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ePortfolio Quality Standards: An International Development Project

**Discussion Paper
Dr. K. Barker: September 2003**

Project Objective:

To create consumer-oriented, consensus-based industry quality standards for the ePortfolio.

Development Process:

The project involves four steps:

1. Preparation and circulation of this ePortfolio Discussion Paper.
2. Responses by individuals to the questions posed.
3. Consideration of all the responses by a panel of eLearning experts.
4. Insertion of the ePortfolio Quality Standards into the CanREGs – the Canadian Recommended E-learning Guidelines¹ (© FuturEd and CACE, 2002).

This ePortfolio Discussion Paper begins with the preliminary work that has been done on ePortfolio quality², the environmental scanning³, and the research conducted by FuturEd⁴. It includes a current environmental scan that introduces developments and unresolved issues around quality, standards and the ePortfolio; and poses the discussion/response questions.

The project will be undertaken largely via the Internet, with some small group sessions where possible.

¹ The CanREGs are available on-line from a wide number of sources, including www.eQcheck.com

² *ePortfolio Policy and Implementation White Paper* (FuturEd, 2003) available at www.FuturEd.com

³ *Assessment and Management of Skills and Knowledge: an ePortfolio Environmental Scan* (Barker, 1999) available at www.FuturEd.com

⁴ *The Electronic Learning Record (ePortfolio): Assessment and Management of Skills and Knowledge: Research Report* (Barker, 2000) available at www.FuturEd.com

The panel of experts includes representatives from the original CanREG Advisory Committee and from additional organizations who have an interest in eLearning, including but not limited to:

- Association for Media and Technology in Education in Canada
- Canadian Association for Community Education
- Canadian Association for Distance Education
- Canadian Education Association
- Canadian eLearning Enterprise Alliance
- Canadian Society for Training and Development
- Commonwealth of Learning
- European Institute for E-Learning
- Licef, TeleUniversite
- Human Resources Development Canada
- Industry Canada

Participants:

FuturEd Inc. as a commitment to keeping the CanREGs current and useful leads the project. Any and all input is welcome. However, the final Quality Standards will be the consensus-based output of the panel of experts. Submit your “answers” to the 6 questions to kbarker@futured.com before Oct. 31, 2003.

Underlying premises:

1. The ePortfolio is an **electronic learning record**, i.e., it is a computer-based inventory of an individual’s skills and knowledge. Compared to paper-based portfolios, the use of computers is assumed to make the creation, updating, and utilization of portfolios easier, more effective and efficient. In some cases, the ePortfolio is web-based and the term “webfolio” is used to mean a dynamic Web site that interfaces with a database of student work artifacts, where functionality derives from HTML links.

Other labels that relate to the ePortfolio include:

- Electronic learning record
- Electronic portfolio
- Prior Learning Portfolio
- Learning Passport
- Record of Achievement
- Skills Passport
- Skills and Knowledge Profile
- Digital learning record

2. The ePortfolio currently takes many, **many forms**. Regis University sets out Development, Assessment, Showcase and Hybrid Portfolios.⁵ Helen Barrett lists the Working, Reflective, Connected and Demonstration Portfolio.⁶ The ePortfolio is relatively new and totally unregulated.

3. The ePortfolio has **many different uses**. For example,

- Individuals can use portfolios in applying for entrance to education or employment, for career planning and development.
- Educators use portfolios as a form of assessment, and as alternative achievement records.
- Students and artists use portfolios to highlight their capabilities.

⁵ *E-Portfolio Basics* at http://academic.regis.edu/LAAP/eportfolio/basics_types.htm

⁶ *The Electronic Portfolio Development Process* (Barrett, 2000) at <http://electronicportfolios.com/portfolios/EPDevProcess.html>

- Employers use portfolios to recruit the right employees, manage individual and team capabilities.
- Trainers use portfolios to identify skill gaps and target appropriate skills upgrading.

This introduces the concept of both creator (user of tools) and receptor (user of the ePortfolio).

4. As an innovation in the assessment and management of learning, the ePortfolio has the capacity to address a number of **important public policy goals**, including:

- Better use of Human Resources, company-wide and country-wide;
- Increased productivity and economic prosperity;
- Improved education and more efficient training systems;
- Increased individual capacity to manage career development and engage in lifelong learning.

