# ePortfolios in Post-Secondary Education: An Alternate Approach to Assessment

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## Abstract

*Electronic portfolios (e-Portfolios) consist of set of digital objects capable of expressing ideas, information, arguments and documentation in graphic, text, audio and video formats, These can be tagged, searched, archived, syndicated and displayed in multiple formats. E-portfolios create the opportunity for peer, instructor or general public feedback and commentary and can be an effective tool for reflection on practice. Abrami and Barrett (2005) argue that e-Portfolios may even scaffold attempts at knowledge construction.*

*While an extensive body of research exists on the uses of e-portfolios (e.g., Abrami & Barrett, 2005; Abrami et al. 2008; Ayala, 2006; Brandes, 2008; Crichten & Kopp, 2008; Foti & Ring, 2008), the use of this technology in adult education and, especially, graduate-level education, has received comparably little attention (Butler, 2006). Moreover, the use of an e-portfolio for the final assessment activity of an online graduate program is a unique application of this technology.*

*This paper will discuss and illustrate how digital media can and have been used in the context of both a Masters in Education and professional development contexts to promote experiential learning, critical reflection (Pitts & Rugirello, 2012), transition from learning to practice (Cross, 2012), community cohesion (Ehiyazaryan_White, 2012) and lifelong learning in distance and open education (Batson, 2011). The mixed method on-going longitudinal study presented here reports on the usage of and reactions to the introduction of an e-portfolio as the culminating assessment activity in a Masters in Education program from 2008-2013. Results of a survey of student reactions, perceptions and recommendations will be presented, supplemented by analyses of student documents and recorded student discussions as well as interviews with faculty members.*

*The paper will conclude with guidelines and recommendations emerging from the study to date and a discussion of sometimes conflicting expectations and purposes of e-portfolios, assessment of e-portfolios, and the extension of e-portfolios into professional development in contexts outside of the university.*


***Keywords:*** *instructional rubrics, higher education, electronic scoring tools, assessment*

Electronic portfolios (ePortfolios) consist of sets of digital objects which incorporate the expression of ideas, information, arguments and documentation in graphic, text, audio and video formats. These can be tagged, searched, archived, syndicated and displayed in multiple formats. ePortfolios create the opportunity for peer, instructor or general public feedback and commentary and can be an effective tool for reflection on practice. Abrami and Barrett (2005) argue that ePortfolios may even scaffold attempts at knowledge construction. While an extensive body of research exists on the uses of ePortfolios (see, for example: Abrami & Barrett, 2005; Abrami et al. 2008; Ayala, 2006; Brandes, 2008; Crichten & Kopp, 2008; Foti & Ring, 2008), the use of this technology in adult education and, especially graduate-level education, has received comparably little attention (Butler, 2006). 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. There have been movements in the academy over the past several years, to both support students to better integrate new learning, and to design assessment that is more in keeping with constructivist (Davis & Sumara, 2003) and transformative teaching

and learning practices (Mezirow, J. et al., 2000) that are increasingly being practised in post-secondary education. As Schneider has commented, educators are:

> Taking seriously the fragmentation of knowledge, not just in [their] courses, but through the knowledge explosion in the world around us. Many of the most interesting educational innovations clearly are intended to teach students what we might call the new liberal art of integration. (2004,7)

In the context of online learning, social interaction and emotions have been found conducive to powerful learning experiences (Rivera & Rowland, 2008). This paper will discuss and illustrate how a combination of digital media, social networking features and the cultivation of a community of learners can and have been used in the context of both a Master's in Education and professional development contexts; to promote experiential learning, critical reflection (Pitts & Rugirello, 2012), transition from learning to practice (Cross, 2012), community cohesion (Ehiyazaryan-White, 2012) and lifelong learning in distance and open education (Batson, 2011). The mixed method on-going longitudinal action research study presented here reports on the usage of and reactions to the introduction of an ePortfolio as the culminating assessment activity in a Master's in Education program from 2008-2013. Results of a survey of student reactions, perceptions and recommendations will be presented, supplemented by analysis of student documents and recorded student discussions, as well as comments from faculty members present during student ePortfolio presentations.

The paper will conclude with guidelines and recommendations emerging from the study to date and a discussion of sometimes conflicting expectations and purposes of ePortfolios, assessment of ePortfolios, and the extension of ePortfolios into professional development in contexts outside of the university.

