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FuturEd Consulting Education Futurists Inc.  
Dr. Kathryn Chang Barker, President  
101 – 1001 W. Broadway, pod 190  
Vancouver, BC  
Canada V6H 4E4  
phone: 250-539-2139 fax: 250-539-2129  
e-mail: [kbarker@futured.com](mailto:kbarker@futured.com)

portfolio learning are common practice in primary literacy education, and in adult literacy and basic education programs. For example, in Cape Breton, adult learners and their tutors use a paper-based process to demonstrate learning.<sup>1</sup> To portfolio assessment, the ePortfolio adds the electronic dimension that enhances the storage size and updating capabilities of a paper-based portfolio.

FuturEd has studied and promoted the ePortfolio since 1997. FuturEd research demonstrates that the ePortfolio is linked closely with:

- Human resources development and Human Capital Management – as the means of identifying and managing what a person and a group of persons knows and can do;
- lifelong learning – as the method of tracking and recognizing ongoing learning, as an incentive to the lifelong learning requirement;
- Prior Learning Assessment – as the outcome of the PLA process of exploring and determining an individual's non-formal and informal learning;
- education and training at all levels (K-12, PSE and workplace) - as a teaching tool (reflection as a basis for learning), as a learning management tool (e.g., project-based learning) and as an alternative form of learning assessment;
- eLearning – as a type of Knowledge Management, a part of a Student Information System and a potential form of “Usable Learning Object” repository;
- learning organizations – as a means of tracking and developing human capital and assisting professional development of employees within organizations across sectors;
- community economic development – as an inventory of collective community human capital assets;
- future learning systems that rely less on credentials and more on competencies; and
- ePortfolio systems of “producers” and “consumers” to enhance return on investment for users.

eLearning is a recognized method of increasing access to training. The Open eQuality Learning Standards<sup>2</sup> (formerly the Canadian Recommended E-learning Guidelines) state that good eLearning begins with assessment of prior learning and ends with a method by which the learner can add to his/her individual learning portfolio. The ePortfolio is becoming a ubiquitous personal management tool – many public education institutions and career development agencies are encouraging and assisting students to develop digital records or e-portfolios. However, there are huge variations in, e.g., the approach to learning (formal vs. non-formal), format, evidence required, and technical aspects (interoperability). Some work has been done to generate quality standards from the users point of view<sup>3</sup> and some research

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<sup>1</sup> Available at <http://www.nald.ca/cbln/projects/dsuccess/dsuccess.pdf>

<sup>2</sup> *Open eQuality Learning Standards* are available at [http://www.lifia.ca/en/learn\\_equal\\_proj.htm](http://www.lifia.ca/en/learn_equal_proj.htm)

<sup>3</sup> *Consumer's Guide to ePortfolio Tools and Services* is available at [http://www.lifia.ca/en/learn\\_eport\\_info\\_guides.htm](http://www.lifia.ca/en/learn_eport_info_guides.htm)

has been done by FuturEd linking the ePortfolio to both Prior Learning Assessment, Knowledge Management, and Human Capital Assets Management.<sup>4</sup>

Knowledge Management is a concept that can be used effectively by employers to identify the knowledge resources in an enterprise and increase worker productivity. It is common knowledge that adults with limited Essential Skills often have a valuable bank of skills and knowledge that they've acquired through various non-formal learning opportunities, skills and knowledge that could be "used" to advantage by employers and by the overall Canadian economy. The process of Prior Learning Assessment helps individuals to identify and verify their skills inventories and the ePortfolio is the record of that process. Using the principles of Human Capital Assets Management, employers can better maximize the use of the knowledge resident in their workers and target training to increase Return on Training Investment.<sup>5</sup> FuturEd Inc. has established that the ePortfolio is the basic tool for HCAM. (See Appendix B)

In recent years, a wide variety of ePortfolio tools and services have emerged from both the public education system and private enterprise. The largest body of user are K-12 education and universities in the US; and there are a large number of initiatives in Canada at K-12 education, post-secondary education, workplace and lifelong learning. A new national non-profit corporation, the Learning Innovations Forum d'Innovations d'Apprentissage (LIFIA)<sup>6</sup>, with it's partner in the European Union, the European Institute for eLearning (EIFEL), advocates for:

- an ePortfolio for each and every Canadian
- one ePortfolio for life
- quality ePortfolio systems for Return on Investment
- learning innovations as they benefit learners, organizations and communities

LIFIA organizes ePortfolio Working For a across Canada to engage any and all parties interested in the ePortfolio for the purpose of collaboration and meeting the LIFIA advocacy goals. From involvement in LIFIA and EIFEL, and from an internet scan, the following ePortfolio projects and services, specific to the adult literacy, bas 0 10.02 150.42264 331.d.02 0 0o0.02 71.99992 26 71 t3262.31737 Tm(c)Tj10.979.5377 Tm( intere)Tj10

## 1. Essential Skills ePortfolio (Canada)<sup>7</sup>

Adult literacy and workplace literacy initiatives are often related formally and informally to the Essential Skills Occupational Profiles (ESOP) . Human Resources Development Canada has invested significant resources in creating ESOP for a large number of occupations;<sup>8</sup> and these ESOP have become the basis of a number of tools for workers and workplace trainers.<sup>9</sup>

Individuals can now create an ESOP ePortfolio using the self-assessment tool available online<sup>10</sup> - a demonstration website for the ESCORT project, "Essential Skills Computerized Occupational Readiness Training". For more than eight years, Tom Clahane and Patrick Cummins have collaborated on developing this project, using different software tools, and it is now at "launch" status. The portfolio.telecampus site is the front end of the overall process, which also includes links to customized learning pathways and instructional modules directly modeled on the Essential Skills Profiles developed by HRSD. The process was first tested by Industry Canada, and recently beta tested by Corrections Canada in the Prince Albert facility. According to the developers, many changes have taken place since that test was completed. The instructional component has been completely replaced since then, and there are a number of national demonstration projects under development.

ESCORT is a tool designed to assist learners across the full scale of possible program approaches, from independent study to highly facilitated learning. The concept is simple-

- identify and recognize prior learning through a variety of assessments,
- research and choose an occupational direction,
- identify the gaps between existing skills and required essential skills as identified in the Essential Skills Profiles,
- create a learning plan,
- document experience through the portfolio,
- remediate where necessary through asynchronous web based instruction until the objectives have been mastered.

The program design can be modified based on the level of support required by the participants. It is specifically oriented to older adolescent/ adult learners and is strongly focused on developing occupational readiness. ESCORT is primarily designed as a web based tool, although it can be modified for LAN environments.

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<sup>7</sup> Information available at <http://www.nald.ca/naldnews/00summer/page2.htm>

<sup>8</sup> Complete list of Essential Skills Profiles is available at [http://www15.hrdc-drhc.gc.ca/English/general/tp\\_trainer.asp](http://www15.hrdc-drhc.gc.ca/English/general/tp_trainer.asp)

<sup>9</sup> *How Others are Using Essential Skills: Adult Education Sphere* at [www15.hrdc-drhc.gc.ca/English/general/UpdateApp2\\_e.asp](http://www15.hrdc-drhc.gc.ca/English/general/UpdateApp2_e.asp)

<sup>10</sup> ESCORT is available online at <http://www.cep-consulting.com/escort/demo/english/intro.cfm>

At some point in the near future, this service should be broadly available to adult learners, and they would create ePortfolio with the expectation – in part - that an employer would receive and process it. There are no tools for employers, particularly basic enough for SMEs or incorporating the nature of foreign trained workers. According to research by the CEP Union of Canada,<sup>11</sup> employers do not make sufficient use of the ESOP for a number of reasons, among them a lack of awareness of essential skills requirements in the workplace and a belief that employees do not require any training. Hence, the ESOP ePortfolio is one tool that workers and workplace trainers can use to promote the importance of ESOP.

