work.				
Need for change	Identifies concerns with processes; implies that there are needed changes which would result in success	Reference to problems identified and suggestion to resolve	Implies that change enables the individual to utilize skillset and know how to become successful and helps to build the constructs	16-4 16-9	<p>“ discuss essential features, discuss how the knowledge gained from this course will be applied at your work, etc.) as this was not explained to us during our course.”</p> <p>“ The current process relied on a trial-and-error process whereby folks created a document, waited to discover how it missed the mark and then tried again, based on comments from the instructor.</p>
Peer review sources	Published works that are peer reviewed. Considered by individuals to be valuable forms of valid information	Verbal cue, “reference published works”	Implies that knowing how to identify peer reviewed sources may be a valuable construct	11-7	" Also I would only reference published works (such as papers based on my assignments”
Perceptions	How an individual looks at the world; their views and insights.	Reference to how the individual perceives what a potential employer (or others) may read into as it relates to their	<p>Implies that perceptions may motivate individuals, to take action or not.</p> <p>Implies that the individual uses reasoning as a construct in their decisions not to share information on their ePortfolio</p>	11-15	“ I would *not* share the eportfolio that I developed with a potential employer. Primarily because of how I identify my own ignorance and limitations in certain areas,”

		work in the ePortfolio		11-21	“ Not sure I would want prospective employers to read about my struggles or initial thoughts when starting an assignment/artefact”
Research competencies	Abilities related to questions, investigates, explore, examine	Verbal cue, “by researching”, knowing the content”	Implies having an ability to research, investigate, question, helps to build constructs	16-4 16-8	“For the peers, I would suggest they prepare their presentation by knowing the content they need to present” “ The hardest is actually being able to critically reflect. I would suggest they 1) learn the skills by researching reflection on their own . . .”
Recollection	Different from reflection; includes a memory and recall aspect.	Verbal cue, “I remember”	Implies that the ability to remember facts, experiences, people, etc., can help to build the constructs.	3-22	“ I remember a lot of discussion around new technologies”
Reflection / reflective	Thinking about something and then commenting - a “personal perspective” or thoughts and can (sometimes) cross over or develop into critical analysis or critical reflection. Reflection is a thought process that we may be aware of (or not). Reflection allows the	Verbal cue, “I would have liked”, “I believe that”, “I am not convinced that”, “to reflect” Reference to a belief, opinion, thought,	Implies that reflection (being reflective) allows the individual to examine their beliefs, values, and thoughts, on a given matter that they may have (or not) had experiences with.	5-3 6-1 6-7	“ I would have liked to have more options for backgrounds and layout” “ I believe that we all have experiences with our learning that we can draw upon to continue to grow and learn” “ I am not convinced that these reflections are that useful for learning.”

	individual to think through a process, a communication, and determine its meaning	emotion, desire. Something brought forth from memory, cognitive or metacognitive elements		6-8	“ In 610 for example, I am mostly able to reflect upon the challenges I faced with feeling connected at a distance, understanding why I felt those challenges, and finding ways to bridge the gaps”
Skillset	New, increases, or changes in skills, talents, proficiencies, or abilities	Verbal cues, “ability”, “learned how” Reference to abilities, knowledge, attained, that is built upon.	Implies a learned component that is valuable to the individual in helping to build constructs	11-16 13-22 14-3	“ so my resume might speak to my experience” “ I had learned, and gave me the ability” “ . . . and learned how to share multimedia items such as audio/video clips”
Social perspective	A gathering of individuals with common interests. Social perspective implies an indirect or direct attempt to connect to another individual for the purpose of positively communicating. It is the “social” aspect outside of our work or family commitments.	Comments imply commonality or shared interest with others	None	14-2 14-4	“ I have been successful in finding people to review the work” “ I enjoyed feeling part of a learning community,”
Solution finding activities	Problem solving or explanation, resulting in a desired result. Usually results in personal growth and expansion of	Reference to using abilities and skills to further examine and	Implies that using innate abilities or skills to help problem solve provides a direction for an individual to move forward.	2-26	“ Critical thinking skills were required in most of my courses through the forums”