## What is an ePortfolio?

Electronic portfolios (ePortfolios) are a collection of web-based artefacts and interactions with accompanying critical reflections that are posted online and managed using knowledge management and reflection tools. As such, they are more than "simply electronic versions of physical portfolios" (Roberts, 2006). Physical portfolios have traditionally been used in various disciplines, predominantly those that embody a creative element, such as art, music, architecture and design. They have also long been used in the professions and other areas of human activity such as health sciences and teaching, to demonstrate learning in the K-12 sector –and in teacher education, where it is necessary to demonstrate more than just knowledge of an area, but practical elements as well. ePortfolios, however, can provide extra dimensions that a physical portfolio could not.

ePortfolios add the capacity to annotate and link digital objects, which can incorporate the expression of ideas, information, arguments and documentation, in graphic, text, audio and video formats. They are regarded as being "net native", in that they can be tagged, searched, archived, syndicated and displayed in multiple formats, on a wide variety of communication and presentation devices ranging from cell phones to the lecterns of "smart" lecture theatres. ePortfolios are dynamic and interactive, thereby creating opportunities for feedback, commentary, and annotation from a range of people, including peers, instructors, employers, and the general public. They are owner-managed in that different views of the content can be created for different purposes or audiences, and permission to access can be granted or restricted as the owner or creator feels is appropriate.

In the MEd reported here, the ePortfolio is program-centric, allowing students and their various audiences to explore and illustrate how the MEd has fostered the development of the designated core competencies (see Appendix A), promoted through individual courses. More compellingly, however, ePortfolios are facilitating student perception of the MEd and their learning as an integrated and comprehensive program of studies. In this respect, it is providing students in the program with the means to cultivate within themselves both the culture and practice of lifelong and life-wide learning, and also the ability to critically self-reflect on this process, through realizing insights into the instances when these changes occurred in themselves and their learning.

## ePortfolio: A reflective tool

In the literature relating to the advantages and promotion of use of ePortfolios, three main types of ePortfolios have been identified, based mainly on the purposes to which they are applied (Abrami & Barrett, 2005). These three purposes can be broadly termed Process, Showcase and Assessment.

The ePortfolio discussed in this paper combines the first and third purposes above, in that, while the focus in the development stages of the ePortfolio is on the process of learning, the instances of learning moments, and reflection on these in relation to the designated competencies of the program, students are still required to present and discuss a selection from their ePortfolio as a culminating activity. However, the initial inclination of many students was to style their ePortfolio more as a Showcase. They collected samples of their best work, included comments of praise from instructors and peers, and generally displayed their learning as an achievement or end-point. This was in contrast to the instructions and

requirements which called for them to be analyzing the process they experienced through the stages of planning, conceptualizing and completing an assignment; the thought processes contributing towards the formulation of a posting in a discussion forum or how they arrived at the strategies they used to overcome a difficult situation in the workplace. For this reason, and to emphasize the formative, process-oriented nature of reflective practice, students are now advised to submit their early drafts for review by faculty and peers before full development is undertaken. This and other changes will be discussed in the concluding sections of this paper.

Abrami and Barrett (2005) note that ePortfolios can scaffold attempts at knowledge construction, in, for example, the application of new learning to the workplace. Making the transition from formal learning to implementation in the workplace is particularly important in professional graduate programs, as mentioned earlier. This scaffolding of knowledge construction in ePortfolios is supported by research such as that of Lind (2007). Lind conducted a pilot study in which pre-service music education students were asked to keep ePortfolios documenting their learning and fieldwork experiences. She found that, by this means, the students actively demonstrated connections between their course work and their practicum work. Students also felt that the reflective aspect helped them think "deeply about their pedagogical philosophy and about what was important to them as teachers" (Promising Practices, p.4). Thus it seems that the reflective aspect of ePortfolios is an important element in the transition for students from formal learning to workplace experience. The issue then becomes: how best to encourage, foster and scaffold students' development of critical reflection and reflective practice, if, indeed, they have not brought these practices to the program, in order for them to understand themselves as lifelong learners and the implications and transferability of this understanding.

On the Edutools website, which provides a site and method for comparing and selecting ePortfolio software, as well as a list of definitions, the topic of reflection is mentioned as follows:

> [Templates for] reflection support conscious and careful consideration about one's actions and about the thinking that accompanies actions. One intended pedagogical impact to the process of reflection is to enable the learner to generalize lessons learned beyond the context in which they were learned and be better able to cope with new situations (Edutools, 2007).

In a well-conceived process ePortfolio, as implemented in this program, learners create a repository of artefacts, consisting of assignments and other products they have constructed, as well as interactions they have experienced during the learning process. These artefacts are accompanied by reflections on the learning experience. Reflections document instances of learning moments and development of metacognitive processes, and keep track of goals and progress. In addition to their contribution towards ePortfolio development, these reflections can be used to create resumes for job applications, notes for interviews, and also provide reminders of effective strategies to use in workplace situations, strategic planning, problem-solving and decision-making.

