



**Electronic Portfolios and Higher Education:
On the Road to Assess Authentic Academic Achievement**

By

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Introduction

Change in higher education assessment does not come easily. Many higher education institutions are unclear about how electronic portfolios (ePortfolios) fit with their mission and have found that achieving widespread adoption by faculty is difficult. In my two years experience in higher education, it was clear to me that instructors and students need to have confidence about the shift in practice. They need to have clear information and, if possible, concrete examples of how the process of ePortfolio assessment will account for students' growth and progress.

Although online learning has made great strides in higher education in the last few years, currently there is a great need for expertise on ePortfolios. The theory and practice of this important assessment technology has become an important necessity in higher education. This need arises out of the recognition that ePortfolios may provide more benefits or better experiences in assessing academic achievement of instructors and learners – particularly, a comprehensive overall assessment of the students' success -- than the traditional written and oral comprehensive examinations currently in place.

ePortfolios and Higher Education: on the Road to assess authentic academic achievement is a straightforward approach to introduce the notion of the value of that technology for assessing educational success in colleges and universities. Currently different higher education institutions are requiring students to have writing portfolios to demonstrate their proficiencies for admission, selection, learning and evaluation purposes. ePortfolios, far away from understanding evaluation just as 'paper and pencil examinations', include videos, artwork, essays, dioramas, stories, news, poems, novels, blogs, and many other creative presentations and products (Hewett, 2008, p. 3201). Throughout this paper, I attempt to promote the ePortfolio as a beneficial strategy for students and instructors of higher education to value or assess their academic

achievement. The problems fall in two main categories: (1) a theoretical background on ePortfolios main concepts; it provides an overview of main concepts, explains the ePortfolio as a decision-making process, offering some insights, practices, ideas, and strategies, for successfully implementing it in higher education. (2) a practical framework on ePortfolios in practice: It discusses flourishing experiences targeting the impact of ePortfolios in higher education as a new way to academic assessment achievement. In response to these problems, the paper seeks to review the literature and selected experiences that may provide a significant impetus towards increasing our knowledge and sharing what we know. This paper aims to be a contribution to the awareness of faculty and students of the use and relevance of ePortfolios in assessment in higher education. The purpose is to motivate higher education instructors and students to develop this instructional technology in their institutions to assess their academic achievement. It attempts to promote ePortfolios from the academic assessment perspective in the light of flourishing experiences in higher education. Prior to launching myself into an exploration of what are those ePortfolios experiences, I first develop a theoretical background that answers common general questions around the theme of ePortfolios as an assessment tool, such as the following: what ePortfolios are? Why use ePortfolios? What types of ePortfolios there exist? What are the steps to develop ePortfolios? What are the uses of ePortfolios? What are the benefits of ePortfolios? Why ePortfolios help to assess academic achievement in higher education? How institutions make the move to ePortfolios assessment? In the second part of the paper, I explore current ePortfolios experiences, which include pilot studies in Medicine, Law, Education, Music, among other academic programs. The institutions selected for this purposes were the Pennsylvania State University, University of Miami and University of Minnesota in the USA, Law Oxford Institute of Legal Practice in UK,

University of Victoria in Canada, University of Amsterdam, University of Windesheim in the Netherlands, and the Queensland University of Technology in Australia. I selected those institutions at random. To that end, I explore some questions and answers and examine diverse ways of successfully using ePortfolios those institutions. The third part focuses on the importance of ‘reflection as the most important catalyst for growth’, and ePortfolios as ‘candidate-centered’ as important for assessing academic success. It explains how ePortfolios can be a successful way to assessing academic achievement.

This paper is preliminary because much remains to be learned about the effective use of ePortfolios in higher education. Optimistically, the research results reported here will lead to further research and encourage even more higher education institutions to use ePortfolios. I have concluded that a central tenet of “ePortfolios as an approach to assess academic achievement”, its focus on ‘success’ directs us toward solutions in higher education. The paper ends with some suggestions for additional research and promotion of the field.

I. Theoretical Background

This section will focus in attempting to provide an overview on ePortfolios by answering different questions that faculty and students may have on the issue of ePortfolios in higher education. Below I will briefly discuss each question based on the review of the literature, case analysis, and current experiences in the field.

- As an assessment, what ePortfolios are?

Generally, ePortfolio is as a web-based file system where users can upload files of any type, organize them and then reference, and share them. Over the last years, around the world, the prominence of, and interest in, e-portfolios in all sectors of higher education has grown, driven in part by national policy and lifelong and personalised learning initiatives. The Joint Information Systems Committee (JISC) in UK

(<http://www.jisc.ac.uk/whatwedo/themes/elearning/eportfolios.aspx>) funds a national services ePortfolio; according to this organization, the picture has often been a complex one, with confusion over what an 'e-portfolio' is. There is no 'universal' definition in the literature. Different authors see it as a tool or a system to save assignments to demonstrate work, to track accreditation or as assessing academic success (Hewitt, 2008; Santos, 1997; Wolf & Siu-Runyun, 1996), or as a way for people to tell stories about their life (Hellen Barret, 2006). An educational portfolio is "a purposeful collection of student work that exhibits the students' efforts, progress, and achievements in one or more areas" (Paulson, Paulson & Meyers, 1991, p.1). According to JISC web site, "fundamentally an 'e-portfolio' is the product created by learners, a collection of digital artefacts articulating experiences, achievements and learning." Coterill (2007) states his own definition in the following way:

"In general, an ePortfolio is a purposeful collection of information and digital artifacts that demonstrates development or evidences learning outcomes, skills, or competencies. The process of producing an ePortfolio (writing, typing, recording etc.) usually requires the synthesis of ideas, reflection on achievements, self-awareness, and forward planning; with the potential for educational, developmental, or other benefits. Specific types of ePortfolios can be defined in part by their purpose (such as presentation, application, reflection, assessment, and personal development planning), pedagogic design, level of structure (intrinsic or extrinsic), duration (episodic or life-long), and other factors. (<http://www.eportfolios.ac.uk/?pid=174>).