According to Cummins,<sup>12</sup> “the Essential Skills Portfolio makes HRDC’s Essential Skills Profiles the centre of a learning/assessment package available free on the Web. Groups or individuals will use the Essential Skills Portfolio Website to assess and document their Essential Skills and to discover what additional skills they need in order to achieve their occupational goals. The package will provide printable learning materials in key areas. It will guide users through building portfolios for the occupations they choose, then generate a résumé which they can forward to prospective employers. It will give learners control over their learning. It will give teachers and learners a comprehensive view of basic education objectives in relation to specific occupations. And it will give employers a clear picture of applicants’ abilities.” At this point, FuturEd is unable to find any service providers (e.g., colleges or private trainers) or individuals who have used the ePortfolio, but it is a current research priority to do so.

## **2. Skills Credentialing Tool (Canada)<sup>13</sup>**

Adult and workplace literacy is often closely related to employability skills as well. A form of ePortfolio, applicable to higher level literacy learners and with a specific credentialing application, is currently under development by the Conference Board of Canada. The Skills Credentialing Tool (SCT) will be an employer-completed assessment of Essential Skills and Employability Attitudes and Behaviors as set out by the Conference Board. The SCT is intended to help employers evaluate their employees’ Essential Skills and Employability Attitudes and Behaviours. The Skills Credentialing Tool is being developed with the support of The Conference Board of Canada’s Skills Solutions Forum (SSF), a multi-stakeholder action research network that brings together business, education and government leaders to engage Canadian employers in the process of building, recognizing and leveraging essential skills and employability attitudes and behaviours in the workforce for competitiveness and growth. A similar tool, based on the Conference Board employability skills, is available to youth online.<sup>14</sup>

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<sup>11</sup> *Opportunities for Tomorrow: National Learning Needs Assessment Summary Report* (CEPU, 1999) available at [www.nald.ca/fulltext/opptom/english/p1.htm](http://www.nald.ca/fulltext/opptom/english/p1.htm)

<sup>12</sup> *The Essential Skills Portfolio* (Cummins, 2002) at <http://portfolio.telecampus.com>

<sup>13</sup> Excerpted from information at <http://www.conferenceboard.ca/SSF/>

<sup>14</sup> Wow-Skills is a self-assessment tool available at <http://www.wow-skills.com/>

According to the Conference Board, the SCT, which will be launched in fall 2004, will be the only employer-completed assessment of Essential Skills and Employability Attitudes and Behaviours<sup>15</sup> leading to a national skills credential for individuals. Ostensibly, employees will earn an employability credential from the Conference Board. A similar tool is under development by Campus Canada.<sup>16</sup> The Record of Learning will be a permanent record of all previous credits, workplace training and formal / informal learning which could be applied to a degree, diploma or certificate awarded by select public post-secondary education institutions in Canada.

The SCT has been developed for employers who wish to provide feedback to employees on their Essential Skills and Employability Attitudes and Behaviours, improve workplace productivity, and establish and communicate a standard for high performance in the workplace. The SCT is also for employees who wish to earn a nationally-recognized skills credential, enhance their workplace performance, and develop their Essential Skills and Employability Attitudes and Behaviours.

The SCT provides a common language and a set of performance-based standards to help employers and employees agree where Essential Skills and Employability Attitudes and Behaviours are concerned. Employers or employees can initiate a skills evaluation using the SCT, but only employers can create an assessment. Individuals control who has access to their own skills records. An employer and an employee must agree on an assessment before it becomes a permanent part of the employee's record. These steps are to ensure that individuals learn how to ask for and accept constructive feedback on their skills performance, and employers have a standard evaluation tool to help them assess Essential Skills and Employability Attitudes and Behaviours.

Current thinking about the ePortfolio, from international experts and initiatives, is that the ePortfolio belongs to the individual, is created by them through a process of reflective learning, and attaches to "evidence" in a digital archive owned and maintained by the individual. In that sense, then, the SCT will probably constitute employer-assessed evidence for the individual's ePortfolio of workplace learning.

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<sup>15</sup> Listed in full at <http://www.conferenceboard.ca/education/learning-tools/pdfs/esp2000.pdf>

<sup>16</sup> *Record of Learning* information is available at [www.CampusCanada.ca](http://www.CampusCanada.ca)

### **3. The EUCEBS ePortfolio (European Union)**

European Union Certificate in Basic Skills (EUCEBS) is an EU-funded project committed to providing in an eLearning environment the opportunity for a high level of interaction between tutor and learner, trainer and trainee.