## Purposes of ePortfolios in the MEd Program

As an integral component of the MEd program, the ePortfolio serves a variety of purposes. However, as the ePortfolio only became compulsory for students coming into the coursework stream in September 2012, there is still a "long tail" of students already in the program who didn't start working on their ePortfolios – or even realize the requirement – until well into, or near the end of their coursework. It is therefore anticipated that the ePortfolio process will continue to change and be modified and refined over the next 2-4 years as these students gradually reach program completion and information from this longitudinal research study feeds into the development.

As it has been conceptualized and is currently implemented, the MEd ePortfolio serves firstly as means for students to document their learning journey and to bring their learning moments into conscious awareness. It also allows students, together with their peers and instructors, to visualize, share, and celebrate program milestones. Secondly, ePortfolios add a critically reflective component to student learning through selection, annotation, and public demonstration and discussion of course artefacts and related experiences. Overall, the intent of the MEd ePortfolio is to encourage thinking beyond coursework, moving toward reflective practice, lifelong and life-wide learning, and future possibilities outside of the MEd program. Students are expected and encouraged to begin collecting artefacts and reflecting on them from their first core course in the program. In fact, this course now includes an assignment aimed at providing students with their first introduction to how to select and reflect on an artefact. Eventually, all students coming through the coursework stream will have a considerable collection of artefacts, with accompanying reflections, by the time they complete their program and are ready to present and discuss their learning journeys as exemplified through their ePortfolios.

The third purpose of the ePortfolio is to provide coursework students with material and accompanying critical reflections to support them in their final "capstone" presentation and discussion of their achievements in

the program, mapped against the core competencies of the program. This presentation represents a more realistic alternative to the former written and oral comprehensive examination, as the philosophy behind process ePortfolios fits better with the constructivist pedagogical approaches now employed throughout the program. As the final capstone activity, students prepare a culminating, integrative presentation based on a selection of five assignments and other artefacts, such as experiences, as well as reflective annotations, interactions, and feedback distilled from the ePortfolio they developed throughout their program. This presentation is reviewed by at least one faculty member, and a synchronous discussion is scheduled, to which all faculty and MEd students are invited. Although there are six areas of competency specified as outcomes of the program, a deliberate decision was made to restrict students to selection of only five artefacts for presentation, in order to encourage them to identify the range of competencies they have developed through each of their courses, as represented by any single artefact. During the culminating discussion, the faculty member(s) and student explore the learning demonstrated in the ePortfolio, the evidence of development of the competencies illustrated in their selected artefacts, and the process through which learning occurred. One final purpose of the ePortfolio is to scaffold the development of an ePortfolio for students to use for personal or professional reasons, such as sharing their work with peers, or presenting samples of their work to potential employers, or for promotion.

## Survey results and discussion

When ePortfolios were initially being trialed as a possible replacement for the comprehensive exams, a survey of a random sample of past and present students, both those who chose an ePortfolio and those who preferred the comprehensive exams, was carried out, to gauge student receptiveness. A total of 52 students responded to the survey, which included open-ended comments. Aspects queried in the survey included: level of technological expertise; reasons for choosing (or not) an ePortfolio; student perceptions of ease of use of the software; and recommendations for improving support in the development phase, software, and the process. Some demographic data was collected, since, because of the open and online nature of the institution, the age-range of our students tends to be higher than that of most other graduate programs. However, as the highest percentage of respondents was in the 50-59 year range, and this group also reported being the most comfortable with the use of technology, age was discounted as a factor in the electronic aspect of ePortfolio development for our students. While full results of this survey and focus group comments are reported elsewhere (Kenny, Moisey & Hoven, 2010), findings pertinent to the on-going study are presented below.

In order to better direct the support provided to students developing their ePortfolios and to inform institutional selection of an appropriate software application as the vehicle for ePortfolios, students were asked their reasons for selecting either ePortfolios or the comprehensive exams. These results are presented in Tables 1 and 2 below. As a result of student responses to these questions, and some comments in the focus groups, the original software application, Me2U (based on elgg functionality), was subsequently replaced by Mahara. The selection of Mahara was based on student input, as well as extensive research indicating that it is an open-source web application with a relatively intuitive graphical user interface and is compatible with Moodle, the learning management system used at this institution.

The first set of responses that were reviewed are shown in Table 1: the reasons for choosing to complete an ePortfolio by those students who did choose this option. As can be seen in this table, the majority of students who chose to do an ePortfolio stated reasons in the metacognitive realm, relating to reflection on and monitoring of learning. This metacognitive approach – the development of which is one of the purposes of introducing ePortfolios - was also revealed in the ePortfolios of these early students, with strong themes of metacognition and critical self-reflection. Statements such as the following were typical of students' comments in this area.