George Lorenzo and John Ittelson (2005) say that ePortfolios are a "digitized collection of artefacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution" (p.1). Indeed, ePortfolio definitions vary reflecting diverse purposes, different educational philosophies and practices. It describes a series of assessment practices that evaluate the individual in the process of performing real tasks with relevance to his or her education. Teachers and students use the electronic portfolio system as "a repository to store and organize digital evidence of teaching and learning" (Lorenzo and Ittelson, 2005, p.1). Unlike a one-dimensional paper document, an ePortfolio can "come alive" and provide a "rich" display, including documents, images, audio, video, links, and detailed examples of accomplishments and

achievements (Avenet 2005). On the other hand, Barret (2006) sees ePortfolios as “a way for people to tell stories about their life.”¹ In my view, more than anything else, ePortfolio is an excellent instructional technology for collecting and reflecting about performance. ePortfolio is an assessment and instructional technology for valuing academic achievement.

- As an assessment, why use ePortfolios?

EPortfolios provides a convenient and accessible space and the instructional technology to represent individual learning and competencies. Teachers can use them to design guided reflective processes, which help learners integrate and enhance what they have learned. Administrators use ePortfolios as a data-driven decision-making and reporting instructional technology. The system collects real evidence of teaching and learning, course materials, programs, department information, and institutional materials. Why do we need an ePortfolio? The best answer to this question is the following:

“The ePortfolio can provide an opportunity to support one's ability to collect, organise, interpret and reflect on his/her learning and practice. It is also a tool for continuing professional development, encouraging individuals to take responsibility for and demonstrate the results of their own learning. Furthermore, a portfolio can serve as a tool for knowledge management, and is used as such by some institutions. The ePortfolio provides a link between individual and organisational learning.” (<http://www.eife-l.org/publications/eportfolio/index.html>)

Kathryn Barker (2005) lists the reasons of why using ePortfolios:

- new and better ways to foster and assess learning for all levels of students – beyond standardized teaching and testing;
- the necessity to better assess and use the broad range of skills and knowledge that individuals learn through both formal and informal education, workplace training, community and family involvement over a lifetime.
- the accelerated growth of ePortfolio initiatives, North America-wide and world-wide, addressing public policy goals for educational accountability, labour mobility, and the promotion of lifelong learning;
- the level of maturity of ePortfolio and eLearning platforms that now offer robust and flexible solutions to learning management challenges in the global Knowledge Economy (p. 15).

ePortfolios are shared and reflected and the types depend of their multiple purposes.

We use this technology because we need to share, discuss, and reflect on our history,

¹ See her website at <http://www.electronicportfolios.org/> for more information.

our 'profound learning', our career, our growth and our personal - professional development, in a holistic way. As instructors we need to be able to value and assess holistically the student,'s academic and personal achievement in order to provide a constructive feedback to them contributing to their growth and learning.

- What are the types of assessment-ePortfolios?

Simon Cotterill (2004) in an international conference in Ottawa stated that ePortfolios have the advantage of supporting multiple purposes, which are the following: accreditation and revalidation, assessment, presentation, application (job/promotion), appraisal, among others. Lorenzo and Ittelson (2005) identify three types: (1) *student*, which comprises an academic record of achievements (honours and awards), degrees, coursework, presentations and publications that represent individual learning and competencies which help students to integrate and enhance what they have learned. (2) *Instructor*, which comprises a professional record of accomplishments, publications, course materials, syllabus, which are useful not only for guiding students, but also for job application, and/or to design, and guide reflective processes. Further, it provides a rich set of tools to design formative and summative assessments. (3) *Institutional*, which comprises real evidence of teaching and learning in the institution. It lists and explains courses, programs, learning materials, departments, and institutional objectives. Administrators use the ePortfolios system as a data-driven decision-making and reporting tool (<http://www.educause.edu/ir/library/pdf/ELI3001.pdf>). The following site develops a more detailed explanation of those different types of ePortfolios: <http://www.educause.edu/ir/library/pdf/ELI3001.pdf>. Matt Villano (2006) classifies ePortfolios in a different way: (1) *developmental* that comprises, a record of assignments over time, an example of this is the Peabody Institute which offers humanities courses (Portrait of the Artist Assignment which runs across multiple

assignments). (2) *Reflective* that comprises personal reflections, comments on each content, discussions and self-assessment of achieved outcomes; ePortfolio applications allow the owner to share and assess specific parts or views of their portfolio online and support feedback and dialogue, and (3) *representational* that comprises assessments of a particular piece of work, achievements in relation to selected developmental goal. As Hewett (2008) explains, regardless the types of ePortfolio assessment, it is a multidimensional process (reflecting multifaceted aspects of the learning processes, which is continuous and ongoing; providing formative, collaborative reflection and summative opportunities for monitoring progress, problem solving and decision making toward achieving essential outcomes (p.3204). In other words, the whole process involves multiple sources, phases, and methods, over multiple points of time, “authentic assessment contributes subjective, personal and professional elements to the objective measures. In this sense, when one includes the multiple perspectives, then “there are avenues for confirming and disconfirming the more idiosyncratic views of particular students” (Beverly D. Shaklee, 2000, p. 8).

- As an assessment, what the steps of ePortfolios are?

Very often, faculty and students wonder about how to develop ePortfolios. Specifically, ePortfolios assessment describes both a process and a place. The place is that of the physical collection and selection of materials or data (e.g., writing samples, artwork, etc). ePortfolio allows access to a variety of artefacts and students can upload and record attachments in different ways (it can be by theme, areas, class, etc). According to Cotrill (2007) ePortfolios can be produced using simple tools (such as presentation software or blogs) but more typically using specialist ePortfolio applications that contain a level of structure (pedagogy and learning outcomes/skills)

with a high level of customisation for specific contexts and support for multiple purposes (p.1).