Establishing an ePortfolio system<sup>17</sup> for use by all who are registered with EUCEBS is intended to help achieve this. Their ePortfolio is a tool to enable the effective monitoring of an individual's own learning within a lively atmosphere of electronic inter-communication. Members of the Virtual Community of ePortfolio users that are expected to build up will be part of the EUCEBS family, whether they are able to attend a registered centre or need to access their ePortfolio remotely.

The project will pilot in training centres and workplaces a competence-based European Certificate in Basic Skills covering 6 domains: Citizenship, Communication, ICT, Interpersonal Skills, Learning to Learn and Numeracy. They are seeking endorsement for the Certificate from the qualifications-awarding bodies of EU member states, will provide validation of the Certificate on-line in a number of European languages, and in due course will set up an enduring framework to ensure the continuing delivery of the certificate. Candidates who pass all the Performance Criteria in any domain can gain a mini- certificate in that domain. A record of awards gained will be sent to the EUROPASS agency of the country where a candidate presents the required evidence of competence. Award-holders will be issued with a European supplement to any national basic-skills certification held, and with a personal European CV. They expect EUCEBS accreditation to be recognised in many European countries as proof of suitability for work. EUCEBS has 9 partners from 8 countries. As a new service, research outcomes are not yet available.

### **4. Key-PAL - Key Skills Portfolio Assisted Learning (Europe)**

The Key Skills Portfolio Assisted Learning (Key-PAL) project<sup>18</sup> is under development by the European Institute for eLearning (ElfEL) with Socrates funding from the European Union. The aim of Key-PAL is to establish the relevance and potential impact of the ePortfolio on the development and assessment of key-skills (basic skills / key competencies).

It is recognized, by ElfEL and others, that there is a need to raise massively the level of basic skills of the European population, in particular in the groups of disfranchised young adults, requires the exploration of innovative approaches, where technology is not only used as a mean to 'teach' new skills, but as a tool to empower learners to manage their own learning. Key-PAL will e 0 10.02 471.8085 158e1034733 124.31693 Tmpl(to)Tj10.02 C

“valorize” self-managed learning and development for the acquisition of key-skills. It will explore the ability of the ePortfolio to support young adults in interacting with all the actors that can contribute to their development and learning: orientation services, educational services (school of second chance, night classes), and all naturally occurring informal and non-formal learning opportunities (at work, in social activities, at home, in libraries, clubs or museums, etc.).

The target group of this proposal is primarily those individuals and agencies working with young adults lacking mastery of basic skills. Beyond this, the project will play a fundamental role in promoting key skills policies to the broad user community. The correlation between poor basic skills - such as literacy - and social exclusion has been highlighted by The European Basic Skills Network (EBSN), which has been funded by the European Commission DG for Employment and Social Affairs. During the Lisbon Council the European five areas of ‘new basic skills’ for the knowledge-based economy have been identified: ICT, Technological culture, Foreign languages, Entrepreneurship; and Social skills. This evolution of the conception of basic skills leads many observers to understand that there is a need for a re-conceptualization and redefinition of ‘basic skills’ or ‘key competences’ in the light of the needs of a knowledge economy and society. As this knowledge economy and society is a ‘digital society’, this re-conceptualization needs to take into account the potential of knowledge, information and learning technologies (KILT).

For Key PAL, ePortfolio is defined as “an extended, dynamic CV, establishing links to an online database, which contains personal and professional achievements, team results, references and all relevant evidence of competence obtained in the course of work and learning. It provides an opportunity to reflect on one’s own professional practice and to share the lessons learned with others.” The aim of Key-PAL is to establish the relevance and potential impact of the ePortfolio for the development and accreditation of basic / key-skills. In order to do so, the project will, among other things:

- Identify new basic skills, and how these skills, together with the traditional basic skills, can be better integrated into the curricula, learned and maintained through life – this is part of the benchmarking exercise;
- Make attainment of basic skills genuinely available to everyone, including those less advantaged, those with special needs, school drop-outs and adult learners – and explore how the ePortfolio can provide effective support to this process;
- Promote informal as well as official validation of basic skills, in order to facilitate continuing participation in education and training, and to promote employability – while traditional portfolios have already demonstrated their ability to support the validation / accreditation process, an ePortfolio requires additional basic skills that might be an obstacle or an opportunity for the recognition of basic competencies;
- Explore the ability of the ePortfolio to support young adults in interacting with all the actors that can contribute to their development and learning: orientation services, educational services



(school of second chance, night classes), and all naturally occurring informal and non-formal learning opportunities (at work, in social activities, at home, in libraries, clubs or museums, etc.)