> The ePortfolio option portrays a wider range of skills--written and oral as opposed to just oral--I didn't take the thesis route which would do something similar, but the ePortfolio beats them all for its ability to show a range/variety of skill sets.

### Table 1. Participants' reasons for doing an ePortfolio.

| Reason | n |
|---|---|
| To broaden & consolidate my conceptual knowledge | 16 |
| To reflect on what I've learned & apply it in my work | 20 |
| To record my learning journey | 19 |
| To develop new skills | 10 |
| A convenient way of storing my assignments | 7 |
| To help me seek future employment | 13 |
| Other reasons | 6 |

**Note:** This table reports only on the responses of students choosing to do an ePortfolio.

Comparatively, the stated reasons for not choosing to do an ePortfolio were much more pragmatic, with the sense of ePortfolios being too time-consuming as the predominant response, as seen in Table 2 below.

**Table 2. Participants' reasons for not doing an ePortfolio.**

| Stated Reason | n |
|---|---|
| Takes too much time | 6 |
| Concerns about privacy & confidentiality | 1 |
| Too difficult to use the Me2U program | 1 |
| Uncomfortable about reflecting on what I've learned or done | 0 |
| Uncomfortable about others seeing my work | 1 |
| Other reasons | 24 |

**Note:** This table reports only on the responses of students choosing not to do an ePortfolio.

In addition to being seen as too time-consuming, the fact that ePortfolios were only introduced when many students were at the end of their program was also a dissuading factor. The following comments were typical of several on this point:

> The option came too late, and it would take too much time to go back and pull all the materials together.

> I found out about this choice too late in my studies. I would have liked to know about it sooner so I could plan and reflect as I go through the course

Additional questions were posed in the survey regarding appropriate supports, resources, and structure that students saw as being helpful to the ePortfolio development process. Responses to this question are found in Table 3 below.

**Table 3. Which of the following resources (or facilitating factors) would be helpful for you in creating your ePortfolio?**

| Stated reason | Count | Action taken |
|---|---|---|
| Videos of how to use Me2U [the software application at the time of the initial trial] | 21 | Mahara videos implemented |
| Videos of past students discussing how they created their ePortfolios | 24 | Not yet |
| Samples of ePortfolios accessible from the ePortfolio website | 42 | Implemented |
| Reference articles on how ePortfolios are used elsewhere | 24 | Implemented |
| Suggestions in MDE courses on what to include in my ePortfolio | 40 | Partially implemented |
| A full course on ePortfolios | 14 | In process |
| A checklist of items to include in my ePortfolio | 36 | Not implemented |
| Other resources (please list them in the comment box to the right) | 12 | Some implemented as below |

**Note:** Students were asked to select all that apply. Further explanation of action taken appears below.

It seemed, therefore, that the predominant resources that students felt would be most helpful were: samples of ePortfolios from past students; having suggestions of what to include in ePortfolios embedded into their courses; and a checklist of what to include. Although the provision of videos was also a strong suggestion, comments such as the following mitigated against this option:

> I actually would prefer text to video from students about how they approached their ePortfolio, or possible a brief audio file. Video is not always convenient, and I sometimes feel it is overused.

In response to having a full course on ePortfolios, students were less enthusiastic, preferring to "have it counted as an elective … otherwise, would never pay full course price for it". This suggestion to have the ePortfolio development counted as a course towards the MEd is now in the approval stage with the appropriate university committee and expected to be in full implementation within 18 months.

Other suggestions and requests included (in order of popularity):

1. An ePortfolio website
2. ePortfolio "Best practices" or Top 10 Tips
3. Being able to speak with a person who has either completed his/her portfolio or a faculty member
4. Specific sessions on the topic (2hr online sessions).

Overall then, it seemed that the introduction of ePortfolios would be a positive addition to the MEd program, with the provision of appropriate resources. The following year, therefore, the decision was taken to make

it a mandatory component to replace the comprehensive examinations. A process type of ePortfolio was introduced and became mandatory for all new students in September 2012, with the emphasis on development from the first core course and on-going accumulation throughout the program. The following section will detail the development of resources, support structures and processes in response to comments and suggestions from students in the survey, in focus groups, and in on-going interviews.

## Current implementation, refinements and discussion

Since September 2012, over 50 students have completed ePortfolios to graduate, with the percentage of students choosing ePortfolios over comprehensive exams now well over 60% (including those enrolled prior to 2012). In response to student concerns about privacy and confidentiality, the decision was taken to choose an ePortfolio application that could be password-protected. At the same time, it also needed to be open source, relatively easy to use and maintain, exportable to other applications (to enable students to continue building on their ePortfolios after graduation), and capable of accommodating a range of different media and links, both internal and external.