	knowledge base	problem solve		6-18	“ Yes - I had a theme in mind - what went well, what didn't go well ”
Speculation	Conjecture, thought, supposition, guesswork	Verbal cue, “conjecture”	Implies that speculation or conjecture can lead to examining information and building constructs	7-15	“ In my experience, my artifacts were strongly based on conjecture as it is difficult for me to prove what I stated.”
Teacher Centered	Where the individual receives guidance from an instructor or teacher rather than from a learner centered environment where the responsibility for learning leans towards the learner	Verbal cue, “I teach” Reference to teaching and not being in a learner centered environment	None	9-8	“ I probably have more experience with critical reflection than most people (I teach, assess and try to model reflective skills at the undergrad level) but still find it a difficult process.”
Technology	Technology is a physical or conceptual tool and implies a means or method of attaining an end.	Reference to “technology”, “computer”	Can be physical or conceptual - - positive results experiences help to build the constructs	9-11 10-14 11-3	“ This can come in conflict with good basic language training and even with newer ideas of ""gamification"" which are more behaviorist in theoretical construct.” “ . . . the identification of issues or with the effectiveness of a given technology or tool” “ that is accessible from any computer”
Timing of ePortfolio introduction	Reference to time needed, time spent, lapse of time, and challenges of time.	Verbal cue, “when” “spending”	None	16-5	“ The e-portfolio course should be one of the first courses.”

	Time can be a barrier or a tool in attaining of a goal.	time			
Tools for success	Anything that is utilized by the individual to help build a construct and to be more successful in achieving his/her goals. Artefacts, courses, assignments, creations, reflections, journals	Verbal cue, “exercises”, “self reflection”, “journal”	Implies that as individual’s moves toward their end goals, they gather various tools along the way that help them be successful. These tools help form a foundation for building individual constructs	16-17 16-21 17-7	“ I wrote a private journal for the program from the start and a journal for each course.” “ begin the self reflection process early and do not wait until the ePortfolio course” “ it [eportfolio] needs to be better integrated in the program, with in the introductory course”
Transformation	Positive change, metamorphosis,	Verbal cue, “really enlightening experience”, “I have changed”, Reference to change over time as the individual works through a process	Implies that transformation can be a very positive construct	13-13 14-17	“ The process of review and reflection on specific outcomes (competencies) allowed threads of cognitive gain or cognitive dissonance to surface.” “ It was a really enlightening experience to review the projects that I did and how much I have changed as a result of that [experience] .”
Types of real world	How the individual sees their own world as it relates to distance	Reference to various real world	None	15-3	“ It [ePortfolio] would be most valuable to distance education

	education, language learning, education, the Armed Forces	situations			groups and language learning educators”
POSITIVE OUTCOME					
Achievement(s)	<p>As it relates to the decision to incorporate a given artefact to be included in the ePortfolio.</p> <p>An accomplishment, perceived success, realization</p>	<p>Reference to intrinsic success (real or perceived) based on meaningfulness, memorable, or reflection on beliefs about themselves.</p>	<p>Implies that achievements do not necessarily relates to high grades, but to how the individual perceives the success achieved from a given task.</p>	<p>10-8</p> <p>10-9</p> <p>10-13</p>	<p>“ I have chosen the artefacts that elicited the most emotion (discomfort, pride, anxiety etc.) for me. These are not necessarily the works that got the best grades, but rather works that forced me to rethink and retool my beliefs about myself. “</p> <p>“ Also, I selected what were my most memorable creations “</p> <p>“ Meaningfulness to me and my learning within the program - and cross-reference to the competencies”</p>
Awareness	<p>A mindfulness, consciousness, an understanding. Implies sympathetic or empathetic component to understanding.</p>	<p>Reference to an understanding of their surroundings and their ability to look at a bigger picture as it relates to their own</p>	<p>Implies that deep and meaningful learning may be attained through being mindful and understanding that may result in the individual being supportive of their peers.</p>	<p>14-20</p> <p>15-8</p>	<p>“ Helping others complete theirs [ePortfolio] through my experience.”</p> <p>" So that they [students] can better understand some of the challenges and rewards of being a MDDE student and better visualize the path</p>