Barret (2002), Beverly D. Shaklee, (2000) and Hewett (2008) identified several steps of effective ePortfolios: *selection*, based on learning objectives; *collection*, gathering diverse, multi-media set of items that represent learning and experience; *reflection*, statements about the “significance of each item and of the collection as a whole”; *direction*, a review on the future goals; *connection*, creating hypertext links and publication. In sum, clear stated outcomes; a list of performance-based experiences, key knowledge, skills and attitudes; samples of work representing different assessments or evaluations are important issues in developing ePortfolios (George, 1995). In this assessment process, creation, and reflection are essential aspects: the student has to be creative and reflect on his profile, resume, his/her direction, his/her reflections, etc. Among the questions often discussed in the process of reflection and creation are: why am I collecting and selecting evidence? How am I using the evidence? Is ePortfolios for representative skills, for areas of development, for demonstrated ability, for conferencing, for reporting or for all of them? Could ePortfolios help to promoting development, to documenting ability, or to modifying instruction and curriculum? (Beverly D. Shaklee, 2000, page 26). If ePortfolios focuses on the student, then, in this process, reflective commentary on the student’s experiences is important. Focusing on the teaching, Kilbane suggests the following steps:

(1) [f]raming digital teaching portfolio around standards, a theme, a question, or the teacher’s philosophy statement. 2) Considering materials, ingredients, artefacts, or contents adding written reflective statements 3) Designing and organizing: table of contents placing artefacts in different categories, storyboarding, designing power point 4) Evaluating portfolios: formative and summative evaluation 5) Publishing on the world wide web or on a CD or DVD, Zip or Floppy Disk or on Paper (p.)

ePortfolios assessment is a decision-making process and a continuous process of evaluation. According to Beverly D. Shaklee and others (1997) designing ePortfolios is

a multifaceted and an ongoing and consistent ‘decision-making’ process that involves the following decisions: Audience: Who should be involved? Outcomes: What are the purposes? Contents: What do I need to know? Strategies: How and when to accomplish the assessment? Evaluation: why it is an ongoing improvement process? An excellent site that explains each of the key steps for ePortfolios planning and assessment is the following: <http://www.nald.ca/Clr/csa/csa5.htm>. The University of Saskatchewan offers also an excellent explanation of the needs analysis prior to developing ePortfolios in its web site: http://wikiold.usask.ca/eportfolios/index.php/E-Portfolio_Needs_Analysis.

- As an assessment, what the uses of ePortfolios are?

According to Mike Reese and Glenn Johnson (2009) in recent years ePortfolios have become an integral means of “assessing student learning in teacher education programs” (p.18). The compilation and selection of the information that emerges from authentic assessment over time can provide a developmental record of students’ performance and progress. Such performance-based, realistic, contextualized assessment applies to decision-making about instruction and curriculum. Thus, primary uses of ePortfolios as an assessment are academic advising, institutional accreditation, curricular development at program level, career planning, and development and alumni development:

“Both nationally and internationally electronic portfolios have become a popular means of collecting and presenting selections of student work. Teacher education programs across higher education are using ePortfolios as a means of setting up essential learning experiences that can contribute to development of teachers (p.18).

Kilbane (2003) explains that faculty can create their own portfolios to use for professional development, to highlight their achievements or to archive material for promotion and tenure. In this sense, Deborah H. Holdstein (2008), explains that,

ePortfolios can be “web-sensible”—a thoughtfully arranged collection of multimedia-rich, interlinked, hypertextual documents that students compose, own, maintain, and archive on the Internet or in other formats (e.g., CD-ROMs, DVDs). Web applications designed to support ePortfolios composition can offer additional opportunities for providing structure, guidance, and feedback to students, and can provide students with opportunities to connect selectively with multiple audiences (p. 1)

ePortfolios have become a viable institutional instructional technology to facilitate student learning and self-assessment. Ideally, says Coterill (2007), ePortfolios can be examined in learning environments, can be used in recruitment services or to support continuity in life-long learning. ePortfolios is an online practical strategy for assessing and organizing such data that has emerged as a very important innovation in the scheme of assessment.

II. ePortfolios as an approach to assess academic achievement

ePortfolios provides rich information that goes far beyond the traditional static numbers of standardized tests or “historical quantitative forms of measurement and assessment” (Beverly D. Shaklee, 2000 p.7). In his book *Assessing Student Performance* (1993), Grant Wiggins describes assessment as a “comprehensive, multifaceted analysis of performance; it must be judgment based and personal (p.13). According to Wiggins, the process of assessment is a joint one in which the student and teacher are allies in the improvement of student performance. Below, this section focuses how ePortfolios have been the road to authentic academic assessment achievement by shifting assessment paradigms. It also explores flourishing practices of ePortfolios in higher education.

Shifting assessment paradigms: decision-making

The challenge to shift from the traditional measurement to ePortfolios as a new strategy to assess academic success entails different decisions. One of those decisions is to have clear assessment goals. If the goal is to communicate various kinds of information for the purposes of assessment, then, it implies taking the following actions:

- Identify connections among academic and extra-curricular learning for admission to higher education and vocational opportunities
- Demonstrate applications of knowledge and critical literacies for course or programmatic assessment
- Provide evidence of meeting standards for professional certification
- Display qualifications for employment
- Showcase job-related accomplishments beyond schooling, for evaluation or promotion

- Represent lifelong learning for participation in public service (Deborah H. Holdstein (2008, p.1)

Another decision is to have clear view of formative assessment in a variety of careers including art, architecture, medicine, education, journalism, law, among others. In formative evaluation, ePortfolios play a positive role, it ‘is a way to assessing academic success’ (Hewett, 2008 p. 3002). According to Clare Kibane (2008) digital teaching portfolios improve teachers’ impact on students and are effective for demonstrating teacher competence. Through this technology, teachers and students can display skills and talents, “ePortfolios are a tool for charting future professional growth and help people get jobs” (2005, p. 26).