A major contributing factor in the choice of Mahara as the preferred software application for ePortfolios, is the fact that it can be hosted behind the university password-protected firewall, while also providing several grades of openness and time-sensitivity for those students who wish to give access to possible employers or others outside of the university community. Another major advantage of Mahara is that is designed specifically for building ePortfolios, so the in-built features are quite powerful for this purpose. However, to continue to provide choice and flexibility for students, Mahara is not mandated, but rather students who can demonstrate that they have sufficient technical expertise to create equivalent (or better) functionality in another software application are free to choose that application. Looking at the total number of students doing ePortfolios, the number who choose another application is very low, with fewer than 5% of students choosing other applications such as Wikispaces, Weebly, and Wix, all of which are more blog-oriented or website hosting, rather than being purpose-built for ePortfolios as Mahara is.

Another advantage of using Mahara has been the unexpected emergence of learning communities around the ePortfolios of several students. Since one of the requirements for ePortfolios in the program is that they be open for comments and feedback from other students and faculty, this has become the vehicle for student interaction and the development of a learning community. These communities are emerging both in the comments/feedback-response part of the pages of student ePortfolios as well as within the Group function of Mahara. This function incorporates both a "Wall" feature similar to social networking applications, such as Facebook©, for posting announcements such as the opening of an ePortfolio for feedback or a presentation date and Discussion Forums for general queries and responses.

Referring back to Table 3 above, many of the suggestions from students have now been implemented to assist with the ePortfolio development and presentation process. Since Me2U has now been replaced by Mahara as the preferred vehicle for ePortfolio creation, "how-to" videos using screen capture software and voice-over instructions have been created for Mahara. These have been posted both on the university-hosted, password-protected Mahara site and in a purpose-built Moodle course-like site where most of the other new and existing resources and support materials are now located. Two videos have been added to this site, with the main ePortfolio instructor explaining what ePortfolios are and providing advice on both how to navigate the site and the ePortfolio process. Additional audio instructions have been added to other sections of the Moodle course site. As students present good quality ePortfolios, permission is requested of them, for their ePortfolios to be posted on the Moodle and Mahara sites. These samples are also annotated for the specific or general features that recommend them. These include concepts such as incorporation of Universal Design, the use of various organizing features such as Concept Maps or Matrices or introduction of workplace experiences, all of which demonstrate the different learning styles of students. Several students have mentioned that they find these samples extremely valuable to show them the range and variety of what is possible and acceptable.

> As one student conceptualized the ePortfolio:
>
> As a method of choosing appropriate artefacts, I created a table outlining each assignment, discussions, and other related work (mainly from the core courses) then I listed the competencies each covered.

Another chose to create a mind map organized around the competency areas and then added artefacts that she felt were appropriate to each competency area. Yet another used a matrix with hyperlinks. Others focused on choosing experiences or assignments that they thought represented the most significant learning moments for them and then proceeded to draw out the competencies inherent in each of these and reflect critically on how the acquisition of those competencies mapped across to their own learning journeys.

Most of the "other suggestions" from student respondents to the survey and in focus groups have now been

introduced into the program as well. For example, starting with the first core course and the main technology course, an ePortfolio assignment has now been incorporated into the assessment for these courses. This action now provides students with a guided opportunity to begin to understand the purposes and practicalities of creating an ePortfolio, at the same time as being the means by which they make a timely start on the development. This is also the time when they begin to become familiar with the Moodle site, Mahara, the MEd Core Competencies (see Appendix A) that they need to address, and the requirements of the presentation at the end of their program. As part of becoming familiar with Mahara and the Moodle site, students are invited to regular, synchronous information and presentation sessions in which completing students are often presenting their ePortfolios. These sessions, conducted using Adobe Connect™ are all recorded and the links posted on the Moodle course site. Additional synchronous sessions are scheduled each month for specific questions-and-answers and student-guided discussion about how create an ePortfolio and how to use Mahara. It is through these sessions that the program has responded to the suggestions for scheduled sessions, for student samples and the "Top 10 Best Practices".

The ePortfolios are graded on a pass/revise basis, rather than having specific grades allocated. The decision to go down this path was based on the understanding that the extent to which different students can acquire or reach a stage of critical reflection is not necessarily a function of teaching or learning in a formal program. In fact, this aspect remains one of the on-going goals of this ePortfolio project: to identify characteristics of learners who can critically self-reflect on their learning and from these, to create additional or expanded support resources to scaffold the development of this metacognitive facility among other learners. The formative process of preparing for and actually presenting is therefore quite extensive and intended to support students through to success. Although, as indicated in Table 3, a checklist of what to include has not been implemented, this formative, staged approach seems to be a more effective pedagogical alternative in fostering critical self-reflection among graduate-level students. The stages, as provided to students, that are now in place are as follows (see Appendix B for full instructions to students):