- Explore the potential of the ePortfolio to go beyond the development and assessment process to provide a framework for self-managed learning and development, to maintain and update continuously one's basic competencies through personal development planning.

The ePortfolio will provide a new kind of consistency between the object (acquiring key-skills) and the means (ePortfolio). The ePortfolio, as opposed to traditional approaches, including traditional 'paper-based' portfolios, is 'consubstantially' linked to the mastering of key-skills:

- Working (learning and living) with others: the ePortfolio provides a collaborative environment where learners can document and share the outcomes of their activities, get feedback from others, provide feedback to others. The ePortfolio is a connectivity tool that encourages knowledge sharing from a group of learners, to an extended professional (social) community.
- Literacy and information literacy: a portfolio is a tool that provides support to individuals to develop literacy skills through building a public (digital) image of themselves that will be greatly beneficial to the improvement self-esteem.
- Numeracy: although perhaps more indirectly linked to the ePortfolio than the literacy key skill, the use of ePortfolios to provide a space where the learner can collect, organize and display the outcomes of activities involving numeracy skills, is an encouragement to build a global view of one's competencies and how they relate and interact.
- Entrepreneurship: the ePortfolio is a connectivity tool that could be used as a hub to interact with others in order to design, manage and exploit the results of a project.
- Learning to learn: the ePortfolio is a tool that can support the learning planning process, or PDP (personal development planning). The ePortfolio provide an environment that facilitates the self-management of learning, the collection of feedback from others.
- Cultural awareness: through valuing informal and non-formal learning, the ePortfolio can boost the desire to contribute more actively in the various cultural activities of a community

According to EifEL, the ePortfolio provides a unique opportunity to explore how can technology provide and support:

- Autonomous learning – how the ePortfolio provides some of the support required for self-managed learning and lifelong learning
- Valuing informal and non-formal learning -- how the ePortfolio values the outcomes of informal and non-formal activities to promote and recognize the acquisition of basic-skills
- Reflective learning – how can the ePortfolio provides a framework encouraging self-assessment, getting feedback from others, reflect on one's' own work and sharing the knowledge acquired with the other members of his/her professional community

- Learner-centric learning – providing the professional and the lifelong learner with the tools that will help him/her to manage / plan the personal / professional development (PDP)
- Interactive learning – encourage the exchange of experience and knowledge among learners and value the ability of learners who do so, i.e., to use the ePortfolio to develop social skills.
- Flexibility – provide a framework that guarantees the maximum flexibility in the way an individual can organize and present his/her portfolio.

In summary, this is fundamentally a research project to test these hypotheses, from which an ePortfolio tool will be created.

## 5. ePortfolio for First Nations

Just as there are unique and ubiquitous adult literacy needs in the First Nations community in Canada, there are unique ePortfolio opportunities. Among other things, the ePortfolio is able to capture and value traditional knowledge and culture in ways that complement Aboriginal communications. This may have been the inspiration for an online portfolio called the “virtual parfleche.”<sup>19</sup> Parfleche is an Aboriginal word meaning a pouch or carrying case – a leather portfolio. FuturEd, in partnership with Learning Agents in Manitoba, is in discussion stages to create an “eParfleche” for Aboriginal youth – a word we’ve coined by adding the “e” for electronic. We first heard the term from Dr. Lori Lambert who told us that First Nations students at Salish Kootenai Tribal College in Idaho, where she works, create paper-based parfleche or portfolios as assessment of learning.<sup>20</sup> While none of these tools focus strictly on essential or basic skills for adults, they are clearly adaptable. This is a “watching brief” for FuturEd.