		accomplishments in working through the ePortfolio			they may end up on.”
Belonging (feelings of)	Being a part of , being able to relate to others, enjoy the company of.	Verbal cue, “enjoyed feeling part”	Implies that feeling a part of a learning community can be a positive outcome.	14-4	“ I enjoyed feeling part of a learning community,”
Broader community	Consists of the students’ peers, current, or future employers, educational community, and the academic community, where you can demonstrate concretely how knowledge has been gained through a variety of competencies. The assumption is that ‘knowledge belongs to all’ and that “knowledge must be shared with others” (Neuman, 2011, p. 14).	Reference to positive comments relating to the broader community such as “most valuable”, “and rewards”, “make contributions”	Implies that the ePortfolio has a role in the broader community depending on the positive outcomes of the individual’s experience with the ePortfolio.	15-3	“ It [ePortfolio] would be most valuable to distance education groups and language learning educators”
				15-8	“ So that they [students] can better understand some of the challenges and rewards of being a MDDE student”
				17-3	“ . . . because that's one of the main purposes I have in completing my Master's degree --to make contributions to the learning community.”
Cognition	Knowing, knowledge, an understanding, perceptions, reasoning, intellect.	Reference to having an understanding or perception of knowing of a given situation. In this instance, as it relates to having	Implies that knowing or having knowledge, intuitiveness, can provide for positive outcomes in a given situation.	6-15	“ For 2 of the 5 artifacts I felt that I was drawing on an insight that I achieved from that course “
				6-9	“ It's pretty difficult to complete a course (let alone a programme) without having

		experiences from which to draw upon and reflect.		6-10	experiences upon which to reflect” “ These tools and the process of using, evaluating them challenged and clarified my future goals and own preconceptions.”
Competence	Having ability, skills, aptitude, know-how, experiences	Reference to “experiences”. Having ability and know-how based on these experiences to carry out additional tasks; to apply the skills and know-how.	Implies that being competent or having competence as a result of life experiences can result in future positive outcomes	6-22 6-24	“ . . . I received I was able to re-analyze a lot of my experiences and shed a new light on them.” “ . . .that I had learned a great deal, and could apply my learning to real life examples within my career and education, . . .”
Compilation of knowledge indicators	Combining of various tools for success (assignments, discussions, activities), to create a collection of elements that are indicators of knowledge gained especially as it relates to the ePortfolio, a specific course, or degree. A degree is a compilation of knowledge indicators consisting of courses. A course is considered as tool for success as well is a compilation of knowledge indicators consisting	Verbal cue, “ePortfolio” Reference to greater or higher learning as a result of experiences relating to various tools used for success and the ePortfolio.	Implies that there are many different tools that can be used by the individual to be successful (achievements, to be effective). A collection of these various tools of success are compiled and considered as indicators of knowledge (having knowledge, cognition, know-how).	11-1 8-14 8-22	“ An ePortfolio is a great tool to demonstrate learning and ability. ” " I had the opportunity to reflect also on MDDE-603 which I took concurrently so some concepts in that course influenced my portfolio - achieving in some ways a demonstration of those higher learnings.” “ This carried on into