1. Begin creating the ePortfolio from the first course of the program, focusing on reflection on acquisition of the competencies in the context of the learning journey
2. Open the ePortfolio to the instructor for early feedback
3. Respond to comments and make revisions to instructors' satisfaction
4. Open ePortfolio to other students for feedback and comments
5. Revise and respond accordingly
6. Choose 5 most representative artefacts and sign up for presentation
7. Present and discuss ePortfolio with instructors and other students
8. Make additional revisions and refinements in response to comments during the discussion and from written feedback provided after presentation
9. Submit to instructor(s) for final approval

## Recommendations & Conclusions

The literature on the uses of ePortfolios in graduate programs is starting to indicate similar issues and recommendations to the program discussed in this paper, particularly in professional programs (Waye and Faulkner (2012). Some of the issues include the difficulty that some students find in being able firstly, to understand what critical self-reflection means and secondly, how they can articulate their experience of it over the duration of their MEd program. At this point, a series of questions are posed to students in the feedback provided. These questions are designed to stimulate students' consideration of their reactions and thought processes at different learning moments. There is still confusion among some students about the differences between personal, academic and professional reflection, which to include, and how to express these. This will be an on-going focus of this longitudinal study.

Another issue related to critical reflection and reflection on practice, is the common misunderstanding among students about the process nature of the ePortfolio in this program. In their first attempts at creating a reflection on their artefacts, many students style their discussion as a showcase of their achievements, with little or no critical self-reflection. In their responses to feedback mentioning this, they often respond with comments such as "I want to use my portfolio to impress my employer" or "I thought this was a good place to show how well I have done in the program and how much I have learned". Again, how best to support learners to understand the importance of critical reflection and other metacognitive aspects of their learning will comprise one part of the on-going research study.

A further issue, unfolding for instructors, is the intensive nature of the review and feedback process of ePortfolio development. While the current implementation is an extremely responsive approach, and in keeping with constructivist principles, it is labour-intensive for the instructor(s) involved. In the program discussed here, steps are being taken to build in more inviting forums

and features for students to become more involved in this process, through the creation of venues for communities of learners to interact more effectively. This is beginning to occur with certain groups of students at different times in their program. However, this is also a topic for on-going observation, documentation and research.

Despite the issues discussed above, the introduction of ePortfolios in this program is viewed as a moderate success – and certainly a step in a productive direction. As one faculty member commented, "I was skeptical of the value of ePortfolios, but after going through the process with [this student] I can really see the difference in how [this student] can now see her learning from the program and suddenly the lights went on". This paper concludes with the positive comments of three students who completed ePortfolios in the last year, since the implementation of the refinements.

> While creating this reflective learning journey presentation I quickly became aware of its benefits. Reflecting on my learning path has enabled me to identify new awareness, areas of improvements, and foster critical thinking regarding my work throughout the program. The addition of ePortfolio to the [MEd] program demonstrates [the] University's commitment to ensuring a quality learning experience.
>
> Doing this ePortfolio as a reflective exercise has been a great exercise for me. As I was driving to work the other day it occurred to me that I really have learned a lot from the program. It was only the reflection that brought this thought. I had been thinking that I had done the program but really my life has not changed much. But that reflection thought showed me that I have learned many things I did not know before like: research, DE vocabulary, technologies, teaching and learning theory. I provide guidance and help to people struggling with a computer program or a program design problem and hear myself using the language, the ideas and theories I have gained from this program. I amazed myself with this thought. It was only through doing the work of putting this ePortfolio together that I came to the realization that I really did learn something.
>
> What began as my final MDE Program assignment has now become an organized compilation of both my academic and employment artifacts and related reflections. Once again the process has become not only an example of constructivist learning, but transformative in nature. This ePortfolio highlights not only my learning and reflections, but also further clarifies my teaching and learning values, principles, challenges and accomplishments.

These comments demonstrate the value of ePortfolios to students in better understanding their own learning, the beginnings of providing them with the metacognitive facilities to relate their learning, in all its forms, to their workplace activities and contexts, and also the effectiveness of ePortfolios as a transformative learning tool.

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## Appendix A

## The MDE eportfolio: Core Skills, Knowledge & Competencies

To build your portfolio during your program, you will be expected to address the core competencies listed in this document. Consider how each of these competencies relates to your studies, life, and profession. Then, in your eportfolio, fulfill these requirements by incorporating each of the following:

- Discuss and reflect critically on these competencies, your acquisition of them, and how you came to reach this acquisition: your critical self-reflection on your learning moments;
- Demonstrate your abilities in each area by providing examples of your work. Relate the process of completion, or experience of these examples, to specific sub-points of the competency areas. You may upload your papers, audio files, video files, presentations, forum postings, or other learning objects to illustrate your demonstration of, and reflection on your learning. You can also link to websites and blog postings. If you refer to sources that you did not create, be sure to cite your sources. If you include comments by others (such as in a Forum Posting, or instructor comments on a paper), either ask their permission to include it or erase their name(s);
- Critically self-reflect on your experience and growth as a learner and professional.