## 6. ePortfolio and Blogging

Web logging – “blogging” - is becoming closely linked to the ePortfolio in the sense that both are intended to reflect personal ideas, achievements and thought/learning processes. At the University of Edinburgh, David Tosh is researching the “creation of a learning landscape: weblogging and social networking in the context of e-portfolios.” He asserts that “in order to capture learner and tutor enthusiasm, the system should not be an ePortfolio but rather a complete online landscape,” and presents the weblog as a vehicle for creating community. This is an important emerging use of the Internet and eLearning services to learners in general, with potential application to ABE-level students. This too is a “watching brief.”


<sup>19</sup> Information available at <http://www.natureshift.org/Whawk/pouch/>

<sup>20</sup> A powerpoint presentation is available at [http://www.madlat.ca/presentations/Making%20IT%20Click/Lambert\\_Session11.ppt](http://www.madlat.ca/presentations/Making%20IT%20Click/Lambert_Session11.ppt)

## FuturEd Observations

The development of the ePortfolio, in Canada, is in early stages. A Google search reveals numerous ePortfolio tools and services at American colleges and universities. Canadian colleges and universities are slowly implementing portfolio concepts, largely from the perspective of Prior Learning Assessment – recognition of non- formal and informal learning for advance standing and credits. A closer examination of existing ePortfolio tools and services reveals that most are highly targeted to particular audiences and not “transportable” across sectors. There are a number of quality issues to explore.

The framework within which FuturEd will assess the “quality” of ePortfolio tools and services, when there are actual tools and users, are the following standards developed by an international committee of ePortfolio experts under the leadership of FuturEd.<sup>21</sup>

1. A digital archive and an ePortfolio are developed and owned by the individual or organization creating them. The use of both or either, and any changes to them, are under the control of the individual. Both are confidential and access is controlled by the individual.
2. The ePortfolio system has the capacity to maintain a complete inventory of skills and knowledge acquired by the individual through formal, non-formal, informal, accidental and incidental learning. The ePortfolio development process includes thoughtfulness about learning represented.
3. The ePortfolio system lists and describes skills and knowledge in a way that is recognized and respected by educators, employers, professional bodies, and others who receive and process ePortfolios. Where possible, the established competency standards to accommodate unique or non-  
 ePortfolio system links to but also allows flexibility specific competencies.
4. The content of the ePortfolio is verifiable. Methods of validating appropriate, and credible. current, accurate, and learning are flexible,
5. To develop the ePortfolio, there are explicit instructions with examples, a universally-recognized glossary of terms, and professional assistance if required. The ePortfolio is easy to access, use, and modify by the owner.
6. The ePortfolio and archive have the capacity to incorporate a variety of media.
7. The ePortfolio is portable and interoperable in a technical sense.
8. The ePortfolio service is multi-purpose, customisable and adaptable to various uses, e.g., assessment by teachers, learning through personal reflection, planning, individual or community asset mapping.
9. An ePortfolio system is seamless, allowing the individual to create many versions of his/her ePortfolio and use this process throughout life, from primary school through higher education and career training to the workplace and lifelong learning environments.
10. An ePortfolio system provides secure long-term storage, privacy, access and ongoing support.

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<sup>21</sup> ePortfolio Quality Discussion paper is available at <http://www.futured.com/pdf/ePortfolio%20Quality%20Discussion%20Paper.pdf>



## **Appendix A**

### **The ePortfolio and HRD Policy Goals**

**FuturEd White Paper  
Dr. K. Barker: September 2003**

#### **1. *What is the ePortfolio?***

The ePortfolio is an electronic learning record – a personal learning profile created and stored using a computer. The term "learning" means "skills and knowledge" acquired in both the formal education/training environment and the non-formal learning environment of work, community, leisure and family. The term "portfolio" is synonymous with résumé, dossier, skills passport, inventory or profile. An ePortfolio is a cumulative account of an individual's learning, created and maintained digitally.