Flourishing Practices

Different higher education institutions around the world have shown and continue to show a strong interest in the theme of using ePortfolios for assessing academic success. This paper is just a beginning to identify some *successful practices* in ePortfolios through study of the literature, and review of ePortfolios programs. The following are selected successful experiences to prove the benefits of ePortfolios, particularly in academic assessment achievement:

1. Graduate Medical Education (GME) in University of Miami (UMI)

Jorge G. Ruiz of the University of Miami (2008) describes his experience implementing an ePortfolio as part of a graduate medical education program in Geriatrics. He and other faculty members explain that integrating ePortfolios for academic assessment achievement, which includes both formative and summative evaluation of residents or graduate students as part of the institutions’ learning management systems, has been a successful experience. According to Ruiz, ePortfolios can be especially useful for evaluating and documenting “mastery of educational outcomes such as practice-based improvement, use of scientific evidence in patient care,

and professional and ethical behaviours that are difficult to evaluate using traditional assessment instruments” (p. 2017). ePortfolios can avoid some of the difficulties with hardcopy portfolios, which in their traditional written form are difficult to update, store, search, access, and distribute. ePortfolios, based on internet technologies, solve these problems and offer multiple useful features such as “accessibility, easy updating, learner control, distribution, standardization, tracking, and monitoring” (p.2023). This greatly facilitates the documentation of the training experience at graduate medical education. (<http://edo.med.miami.edu/x52.xml>)

2. **‘Foliotek’ in University of Minnesota (U of M)**

U of M considers the use of ePortfolio essential for formative and summative assessment and created *Electronic Portfolio Software (Foliotek) Now Open to Everyone*. (http://www.accessmylibrary.com/coms2/summary_0286-7489588_ITM). This software lets U of M students continually update their own assessment, their electronic resume for advisors, instructors and prospective employers. The Open Source Portfolio Initiative has announced the release of version 1.0, meaning anyone can download the software and use it for any purpose at no cost. (<http://www.foliotek.com/learn/StudentPortfolio.aspx>).

3. **Law in Oxford Institute of Legal Practice (OXILP), UK**

The Oxford Institute piloted the use of e-portfolios with students on the Legal Practice Course (the LPC) during the 2006-07 and 2007-08 sessions. Two mini-pilots were run in the first year, while in the second year the project operated across the whole course. E-portfolios continue to be used at OXILP. The published purpose for the new course, which must be offered from 2010, takes an outcomes-based approach, with a need to evidence reflection and the identification of learning needs. In relation to ‘critical reflection’ component of ePortfolios, they state that students initially felt they

did not know what to write when reflecting, and so “a Word template was drafted and amended in line with their comments. The template aims to encourage wide reflection, providing a series of questions for students to ask themselves to kick-start the process.

The template includes the following fields:

- title of the piece of work and subject
- skills area/s
- grade (if applicable)
- what did I learn from this piece of work?
- what would I do differently if I were to do this piece of work now?
- if you received tutor or peer feedback for this piece of work, what comments did you find helpful?
- if you disagreed with any feedback, what was it and why did you disagree?
- how would you use what you have learned in this exercise in other areas of the course or training contract?
- any other comments?” <http://www.ukcle.ac.uk/resources/ict/oxilp.html>

According to OXILP web site, “in 2006-07 law firms in the Thames Valley were approached with a view to students using the e-portfolio as part of their training contracts following completion of the course. The firms were offered support to minimise any extra work, including portfolio hosting if necessary, but more crucially, they needed to be convinced of the potential benefits to them, such as more effective trainees who could learn from experience and apply knowledge in different contexts for the benefit of both clients and the firm.” Negotiations regarding the use of e-portfolios during the training contract are still ongoing. For more information related to evaluating ePortfolios in law see: <http://www.ukcle.ac.uk/research/projects/eportfolios2.html>

4. **Glasgow Graduate School of Law (GGSL)**

Glasgow Graduate School of law had a pilot ePortfolio project, which aimed to find a link between the various stages in legal education and training to improve the development of trainees’ skills and knowledge and maximise employer investment in taking the time to train them. The project was extended, piloting the use of ePortfolios with students on the Diploma in Legal Practice course (the post-degree course for solicitors in Scotland) in partnership with five Scottish law firms. How do ePortfolios

work at Glasgow? One of the first exercises is a self-assessment in professional legal skills. In a further exercise, the students have to consider the attributes of a good lawyer. In another exercise, students have to reflect on ‘critical incidents’ which may occur during the course. The incident is then recorded in their e-portfolio. The characteristics of best practice assessments explained by Stephanie M.Hewett, (2008) match the characteristics of ePortfolios in Law at Glasgow. However, its web site explains that change has not been easy:

“Local law firms were approached to participate in the project when their trainees began their training contracts. Five firms agreed to take part, and the project is now running with former students in the partner firms. Students who had been involved in the project felt the need to reflect once they started their training contracts, however the law firms were concerned about the time involved and the potential benefits to them of involvement in the project. Once the students move into a practice environment, confidentiality can be an issue with regard to obtaining evidence to include in the portfolio.”(<http://www.ukcle.ac.uk/resources/ict/ggsl.html>)

5. Promotion in the Pennsylvania State University (Penn State)

The Pennsylvania State University is actively promoting ePortfolios among undergraduate students at its University Park Campus since May 2002. The primary objective of this ‘promotion’ is to foster consensus among faculty members and students about the nature and potential benefits of portfolio practice. Guiding this effort is the vision of a university culture centered on students’ evidence of, and reflections upon, their curricular and co-curricular achievements. According to Glenn Johnson and David DiBiase (2004), Penn State’s promotion of ePortfolios to undergraduates and faculty has generated positive attitudes and increased use. Penn State’s efforts to promote ePortfolios development among faculty and undergraduates during almost five years have been a prelude to, an enterprise learning management system that enables students to create and maintain ePortfolios. Thus, Penn State ePortfolios’s Initiative coordinated by Glenn Johnson, Project Manager, who collaboratively support faculty, has been a successful experience. Students or staffs who express interest in creating or supporting the creation of ePortfolios have the opportunity to do it with the help of