The ePortfolio is a key tool in the implementation of Human Capital Accounting as recommended by the OECD.⁷

5. There is a tight link between the ePortfolio and Prior Learning Assessment, i.e., PLA is a process of identifying what a person knows and can do, and the ePortfolio is an outcome of that process. It is the record that is created to represent the inventory of acquired skills and knowledge. The entire inventory of what a person knows and can do is the result of many types of learning:

- Formal learning through education and training;
- Informal learning through family and community life, reading and travel;
- Non-formal learning through work and workplace training;
- Accidental or incidental learning.

All forms of learning have value.

6. The CanREGs state that good eLearning concludes with a method by which individuals can add what they've learned to their personal portfolios. The purpose of this project is to be more specific about how this is best achieved from the user or consumer point of view.
7. There are many kinds of standards in eLearning: technical standards such as SCORM, curriculum standards for content, instructional design standards, assessment and evaluation standards. This project focuses on **quality standards**, i.e., what makes the ePortfolio effective and efficient for those who create and use them – individuals, employers, and educators.

Question 1: Do you accept these premises or do you think they should be changed in some way?

⁷ ePortfolio and Human Capital Accounting: FuturEd White Paper (Barker, 2003) at www.FuturEd.com

A starting point:

In 1997, the Canadian Labour Force Development Board (CLFDB) undertook a study of the “electronic learning record” and concluded that, in order for an ePortfolio to make a contribution to increasing the effectiveness, efficiency and equitability of a labour force development system, it must include both an instrument (format, content), a process (access, development, maintenance) and a utility for all the labour market partners that meet minimum standards for effectiveness, efficiency and equity. Under the leadership of FuturEd Inc., the CLFDB created the following **recommended national ePortfolio standards** to address Human Resources Development policy goals.

1. The ePortfolio should list and describe skills and knowledge in a way that is recognized and respected by all the labour market partners.
2. The ePortfolio should have the capacity to be a complete inventory of skills and knowledge acquired by the individual regardless of where they were acquired.
3. An individual should develop and own his/her ePortfolio. Some people may require informed assistance to achieve this. The use of the ePortfolio and any changes to it should be completely controlled by the individual.
4. The content of the ePortfolio should be current, accurate and verifiable.
5. The ePortfolio should allow flexibility to accommodate unique or industry-specific skills.
6. The ePortfolio should follow a standardized format. The ePortfolio content and format should link to existing and developing labour market exchange systems.
7. The ePortfolio and its development process should be relatively simple and straightforward.
8. The development and use of the ePortfolio for any and all Canadians should be barrier-free; that is to say, social identity, disability and geography should not be barriers to individuals.
9. The development and content of an ePortfolio should be bias-free.
10. An ePortfolio should not create barriers; for example, a person who does not have an ePortfolio is not discriminated against for the lack of one, or for the skills revealed.

Question 2: *These might serve as a starting point to a set of ePortfolio Quality Standards. What would you remove? What would you change?*

FuturEd ePortfolio Research

In 2000, FuturEd conducted a research project to see if and how individuals benefited from having ePortfolios.⁸ From this research, the following specific recommendations were made.

1. To generate an ePortfolio, a person must be given considerable dedicated time and professional assistance. This may also be true for the process of updating an ePortfolio to keep it current. A workshop may be the preferred process.
2. A method of demonstrating and/or verifying skills and knowledge, beyond credentials, must be developed and systematically adopted to ensure confidence in the ePortfolio, particularly if non-formal learning is to be recognized.
3. An ePortfolio must be designed with no redundancies, with explicit instructions, and with examples and a glossary of terms. Ideally, it would be interactive.
4. To be effective and efficient as a system, and to achieve the public policy goals, the ePortfolio should be developed on a province-wide or nation-wide basis.

Question 3: Do you see anything here that would contribute to ePortfolio Quality Standards?

⁸ *The Electronic Learning Record – Assessment and Management of Skills Knowledge – ePortfolio Research Report* (Barker, 2000) available at www.FuturEd.com .