You may not be able to respond to every detail listed for each of the competencies, but you should be able to address many of them on the basis of different pieces of assessment and different activities you have participated in, or learning experiences, formal, informal, and non-formal throughout the duration of your program.

### 1. Problem Solving, Analysis, & Decision Making

These competencies involve providing creative solutions to emerging problems in the field of Distance Education now and in the future. Examples of these competencies are listed below.

1.1. Recognize problems

1.2. Define the aspects of problems

1.3. Formulate questions

1.4. Find and access information

1.5. Critically evaluate the relevance of information for a given situation

1.6. Compare alternatives using critical analysis

1.7. Make reasoned arguments using critical reflection, leading to rational solutions.

1.8. Justify these solutions

1.9. Present them to others

1.10. Recognize the wider implications of specific knowledge

1.11. Adapt solutions to suit varied situations.

### 2. Instructional Design & Development

These competencies involve applying instructional design models, concepts and skills to solve instructional problems in Distance Education. Examples of these competencies are listed below.

2.1. Critically analyze and discuss the implications of personal perspectives and epistemological orientations for the teaching-learning process

2.2. Appropriately apply systems theory and systems analysis techniques to instructional design situations in distance education

2.3. Describe and appropriately apply a range of learning and motivational theories to instructional design situations in distance education

2.4. Describe the activities of the instructional design process and the advantages and disadvantages of using them in distance education contexts

2.5. Develop instructional products or learning objects in distance education

2.6. Critically analyze and discuss the common criticisms and controversies relating to the use of traditional and emerging instructional design models in distance education

2.7. Apply instructional design principles and models in distance education, in your workplace, or in other instructional contexts.

## 3. Communication Technologies and Networking

These competencies involve the critical analysis and the appropriate application of communications technologies and networking in Distance Education. These technologies might include: asynchronous technologies, synchronous technologies, social software, "push" technologies, mobile technologies, and computer-assisted instruction. Examples of these competencies are listed below.

3.1. Use a variety of communication and document-sharing tools to create, reflect, and communicate with others

3.2. Analyze and evaluate the various applications and implications of these technologies

3.3. Justify the applications of these technologies in real-life contexts on the basis of theory and research

3.4. Compare and evaluate the relative advantages and disadvantages of these technologies in various distance education contexts

3.5. Apply these technologies in distance education and in real-life instructional contexts.

## 4. Communication & Interpersonal Skills

These competencies involve demonstrating your ability to communicate, interact, and collaborate effectively and appropriately in various contexts. Examples of these competencies are listed below.

4.1. Write clearly and in a style appropriate to purpose (e.g. assignments, essays, published documents, and theses)

4.2. Construct coherent arguments and articulate ideas clearly to a range of audiences, formally and informally, through a variety of techniques and media

4.3. Justify and defend your ideas orally and in writing in meetings, forums, seminars, exams and other contexts

4.4. Support the learning of others when involved in teaching, mentoring, moderating, collaboration or demonstration activities

4.5. Participate and contribute effectively in collaborative group activities

4.6. Demonstrate effective design, delivery and critical evaluation of presentations, computer conferences, or seminars

4.7. Work cooperatively with diverse groups and individuals both within the university and/or in the workplace

4.8. Organize, and convey your ideas effectively through a range of communication skills and work collaboratively and in teams.

## 5. Research

These competencies involve applying effective research knowledge, and skills in order to understand and analyze instructional contexts, problems and issues in Distance Education, its role in the broader educational context, and to synthesize and critically evaluate these. Examples of these competencies are listed below.

5.1. Frame effective and meaningful research questions

5.2. Identify, discuss and apply theoretical considerations to proposed research

5.3. Access and critically evaluate sources and content for quality, applicability and relevance

5.4. Critically review literature both broadly and in-depth

5.5. Formulate questions and reasoned arguments, leading to rational conclusions

5.6. Summarize and synthesize information with a view to pursuing deeper understanding

5.7. Effectively communicate information, arguments, and analyses in the discipline of Distance Education, in a variety of forms, to suit different contexts and audiences

5.8. Critically analyze the issues and discuss the wider implications affecting the use of information

5.9. Conduct effective interviews for research purposes

5.10. Demonstrate the use of communications and other technology-based research tools

5.11. Describe and adhere to ethical practices and institutional policies throughout the research process.

## 6. Management, Organization and Leadership

These competencies involve knowledge, understanding and skills pertaining to the management and leadership of organizations with regard to Distance Education considerations. Examples of these competencies are listed below.