Johnson's Project. The purpose is helping students or staff to use their Penn State Personal Web Space to plan, reflect upon, and publish what they have learned at the university. This system makes academic assessment easier to access, update, store, search, and distribute portfolio content. In this sense, faculty Cole W. Campese in the Conference on "Social Blogging Platforms as EPortfolios" (Innovative Practice) focused his presentation on discussing the blogging platform at Penn State as a vehicle for students' ePortfolios. Campese says that they have taken full advantage of the fundamental aspects of blogging and the richness of the blogging culture to engage Penn State students in professional discourse communities around frameworks and problems of practice associated with their chosen professions. The author emphasizes that "in cases where information might be used by programs for accreditation, reporting, and /or self assessment purposes, we will share our vision [of ePortfolios] for capturing student's evidence at specified points across their programs"(p.1). Penn State, see its web site: <http://portfolio.psu.edu/>. In a recent conference organized by the Pennsylvania State University (2009) and the Center for Educational Resources, 'where teaching, learning and technology connect', presenters reviewed case studies on impact ePortfolios had in higher education and consider challenges, opportunities, and future perspectives. One of the cases analyzed was the case of Penn State's Music Education program, which focuses on the influence of the program-wide implementation of ePortfolios on students' learning and overall experience in the curriculum. This case is a unique example of integration of ePortfolios at a programmatic level. It promotes student ePortfolios as an integral part of the program. The initiative has received the accolades of the University's Board of Trustees and has demonstrated as a best practice of Music Education and educational technology.

6. Career Counselling and Professional Education in the Netherlands

ePortfolios are important tools in assessment and career counselling at the University of Amsterdam, and at the University of Windesheim, particularly in Professional Education. “Windesheim is one of the largest of the 55 Universities of Professional Education in the Netherlands with approximately 14.000 students...In 2004 Windesheim merged with the 'Vrije Universiteit' of Amsterdam”(www.windesheim.nl/cdl/servlet/CDLServlet?p_file_id=10121).

According to M.W. (Wijnand) Aalderink and M.H.C.H. (Marij) Veugelers (2008), ePortfolios can only succeed when “linked closely with educational change in the specific organization at different levels and from different perspectives” (2008, p. 2076). They describe the ePortfolio experience at both institutions:

Windesheim University: the ePortfolios project began as part of a strategic program, “IT for Student-Centered Education”. Windesheim developed parallel educational standards for the application of ePortfolios in student-centered, competence-based education within the major-minor model at a strategic level (‘Windesheim Educational Standards’). Specifically, in ‘professional education’ all goals (counselling, assessing, and planning) are at stake in an integral portfolio approach. Windesheim uses ePortfolios as a tool for both students and faculty in all the courses, starting with the cohort of 2006-2007. The law school at Westminster also piloted the use of e-portfolios with undergraduate law students on a work-based learning module during 2006-08 and as a personal development-planning tool during 2007-08. e-portfolios continue to be used at Westminster, with different improvements planned for 2008-09. For details of the project evaluation, see web site: <http://www.ukcle.ac.uk/resources/ict/westminster.html>.

7.- **The University of Amsterdam** focuses on working with an electronic portfolio based on assessment and academic training and skills, as well as on career-counselling. Using the three-pillar model of pedagogy, management, strategy, and technology (Fisser & Dekker, 2003, quoted by Aaldering and Veugelers, 2008), this institution chose an ePortfolio as an instructional and assessment technological strategy. Stimulating the growth of academic skills and making them visible in an ePortfolio are the bases for all curriculum projects at this institution. “ePortfolios support and improves students’ acquisition of competencies, and it also brings about a more transparent and flexible workflow for the different stakeholders involved” (Aaldering and Veugelers, 2008, p. 2072). The authors argue that, when implemented in heart of both, academic and administrative processes, an ePortfolio can make learning and teaching more effective and efficient. To them, it is maybe better to speak about a ePortfolio as ‘a concept’ instead of as ‘a system,’ because the concept is more than the tool: “the concept is the whole idea of taking up self-responsibility as a student for student growth, thinking in reflection, giving stimulating feedback, and so on” (p. 2075). ePortfolio is a very ‘open’ tool because students “can create their own look and feel and there is not a fixed format for presentations” (p. 2076). In 2002, a consortium of 10 universities (the Digital University) introduced a portfolio tool that purposes to expand to various educational universities and commercial firms in The Netherlands (Aaldering and Veugelers, 2008). In general, then, Dutch higher education purposes: (a) setting up a coordinating Web site that will be the portal to the subject of ePortfolio for all Dutch institutions of higher education; and (b) exploring and developing the subject of ‘lifelong learning’ in The Netherlands, thereby cooperating with partners in the educational sector, the government, and the professional field. For more information re ePortfolios at the University of Amsterdam see web site: <http://www.ic.uva.nl/portfolio/algemeen.cfm>

8. Education Program, University of Ulster, Northern Ireland, UK

ePortfolios are an effective tool in assessing teacher personal and professional development (PDP). For example, Victor McNair and Kevin Marshall, in a pilot study, examined how 36 student teachers of a one-year Post-Graduate Certificate in Education course at the University of Ulster in Northern Ireland (<http://www.ulster.ac.uk/>) developed critical 'reflective' practice of ePortfolios, and used them to embed Instructional Communications Technology (ICT) in their first year as qualified teachers. To the authors, Ireland society is undergoing profound changes, with resulting increase in the demands place upon their education system; at the same time technology, particularly ePortfolios, is opening up new possibilities regarding when and how learning and assessment of it can take place. The debate about the use of ePortfolios has intensified in the domain of teacher professional development in Northern Ireland (Campbell, Cignetti, Melenyzer, Nettles, & Wyman, 2000). Two central lessons emerged: (a) the process of constructing ePortfolios "developed confidence among the beginning teachers which supported them when faced with the challenges of starting teaching" (p. 2138); ePortfolio has an "intrinsic value to the induction teacher...it summarizes what they can do"(2008, p. 2143). (b) ePortfolios served as catalyst for initiating professional dialogue with their colleagues in order to improve their teaching; in other words, the technique was important to ease the transition from Initial Teacher Education to Induction. In this sense, "where there is a lack of critical reflection, barriers to professional development can emerge." 'Reflection' and 'critical reflection,' are key elements of ePortfolios in which student teachers can think and comment critically about their teaching (strengths and weakness) that allows the student to highlight areas for development" (2008, p.2138). Teachers can value the accessibility of the ePortfolios "as a resource, while others value its availability as a source from which