	of various assignments and activities. An assignment is considered a tool used for success.				my e-portfolio, which allowed me to use the critical thinking skills to revisit my earlier course”
Confidence	Self assuredness, certainty	Reference to being able to step forward and provide advice or implies a personal state of being	Implies that being confident helps to enable the individual in achieving positive outcomes.	11-17 16-3	“I already had a job and this was to help me to be better equipped.” “ Advice I would pass on to my peers is don't be afraid t experiment . . .”
Creative	Being artistic, resourceful	Verbal cue, “creative”	Implies that creativity can result in positive outcomes.	5-2	“ An eportfolio is a creative effort and WP supports all aspects of creativity.”
Deep and meaningful learning	Obtained from knowledge (the ‘big’ picture). Attaining authentic knowledge to achieve deep and meaningful learning. Seeking of knowledge or new information. Recognizing the process of learning does not cease after new information is obtained, but that we learn new things every day of our life whether it is accidentally, with intention, informally or formally.	Is conceptual and is more than simple learning of tasks.	Implies a greater understanding of new information through reflection and critical analysis.	6-3 6-18 6-24	“ . . . not only gave many opportunities to reflect on what was being learned but also to put it into practice in a relevant way “ “I had a theme in mind - what went well, what didn't go well, what I could use in administration, what I could use for teaching, and what I could use in my personal life” “ . . .could apply my learning to real life examples”

Desire to share	Giving of self, want or wish to give, being unselfish	Verbal cue, “share”	Implies that the want to share information with others can be a positive outcome	13-24	“ I always wanted to share my increased knowledge with a broader community, . . .”
Empowerment	Attaining of a goal, perception of success. Through the attaining success or a new experience, the individual becomes empowered to take action (or not).	Verbal cue, “to grow”, “build an identity”, Comments that imply success. Reference to achieving more than just a degree; obtaining confidence and knowledge, learning of self	Implies that knowledge gained through achieving various competencies (ie., critical reflection), can provide new experiences and a perception of personal success.	14-4	“ 2) I enjoyed going through a new learning process and building an ePortfolio, 3) obtaining a Master Degree in Distance Education “
				14-8	“The reflection required definitely caused me to grow as an educator and as a person. It helped to solidify my beliefs of teaching and learning and build an identity as a distance educator”
				14-18	“ I learned more about my own learning by completing it [the ePortfolio].”
Experiences (positive)	Incidents, occurrences, skills and understandings	Verbal cue, “experiences” Reference to experiences having positive results and outcomes	Implies that experiences help supports an individual in achieving positive outcomes that are desired or wanted.	2-23	“ Some courses did lend themselves to more critical thinking and these skills definitely helped me”
				6-9	“ It's pretty difficult to complete a course (let alone a programme) without having experiences “
Feedback	A reply, comment, or criticism	Verbal cue,	Implies that appropriate,	7-18	“ I received good

	to information presented to another individual	“feedback”	positive, and gentle feedback can result in positive outcomes for the individual.	16-13	feedback and great help . . “ 4) find an AU mentor (prof) who loves you enough to be brutally honest yet gentle with eportfolio feedback . . .”
Freedom	Ability to act or make decisions of free choice without undue influence from peers, instructors, others. Independence, autonomy, makes own choices	Verbal cue, “would allow” Reference to having made decisions of their own will	Implies that having the ability to make own choices or decisions and to take action of your own choice supports independence and one’s own responsibilities for their actions	3-16 6-13	“ I always raised my concerns with Instructors if I had them.” “ Most would allow students to build their own assignment criteria as long as it met the course outcomes - this is true self-directed learning in action.”
Indicators of accomplishment	Master degree, assignments, courses, and feedback, something that one achieves that helps to progress to the next step in a personal goal.	Verbal cues, “feedback”, “blogs”, “review and reflection” Reference to an activity that is undertaken resulting in positive results (ie., learning experience, improvements	Implies that elements that result in positive outcomes add to the cognitive and metacognitive growth of the individual. These are then used as tools to accomplish further goals or activities.	13-5 13-7 13-13	“ . . . in order to obtain feedback/comment to improve my work.” “ But I routinely write blogs about my learning experience” “ The process of review and reflection on specific outcomes (competencies allowed threads of cognitive gain or cognitive dissonance to surface.”