New Thoughts and Issues:

A review of the recent literature reveals the following issues that might shape the ePortfolio Quality Standards. There is rising interest in the ePortfolio as it addresses important Human Resources Development policy goals and assists in the implementation of Human Capital Accounting for the Knowledge Economy. For example:

- The European Institute for E-Learning (EifEL)⁹ links the ePortfolio to eLearning and seeks to find applications that remove the boundaries between education and employment.

The greatest development of the ePortfolio appears to be in the context of education, particularly higher education (in contrast to the workplace¹⁰). For example:

- There are ePortfolio development projects in at least 20 prominent US universities, colleges and/or education departments.¹¹ From an examination of those projects, Batson concludes, “Electronic portfolios have a greater potential to alter higher education at its very core than any other technology application we’ve known so far.”¹² He asks these questions:
 - How do we deal with **long-term storage, privacy, access, and ongoing vendor support**?
 - What about the **challenge of interoperability** among platforms so student work can move to a new campus upon transfer?

Batson notes that administrators in some fields have recognized that ePortfolio tools are very useful in organizing curricula around professional standards. The *Portfolio Guides by Certification Area*¹³ used by Southwest Missouri State University is a good example.

Batson introduces a “tribal discussion” about ePortfolio standards that is focused on these problem areas: **storage, security, certification, and industry-interface**. He raises the critical question: should institutions of higher education attempt to certify student work, stored on campus-based ePortfolios, as authentic? Is it part of the official transcript?

⁹ <http://www.eife-l.org/portfolio/>

¹⁰ The Centre for Recording Achievement, which promotes Recording Achievement, Personal Development Planning and Progress Files within educational institutions and professional bodies in the UK, provides no case studies with employers. www.recordingachievement.org

¹¹ *The Electronic Portfolio Boom: What’s it all About?* (Batson, 2002) at <http://www.syllabus.com/article.asp?id=6984>

¹² Borden and Thomas (2001) agree. They say “Creating electronic institutional portfolios requires the alignment of technical, analytical, evaluative, academic and graphic design resources in ways that most colleges and universities have never done before.”

¹³ *Portfolio Guides by Certification Area* at education.smsu.edu/peu/student_portfolios/portfolio_guides.htm sets out Conceptual Framework Learning Outcomes for the university’s education program.

- *The Urban Universities Portfolio Project: Assuring Quality for Multiple Publics*¹⁴ produced 13 lessons learned in the comparison of ePortfolio development at six major US universities. Among the lessons learned are these two: “here is no one right answer about which tools to use” and “portfolio development is like a gas: it will occupy any volume it is provided.”
- Prominent among ePortfolio experts, Dr. Helen Barrett from the University of Alaska says:
 - Re: Confidentiality¹⁵: “The quality of the learning that results from the portfolio development process may be in direct proportion to the quality of the student self-reflection on their work. One challenge in this process will be the need for confidentiality of these reflections. This is the place where the personal, private reflections of the learner need to be guarded.”
 - Re: Standards:¹⁶ “I see a lot of variations on the technologies used to develop electronic portfolios, but very little linkage to the actual benchmarks that students are supposed to be demonstrating....Too many of the current examples of electronic portfolios, both “classroom grown” and commercial, focus on the glitz and glamour of high tech multimedia... Most states have adopted standards for students, practicing teachers, and new teachers. These standards form an ideal framework for thinking about organizing an electronic portfolio..... Without standards as an organizing basis for a portfolio, the collection becomes just that... a collection, haphazard and without structure; the purpose is lost in the noise, glitz and hype.”
- In a review of electronic portfolio research for the National Learning Infrastructure Initiative, Cambridge¹⁷ concluded that the essential ingredients for successful ePortfolio implementation for an institution are **standardization, interoperability, a universally agreed-upon sets of definitions, and adoption of policies that will guide both behaviour and expectations when it comes to copyright law and easy access to digital information.** He adds that “without a set of standards for interoperability, students will, at best, be frustrated by the limitations imposed on their efforts to compile their work and, at worst, abandon their e-portfolio efforts altogether.” Cambridge reports on a project called ePortConsortium¹⁸ that intends to create an ePortfolio management system with a goal of making it **easy to use, customize and maintain.** The project