to review their own skills” (2008, p. 2143). Thus, to have this resource is a ‘good start;’ when seeking employment is a high priority for beginning teachers. Consequently, ePortfolios (the process and the product of their own teaching files) must be clear, organized, and goal driven, and must provide evidence that documents the attainment of the knowledge, skills, and dispositions required to be a successful teacher (2008, p. 2140). In this process, academic assessment achievement comes first, that is, the goal is to assessing academic success and growth; clear definition of goals and results is important; maintain multiple stakeholders’ perspectives is vital; support by management is essential; functional and technical support is also crucial; and technological choices matter too (Aalderink, 2008, p.2072). Finally, the authors say that student teachers from the pilot study suggested the need for schools to be more proactive in initiating a dialogue based on the ePortfolios: “they will become more relevant when the schools learn how to use them properly,” says one of the students (p.2145). Optimistically, the authors point out, technology, and particularly ePortfolios and PDP in the near future will enable more collaboration and partnership among a range of institutions interested in professional development of faculty in higher education (http://www.ulster.ac.uk/progressfiles/resources_screen.php?mode=view).

University of Ulster also has developed ePortfolios, and especially PDP, in PhD programs which are excellent examples of using technology for research and evaluation (<http://www.ulster.ac.uk/progressfiles/docs/PDPUK4June05.pdf>).

9. Academic Programs, Queensland University of Technology (QUT), Australia

Kim Hauville (2006) in a recent conference on “ePortfolio and Personal Development Planning (PDP) at Queensland University of Technology (QUT)” describes the lessons learned from a successful implementation of ePortfolios in 40,000 students at 9 faculties (plus staff) including Nursing, Education, Co-op and Internships,

Paramedic, Pharmacy, Library Sciences, Business, Information Technology, among others, in the leading QUT Australian University. The main features of ePortfolios at QUT are the following:

- Available to all students **and staff**
 - Student-centred
 - Automatically appears on each student's Intranet "Home" page
 - Similar features and feel to all other activities
 - Linked to other corporate data systems
 - Mapped/linked to specific student capabilities
 - Tailored to suit Faculty / Industry issues
 - Legitimises activities undertaken outside QUT
 - Easy to use
 - Form based
 - Limited number of steps
 - Lots of tips, help buttons, word count guides
 - Lots of self-help resources
 - Consistent look and feel
- (<http://www.studentportfolio.qut.edu.au/>)

According to Hauville (2006) the purpose was to enable students "to record, reflect on, catalogue, retrieve and present their experiences, activities, and things they produce both inside and outside of university life as evidence of the skills developed while at QUT that contribute significantly to their lifelong learning and career development"

(p.4). The following were the students' tasks:

- Collecting and recording in a single structure
 - Knowing about the generic skills employers seek
 - Connecting skills and experiences to the curriculum
 - Learning through reflecting and evidence-based writing
 - Understanding and self auditing skills and experiences
 - Planning where and how to develop skills
 - Reviewing content and progress by self and others
 - Showcasing slices of personal evidence
 - Preparing evidence for academics and employers
 - Preparing and building confidence for applications & interviews
- (www.eportfoliopRACTICE.qut.edu.au/docs/.../AeP_Report_ebook.pdf)

In the process, the students were able to add experiences (upload files), artefacts, create a view (academic history, resume, photos) and release the ePortfolio in which they undertake self-assessment of academic achievement and incorporate all three styles: Structured (predetermined framework of objectives to meet external / internal needs); Learning / Dynamic (opportunity for self-audit, recording, reflection, feedback

and on-going development), and Showcase (collect together, organise and present accomplishments). QUT 's web site offers excellent samples of these experiences.

(<http://www.studentportfolio.qut.edu.au/forstudents/samples.jsp>). The following were

the instructions provided to helping the students to reflect on their experiences:

- Situation is where you had the experience. Describe the environment, and the type of people or equipment you worked with. This gives employers background information and puts the experience into context.
- The task is what was required of you. When addressing a Task, it may be the project itself, a presentation you had to deliver, or a problem that arises within a project, such as personal differences.
- When addressing Action, think about what you did to resolve a problem or perform a task. Ask yourself “what did I actually do?”
- When addressing Result, think about how your actions affected the outcome of the situation and the status of the task.
- When addressing the things learnt, highlight skills that came out of the process and how they can be applied in other situations. This will show employers growth in your personal development as well as the skills you possess.

(www.eportfolioppractice.qut.edu.au/docs/.../AeP_Report_ebook.pdf)

In sum, ePortfolios were developed successfully at QUT in response to a set of needs:

- a need to consolidate specific lists from individual Faculties/Schools
- a need to respond to business and industry requirements
- a need to meet industry specific accreditation processes
- a need to infuse into teaching & learning documents and practice,
- a desire to get ATN agreement on student capabilities across like universities in Australia (Hauville, 2006, p.10)

From the QUT employers' point of view, ePortfolios are an excellent technology because “students are better organised/prepared, good access to artefacts, increase in confidence, excellent second stage selection tool” (p. 50). Furthermore, from a recruiter's perspective the student ePortfolio is a great innovation because it “allows students to be able to present information from their studies and about themselves in a way that they have total control over” (p.59). ePortfolio has the potential to do is to encourage students to focus on a wider range of graduate capabilities than they sometimes do; particularly in content based disciplines. To summarize, Al Grenfell, Director of Academic Programs at QUT, states, “I think what the Student Portfolio has the potential to do is to encourage students to focus on a wider range of graduate capabilities than they sometimes do; particularly in content based disciplines. The focus

that they have I think then will extend through to an opportunity for academics to promote authentic learning experiences and use field, project, clinical, problem based approaches which cover a wide range of graduate capabilities in one holistic pattern” (p. 60). For more information regarding QUT, see: <http://www.qut.edu.au/>

10. **University of Victoria (UVIC) and University of Saskatchewan.**

In University of Victoria (www.educ.uvic.ca/ePortfolio/) ePortfolios are used for everyone in a variety of careers including art, education, architecture, music, engineering, science, etc. Faculties, administrators and students understand the benefits of folio assessment. At the **University of Saskatchewan** the Prior Learning Assessment *Portfolio* admissions procedure is used as supplemental to regular admissions requirements (http://www.usask.ca/cgsr/administration/grad_council.php).