6.1. Analyze the current and future climate of the distance education and distance learning industry, and formulate strategies to respond to that climate

6.2. Describe and analyze the business and administrative functions in distance education organizations and critically discuss how business decisions affect financial and non-financial work results

6.3. Make considered recommendations regarding the selection of appropriate learning technologies and assure that these selections meet organizational needs

6.4. Outline and critically compare the relative costs of appropriate technology-based communications methods in distance education and ensure that the organization is receiving a good return on investment

6.5. Manage workload, other commitments, and information needs within time and structural constraints (in both personal and team management situations).

## Appendix B

## Developing your eportfolio and Scheduling your eportfolio Presentation and Discussion

**Scheduled Adobe Connect Sessions:** eportfolio presentations and discussions will be scheduled for the sessions listed on the CDE Moodle eportfolio support site. Sessions will be 2 to 2.5 hours in duration, depending on the number of eportfolios being presented and discussed. No more than 3 students can therefore present in any one session. If all scheduled sessions are full and there is high demand, the instructor will create additional sessions as appropriate.

Presentation time will be limited to 15 minutes for each student, with an additional 20 - 25 minutes of questions and discussion.

### Steps in the eportfolio Process

1. Assemble the collection of eportfolio artefacts you have made over the duration of the M.Ed. program (starting as early in the program as possible!), including the accompanying reflection on each (this can take 2-36 months).
2. Choose the five (5) most representative artefacts and accompanying critical reflections.
3. Compose the first draft of your eportfolio using Mahara or other suitable software that includes the facility for others to provide feedback that is visible to all visitors (can take 2-4 weeks).
4. Contact the instructor(s) and ask them to review your eportfolio. Set the permissions to provide access for both, and send the URL via email. (can take 2-4 weeks).
5. Review their initial feedback, which they will post on your eportfolio pages. Make revisions as necessary and include your comments on the revisions you have made in the Feedback section below each page (can take 2-8 weeks as this is often an iterative process).
6. Open up your eportolio to «All logged-in users» in order to get feedback from other students and post the link in the General Discussion Forum on the CDE Moodle eportfolio Support site and in the Mahara eportfolio user group.
7. Respond to the feedback received from other students on your eportfolio pages, and make revisions as appropriate (1-2 weeks).
8. Complete the presentation draft of your eportfolio.
9. Schedule your eportfolio presentation and discussion. Sign up for one of the scheduled Adobe Connect sessions on the Sign-Up page.
10. In the Adobe Connect session, present your eportfolio to the instructor and other students in attendance – a maximum of 15 minutes is allocated for the presentation component (3 minutes per artefact). Answer questions and participate in the ensuing discussion about your learning, competency attainment, and capacity to reflect critically on your learning, as represented in the eportfolio.
11. If necessary, make the required modifications or refinements requested by the instructors and obtain final approval on your eportfolio.
12. Complete the Application to Graduate form.

## Appendix C
## Additional ePortfolio resource sites

### General information on ePortfolios

http://electronicportfolios.org/portfolios.html

http://www.jisc.ac.uk/eportfolio

http://www.jisc.ac.uk/publications/publications/effectivepracticeeportfolios.aspx

http://www.eportfoliopractice.qut.edu.au/

Information on Reflection (by Helen Barrett)

http://sites.google.com/site/reflection4learning/Home

http://sites.google.com/site/reflection4learning/why-reflect

Developing your ability to reflect critically

http://sites.google.com/site/reflection4learning/recipes-for-reflection

http://sites.google.com/site/reflection4learning/models-of

http://sites.google.com/site/reflection4learning/teachers/nc-reflection-model

http://electronicportfolios.com/reflection/MOSEP-Module2.html

Teacher Education ePortfolios

http://electronicportfolios.org/teachers/index.html

http://manual.mahara.org/en/1.7/

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Dr. Debra Hoven is an Associate Professor in Distance Education at Athabasca University, Canada, where she teaches and supervises graduate research students in the areas of innovative pedagogies for online and mobile contexts, emerging approaches to instructional design for distance education, and the possible roles of social software and virtual worlds in promoting social and emotional cohesion and engagement in online learning and professional communities. Debra has a strong interest in the evolution of learning theories in the context of learner co-created content in online, mobile and other technology-enabled learning environments. Another major research interest is multimedia and digital storytelling, particularly in aboriginal education and the evaluation of appropriate technology solutions, such as ePortfolio applications, in intercultural contexts. Debra has considerable experience teaching languages and teacher education in Australia and several Asian countries and now teaches in the online Masters and Doctoral programs in the Centre for Distance Education.

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