¹⁴ *A Baker’s Dozen Lessons Learned About What It Takes to Develop and Sustain Electronic Portfolios for Program and Institutional Assessment* (Borden and Thomas, 2001) at <http://www.imir.iupui.edu/portfolio/lessons.htm>

¹⁵ *Electronic Portfolio Planning Worksheet* (Barrett, 2000) at <http://electronicportfolios.com/portfolios/EPDevProcess.html>

¹⁶ *Electronic Portfolios and Standards* (Barrett, 1998) at <http://electronicportfolios.com/portfolios/TelEd98Abstract.html>

¹⁷ *The Digital Me Standards, Interoperability, and a Common Vocabulary Spell Progress for E-Portfolios.* (Cambridge, 2003) at www.educause.edu/asp/doclib/abstract.asp?ID=NLI0350

¹⁸ <http://www.eportconsortium.org/>

manager, Ali Jafari of Indiana University, says **“the right system would enable every user to have a URL; would allow for custom templates; make it possible to present, manage, and even hide or keep in storage artifacts; would incorporate student learning outcomes; would allow for dynamically presented resumes and curricula vitae; would dynamically create accounts for every student, staff member and faculty member; and would support a variety of authoring tools.”** As a contribution to the project, Ruth Sabean and Eric Splaver of UCLA note that “one of the chief requirements is **the ability to integrate the system into their existing systems, such as grade books, course management systems, portals and systems that enable data to be taken from one campus to another.”**

- Many colleges and universities encourage students to use their proprietary systems, and provide online tools and instructions.
 1. When they were developing their system, the University of Florida¹⁹ decided that their portfolio system had to be dynamic: it had to be easy to access, use and modify. And I had to accept a variety of media, including text, graphics, sound and video.
 2. Among the many detailed directions, the University of Redlands²⁰ warns that:
 - Students must adhere to all copyright laws pertaining to scanning images and documents.
 - The university will not return portfolios to students, so they should keep a copy.
 - The student portfolio must be submitted on a CD-R, not on a Zip Disk or as a PDF.
 3. Pennsylvania State University²¹ lists Do's and Don'ts -- among them:
 - Don't include large audio files that take a long time to download.
 - Do have others view at your online e-Portfolio both for mistakes and also for impact. Have individuals use PC and Mac platforms for examination and check out the format with both Netscape and Internet Explorer, as there can be differences in what is portrayed.

Working to catch up, the eLearning industry has begun to develop ePortfolio tools. Several companies, including BlackBoard, WebCT, SCT, Nuventive, Concord, McGraw-Hill, Chalk and Wire, and others are said to either have or are developing electronic-portfolio tools. In addition to commercial tools, there are some Open Source tools. The Open Source Portfolio Initiative (OSPI) is a collaborative, open source, software development project based on the University of Minnesota System's (U of MN) electronic portfolio (ePortfolio) software.²²

¹⁹ *History of the Portfolio System* at <http://www.coe.ufl.edu/school/portfolio/history.htm>

²⁰ *e-Portfolio Guidelines* from University of Redlands at www.redlands.edu.

²¹ *Developing an Online Application e-Portfolio* at <http://www.personal.psu.edu/users/f/g/fgk1/portfolio/Portfolio.htm>

²² at <http://www.theospi.org/>

From an industry perspective, two types of standards are emerging.

- ePortaro Inc.²³ has released a draft specification to encourage ePortfolio application integration and interoperability. “The ePortfolio Interoperability XML (EPIX) specification will allow disparate ePortfolio systems to speak a common language for discovery, integration, and synchronization without regard to implementation-specific technology choices. The EPIX specification is designed to leverage open Internet standards, including XML, SOAP, and HTTP to standardize the development of open ePortfolio system interfaces as well as to provide a roadmap for ePortfolio providers to build open, interoperable, standards-based applications.”
- In advertisements, commercial ePortfolio tools introduce consumer standards as well. One of the prominent commercial ePortfolio tools is called e-Portfolio with Rubric Maker²⁴, available from Chalk & Wire, who claim that their product is *easy to use, flexible, powerful, portable, and cost-effective*.