“An ePortfolio for Every Citizen by 2010” in Canada

Not only universities, but other organizations in Canada are taking the lead in using ePortfolios for assessing personal and professional success. Recently, according to Kathryn Chang Barker (2005), LIfIA (Learning Innovations FORUM d’ Innovations d’ Apprentissage based in Vancouver, British Columbia, a North American not-for-profit association dedicated to learning innovation and quality, affiliated to European Institute for E-Learning) has launched an initiative to provide ePortfolios, for continuously assessing life, to everyone: its purpose is “to promote ePortfolio’s for every Canadian citizen by the year 2010... One ePortfolio for life’ means being able to start your digital folio in school, utilize it through your training and education, and then continue to use it regardless of the work or business site to which you migrate”, said Barker, who recommends to access the following web site to create your own ePortfolio: <http://www.helenbarrett.com/portfolios/howto/index.html>. LIfIA is a Canadian leading e-learning organization, a non-profit corporation, dedicated to research and promotion

of learning innovations for learners, organizations and communities. LIFIA's vision and goal is "to provide portable, flexible, lifelong ePortfolios that empower students, faculty, workers and career seekers to meet their educational and career objectives" (Avenet, 2008). That is the 2010 goal of the European Consortium for the Digital Portfolio, known as 'Europortfolio.' Worldwide, Canada has already begun to offer e-Portfolio access to their citizens, while others are just beginning to realize its possibilities.

Benefits of current practices of ePortfolios as assessment in higher education

Benefits of using ePortfolios as assessment in higher education are multiple, according multiple purposes, multiple audiences. ePortfolios are used to display a person's skills, talents and *multiple intelligences*, (Gardner, 1994) the best products of the person creating the portfolio (Hewett, 2008, p 3201). That is, ePortfolios are a different way to assess academic success allowing the portfolio information to be transmitted and shared worldwide:

"For the first time in the relatively short history of learning technologies, we are seeing the rise of a technology dedicated to valuing and celebrating the achievements of the individual, from nursery school to lifelong and life wide learning. . ." (Europortfolio web site, <http://www.europortfolio.org/>).

Shelagh McGrath and others (2009) synthesize benefits to students, faculty, and the institution in the following way: Student's benefits are:

- increased learning effectiveness,
- model professionalism,
- enhance information technology skills,
- gain academic credit for learning beyond the classroom,
- *reflections* on *artefacts* as well as how they match goals and standards,
- help students make connections among their formal and informal learning experiences,
- prompt learners to articulate their learning goals from different perspectives,
- allow individuals to display learning in ways overlooked or undervalued by other assessment means (p.1).

Some Faculty's benefits are the following:

- leverage student motivation
- align objectives and *evaluation* strategies
- allow for more fruitful advising
- enable the efficient management of student deliverables in distance courses
- enhance relationships among ePortfolios creators and mentors (p.2)

Finally, institutions' benefits are, among others, the following:

- respond to calls for greater accountability and outcomes-based accreditation
- transportability of credits
- increase transparency for evaluation and benchmarking (p.3)

In sum, ePortfolios provide opportunities for reflection ('critical reflection' and self-evaluation); it is the most important catalyst for growth and is candidate-centered. Batson (2002) explains that ePortfolios open enormous possibilities for re-thinking completely personal and professional career, re-thinking curricula and allows for the evaluation of faculty, assessment of programs, certification of student work, and how accreditation works. Hewett (2008) lists the following benefits of ePortfolios:

- increase opportunities for peer review
- provide flexibility in the overall assessment process
- serve as excellent introductions of the professionals who create the ePortfolios
- encourage feedback from people outside of the education profession
- eliminate barriers to parent participation in the schools
- ensure fair assessments based on a variety of assessors (p. 3208).

Below, I will discuss three features of ePortfolios as a new way to academic achievement assessment: learner-centered (learning from others through reflection), assessing academic achievement, and reflection as the most important means for growth.

- **As a learner-centered electronic portfolio**

ePortfolios aim to have individual student work kept and archived for evaluation, reflection and future reference. ePortfolios are used to foster active learning, to motivate and demonstrate benchmark performances (Hewett, 2008). In other words, ePortfolio is "a multimedia web site designed to empower individuals to advance their educational and career objectives by managing and attractively displaying resumes, academic and career documentation, career goals and qualifications, achievements and other meaningful information. Unlike a one-dimensional paper document, an ePortfolio can "come alive" and provide a "rich" display, including documents, images, audio, video,

links, and detailed examples of accomplishments and achievements (Avenet 2005). This method of academic assessment achievement not only offers an authentic demonstration of each student accomplishments, but also allows individually taking responsibility for the work he or she has done this motivates him or her to accomplish more in the future.

As David Juce (2007) says:

Electronic portfolios allow for the capture and storage of information in the form of text, graphics, sound, and video. Students can save and organize writing samples, solutions to mathematics problems, samples of artwork, science projects, and multimedia presentations in one coherent document.

(<http://www.pwsd.ca/~djuce/eportfolios>)

As it was stated earlier, through ePortfolios, individuals are able to learn from others, students interact with colleagues, instructors, family etc to get feedback. ePortfolios are tools of feedback and discussion. The purpose is to self assess and recognize their own success.