		in work, competencies)			
Knowledge	New information (whether recognized or not). Perception of gaining new skills or information. Knowledge is a new construct learned or experienced and helps to form us as individuals.	<p>Comment – indication of new information, skills, growth as a result of experiences.</p> <p>A new understanding of a concept</p>	<p>Within a distance education context</p> <p>Implies that knowledge gained can result in scaffolding of information to other areas of life resulting in further personal growth.</p>	<p>13-16</p> <p>13-17</p> <p>14-4</p>	<p>“ so my resume might speak to my experience”</p> <p>“ But even just doing it [participation] for completion of graduation was important because it showed me how far I had come in my understanding of distance education.”</p> <p>“ . . . that I have completed the program is a true success and being able to apply/transfer the knowledge and skills I have learned through this program within my organization.”</p>
Metacognition	Knowing what you know.	<p>Verbal cue, “previous connections”, “reviewing”</p> <p>Reference to applying cognitive skills or information that an individual</p>	Implies that reflecting and reviewing information in a given situation allows us to apply our metacognitive process. These processes can lead to the gaining of further cognitive processes and result in positive outcomes.	<p>14-13</p> <p>6-1</p>	<p>“ It was not only the process of reviewing the sum content of the course activities and experiences but the process of selection ordering, and framing the learning”</p> <p>“ It is also an important part of learning, to reflect, which allows us</p>

		knows to a further activity.			to connect our newly acquired knowledge with our previous connections.”
Personal growth	Development or progress relating to an individual resulting in increased knowledge	Verbal cue, “I grew”, “helped me”	Implies that activities such as critical reflection, can result in increased knowledge and growth.	6-16 8-8	“ I really enjoyed the program, I grew a lot” “ Critical reflection has helped me”
Pride	Feeling of being proud as a result of accomplishing various achievements or goals. A sense of being pleased with oneself	Verbal cue, “sense of accomplishment” Reference to being pleased with accomplishment of a task or a goal.	Implies that it is OK (acceptable) to be pleased or proud of one in accomplishing a task or goal.	10-26 14-4	“ Others were based on a sense of accomplishment of a job well done or a very positive experience” “ . . . simply knowing that I have completed the program is a true success “
Real World	Refers to opportunities, career advancement, increased application of a given skillset or knowledge in the real world	Verbal cue, “within my organization”, help my students” Reference to something outside of course studies.	Implies that the transfer of information to become part of real world or real-life application can be very positive.	14-4 14-7	“ being able to apply/transfer the knowledge and skills I have learned through this program within my organization” “ Learned enough from the e-portfolio experience to help my students, .”
Recognition	A task or activity that is viewed as an accomplishment. Alternatively, an individual acknowledges an activity or	Verbal cue, “build an identity” Reference to	Implies that the process of recognizing growth or as being recognized by others can be a positive outcome.	14-8	“ It helped to solidify my beliefs of teaching and learning and build an identity as a distance educator”

	goal as being a positive outcome	acknowledgin g specific tools for success (ie., case studies) as being positive		2-13	“ I quite liked the cohort programs, which used case studies to guide work through from initiation to completion”
Resolution	Solving of a problem or concern	Reference to resolving a problem, ie., “answered my own question”	Implies that the solving of problems or of a concern can lead to personal growth or knowledge.	2-17	“ . . . with my proposal because I had already answered my own question, it then became a route for me to get my degree finished”
Satisfaction	Satisfied, content, happy with, like, approve of.	Verbal cue, “really liked” Reference to be content or pleased with self, an external activity or goal.	Implies that being pleased and contented is a positive outcome	3-16 5-3	“ I actually really liked that course (one of my favorites) . . .” “ I didn't have any difficulties using this software”
Showcase	Presentation, end result of work, accomplishment	Verbal cue, “showcase”	Implies that ease of accessibility and use to present or showcase work can result in positive outcome	11-3	“ It is an easy way to showcase your work that is accessible from any computer and can be read at leisure”
Success	A result of achievement or accomplishment	Verbal cue, “achieved”, “career” Reference to an achievement being	Implies that a sense of achievement, or of being successful can occur as a result of accomplishment of a task (internal or external)	11-8 11-9	“ . . . most employers assess you on what you have achieved - not the processes you have gone through or how much you have grown,” “ It certainly has

		satisfactory as a result of an action		11-13	potential for career assistance.” “ The process reinforces what you know you know!”
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