Regis University compared seven commercial products (Nuventive IwegFolio, Personal Learning Plan, Interfolio, WebFolio Builder, OSPI, ePortaro, ePortConsortium, and True Outcomes).²⁵ To draw comparisons, faculty first determined the criteria that were important to them. The ePortfolio Features²⁶ are listed in Appendix A.

Question 4: *From these developments, what needs to be added to the Quality Standards? Have new ideas occurred to you? Is it possible to have “one” ePortfolio for all?*

Question 5: *What would you do with ePortfolio Quality Standards? Would you like to stay involved in the updating of eLearning quality standards?*

²³ ePortaro Releases First ePortfolio Interoperability Specification (January 29, 2003) at www.epixspecs.org/press02.html

²⁴ e-Portfolio with RubricMaker information is available at www.chalkandwire.com

²⁵ Regis University Electronic Portfolio Project at http://academic.regis.edu/LAAP/eportfolio/portfolio_features.xls

Appendix A: Regis University ePortfolio Comparison Features

Collection / content management

- support documents, spreadsheets, slides, images, video and audio file types
- can align artifacts to standards, outcomes or goals
- standards/outcomes/goals are pre-populated
- students align artifacts to standards
- faculty align artifacts to standards
- both students and faculty can align artifacts to standards
- archive student artifacts
- organization structure for artifacts
- notification to faculty once artifacts ready for review
- aggregation of information
- create multiple portfolios for multiple purposes
- artifact created once and placed in multiple portfolios/folders
- can open/view all software attachments-- html or free viewers available
- artifact/assessment matrix
- student selects design template
- student creates own portfolio design
- portfolio provides multiple organization frameworks

Reflection

- archived student reflection for each artifact
- prompted questions to encourage reflection

Feedback

- archive of student feedback
- archive of faculty feedback
- feedback is recorded by date and time
- reviewer can upload documents
- reviewer can make changes/corrections to artifacts (such as track changes)
- feedback is private
- feedback is public
- feedback is public or private
- peer review
- anonymous review

Personal information

- user chooses information to add such as address, email, phone
- user can add information to personal profile
- personal interests
- personality/career inventories (i.e. Myers-Briggs)
- education history
- career plan
- academic plan
- interview information
- professional skills
- references/letters of recommendation
- professional memberships
- professional development
- honors/awards/certificates
- personal calendar

Permissions

- password protected
- secure server
- user controls portfolio access by give/take of permissions
- faculty have access to multiple portfolios within system
- faculty have access to specific portfolio information
- user designates content to be viewed by different audiences
- shows user how many people have viewed portfolio

Publishing

- external parties can view portfolio at any time
- external parties can view specific portfolio products at any time
- can turn portfolio into website
- can burn to CD ROM
- can resubscribe and keep portfolio on vendor's server
- access is granted to alumni

Technology

- files kept on university server
- files kept on vendor's server
- option to keep files on preferred server
- each user provided with 30M or more
- users can purchase more file space if needed
- digital preservation
- data is stored in relational database
- web-friendly format
- Data search and sort capability
- users do not need to know HTML
- integration with other campus databases including career services, registration and course management systems
- ADA and section 508 compliant
- multi-platform
- delete and add functions based on departmental needs
- allow companies to search for employees against student/alumni data sets
- export portfolio info to third party applications

Support

- help desk services via phone and email
- help desk services available 24/7
- file-backup at least every 24 hours

Training

- training sessions conducted by vendor
- faculty can create course websites

Question 6: Is this a useful framework for Quality Standards? Do all of these criteria apply to the ePortfolio in the workplace? At the K-12 level?

Please submit as Word document to kbarker@futures.com by Oct. 31, 2003

Question 1: *Do you accept the premises set out in this paper, or do you think they should be changed in some way?*

Question 2: *The CLFDB standards to address HRD policy goals serve as a starting point to a set of ePortfolio Quality Standards. What would you remove? What would you change?*

Question 3 *Do you see anything in FuturEd research that would contribute to ePortfolio Quality Standards?*

Question 4: *From the ideas and issues in the literature review, what needs to be added to the Quality Standards? Have new ideas occurred to you? Is it possible to have "one" ePortfolio for all?*

Question 5: *What would you do with ePortfolio Quality Standards? Would you like to stay involved in the updating of eLearning quality standards?*