- **Assessing academic achievement**

Suskie (2000) on an article that she wrote for the Fair Assessment Practice Column entitled “Giving Students Equitable Opportunities to demonstrate Learning” in the May 2000 issue of the *American Association for Higher Education Bulletin* stated:

An assessment score should not dictate decisions to us; we should make them based on our professional judgment as educators, after taking into consideration information from a broad variety of assessments (p.2).

ePortfolio is one of the broad varieties of assessments that includes text, graphics, sound, and video, (multiple media that are accessible and are easy to upgrade), which converge into a common digital format in many disciplines. As previously I mentioned, an educational portfolio is a purposeful collection of student work that exhibits the students’ efforts, progress, and academic achievements in one or more areas (Paulson, Paulson & Meyers, 1991). But it is more than just a collection. An ePortfolio is an authentic assessment or ways to assess academic success as Hewett (2008) has pointed

out. ePortfolios values the positive things done in life. It includes the value of ‘critical reflection’ and self-evaluation. It describes a series of assessment practices that evaluate the individual in the process of performing real tasks with relevance to his or her education.

- **Reflection as the most important means for growth**

Reflection or critical self-evaluation of the work done is very important for growth. A reflection, that is, a *calm, lengthy, intent consideration; a remark expressing careful consideration* is important for authentic learning. In general, simply collecting work without getting own feedback or evaluation from others does not fulfill the need for growth; it is unlikely to offer new perspectives that will help the student develop and evolve as a professional. The ePortfolio is thus a catalyst for this feedback— increase opportunities for communication and interaction with teachers, mentors, peers, colleagues, friends, and family. “It provide flexibility in the overall assessment process; serve as excellent introductions of the professionals who create the portfolios; encourage feedback from people outside of the education profession... and ensure fair assessments based on a variety of assessors” (Hewett, 2008, 3208). It provokes new ideas and new directions and facilitates reflection on and re-evaluation of accomplishments. In general, then, ePortfolios provides the foundation for a continuum of learning experiences that can evolve in unexpected ways. In this sense, Gary Greenberg (2004) considers that creating a ePortfolio is art and the students must be an artist that can learn from his or her own piece of art.

Conclusion

In this paper, I have described briefly a theoretical framework and I explore different examples of ePortfolios experiences in selected institutions, or pilot studies. I discuss ePortfolios benefits in academic programs, particularly in assessing academic achievement. Here I want to briefly discuss my framework, summarise my results and give some further recommendations for further development and research.

The purpose of this paper was to discuss ePortfolios as an academic assessment strategy and explore some of their uses for appraisal of achievement in higher education. As we have seen from this essay, the age of technology has improved the assessment process by allowing the ePortfolio information transmit and share worldwide the results of the instructors and/or students' work. According to selected examples of pilot studies and ePortfolios experiences in Universities of the USA, UK, Canada, Australia, and the Netherlands, many students, faculty, and staff take advantage of an e-Portfolio system. Currently different instructors and institutions have turned to use ePortfolios at different outstanding institutions. We learned that the use of ePortfolios for academic assessment seems to be beginning a new wave of technology development in higher education. ePortfolios constitute a new way to academic assessment achievement in excellent Colleges and Universities around the world, which share their benefits and experiences in conferences, journals, books, encyclopaedias, and in their web sites.

Many faculties in different programs in higher education might remain today using only standardized tests to assess educational progress; however, many academic scholars and authors of the higher educational community, recognize the pitfalls of having a single assessment to evaluate educational progress. They have been successful using ePortfolios as an educational technology for assessing academic achievement of

students. Faculties of some of these institutions have shared their findings in the encyclopaedia: *Online and Distance Learning: concepts, Methodologies, Tools, and Applications*, in six volumes, edited by Lawrence Tomei (2008). Many institutions publish their experiences in their web sites, journals, books and conferences with timeless information about their ePortfolios' best practices. Most of these institutions explain that developing and implementing ePortfolios in higher education has been a challenging job that takes a lot of time and energy. It calls for flexibility and technology thinking that can only succeed when linked closely with educational change.

The development of ePortfolios is a major issue for the further improvement of the effectiveness and efficiency of higher education, particularly to assessing academic achievement. As technologies become more and more part of our educational practice, ePortfolios need priority in continuing professional development in higher education. However, it would be wrong to ask for highly advanced ePortfolios scenarios in an institution with traditional residential and classroom based education. It also is too optimistic to ask instructors for advanced blended assessment scenarios using ePortfolios if they still lack basic computer skills, and it can be useless to have very advanced programming ePortfolios skills if one lacks pedagogical and instructional technology competences, or the appropriate organisational environment to apply new tools and applications. In this sense, this paper highlights the importance of promoting ePortfolios in higher education.

While it is necessary to acquire information literacy as a general competence, I think that instructors and students require continuous training in technology in the context of the specific discipline. A good command of standard software applications is important as basic 'cultural technique' for competently dealing with digital forms of ePortfolios. The following are some recommendations for further research: First, I think it is

necessary to continuously exploring ePortfolios' innovations in higher education. Educational technologies such as ePortfolios are in dynamic development. It is necessary to prepare for permanent innovation rather than for a one-time change, to plan for change rather than for stability. Second, I believe it is important to continuously focus on faculty and students' skills on ePortfolios. There is a need to foster awareness and consensus among more faculty members and students about the nature and potential benefits of portfolio practice. ePortfolios requires awareness, knowledge expertise, and skills on communications and technology. In this sense, it would be necessary promoting use and benefits of ePortfolios as assessment tools in higher education by cooperating internationally, and disseminating project-related information by means of national and international conferences and seminars, developing training programs for instructors and students on basic computer skills specifically and of information literacy generally.

I hope that this brief framework and exploration of institutions can contribute to the awareness of this useful technology in higher education. However, it is possible to identify information literacy on ePortfolios in general terms, but it is necessary to apply and train these skills in the specific academic field. This paper brought new challenges. In the near future, I would like to design, implement and evaluate ePortfolios in higher education in other nations, such as developing countries.

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Cite this definition as: [Cotterill SJ. What is an ePortfolio? ePortfolios 2007, Maastricht](#)
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