There are many different types of ePortfolio. Universities encourage students to create records of their learning and credentials. Adult literacy programs assist learners to create Essential Skills portfolios. Commercial products are readily available online and/or for purchase. The content, format and intended uses of the ePortfolio vary widely.

## 2. How does it differ from a traditional résumé?

The traditional résumé sets out credentials and work experience; a good résumé tries to capture the learning acquired from those items but it seldom includes the vast array of non-study and non-work experiences of the individual.

Characteristic	Traditional Résumé	ePortfolio
content	lists of credentials and work experiences (with skills and knowledge implied)	lists of skills and knowledge (with learning experiences and credentials referenced where appropriate)
development process	keep track of formal credentials, dates, employer addresses, job descriptions	examine learning experiences for the skills and knowledge acquired
perspective on learning	learning happens largely in formal institutions, and credentials and work experience are the valued learning opportunities	learning happens in both formal and non-formal situations, and all learning has value
format	short and factual	may be more comprehensive, with broader lists that can be cross-referenced with actual skills and knowledge in job and training requirements
validation	credentials and employer's references have been unchallenged proxies for learning	different forms of validation are required, in addition to credentials and references, e.g., personal references
purpose	to get a job	for career planning and development: appropriate work and/or training

Taking these differences into account, it makes sense to use a computer to develop and maintain a portfolio that continues to change with new experiences and learning. And this only is effective or efficient if there is a system to recognize and utilize the new form of learning record – the ePortfolio.

### **3. What does the ePortfolio system do?**

In 1997, under the leadership of Dr. Barker of FuturEd, the Canadian Labour Force Development Board (CLFDB; no longer operational) hypothesized that the systematic application of an ePortfolio system throughout Canada could “increase educational productivity, enhance economic productivity and resource utilization, and enable individuals to maintain balance and a sense of self in turbulent times.” A working group of the CLFDB labelled the ePortfolio “a Skills and Knowledge Profile” (SKP) and defined it as a tool by which an individual could express his/her formal and non-formal learning in a standardized and credible manner to a wide variety of stakeholders for personal, economic and education/training development.

The aim of CLFDB projects was to contribute to increasing the effectiveness, efficiency and equity of Canada's labour force development system. The term "labour force development" included pre-employment training and education, skills and knowledge upgrading and retraining, accreditation and regulatory processes, career and employment counselling, access to employment in general, access to appropriate employment that best uses an individual's learning, and career development through planning and opportunity. That system was not perceived to be sufficiently effective, efficient or equitable. More specifically, a learning record or Skills and Knowledge Profile was thought to resolve the following problems.

*3.1. Problem: Large numbers of Canadians, approximately 10% in October 1996, were unemployed; even more, in large numbers, were underemployed. Not all those individuals were unemployable. This is a waste of human resources.*

It is often assumed that unemployed and underemployed individuals are not skilled, and that they'd be employed if they had the skills and knowledge that are in demand. This may be an incorrect assumption. Most people have a far broader array of skills and knowledge than they are given credit for, learning that has been acquired over time through education, work and life experiences in Canada and elsewhere. They need the opportunity to determine, describe and use the skills they do have. It may be that there is available work -- a job and/or self-employment – requiring just that learning.

*Solution: An ePortfolio can be the mechanism through which individuals take stock of their varied skills and knowledge and organize them in a systematic fashion to gain employment or more appropriate employment.*

- 3.2. *Problem: Although many immigrants come to Canada with highly developed skills and knowledge, they have difficulty gaining recognition of that learning and therefore have enormous difficulty obtaining relevant and appropriate employment.*

Large numbers of unemployed and underemployed people have gained skills and knowledge outside Canada and within systems that are different from and unfamiliar to the Canadian context. Employers, educational institutions, accrediting and regulatory bodies do not have the tools to assess these skills, so these individuals often remain marginalized. This, too, is a waste of human resources and a contradiction of Canada's immigration policy.

*Solution:* An ePortfolio becomes a tool by which to express and seek recognition for skills and knowledge acquired outside Canada.

- 3.3. *Problem: Large numbers of Canadians recognize that they need skill upgrading and further education for employability reasons. Many adult learners do not have the tools and opportunities they need to ensure that their resources (time, energy and finances) are used to advantage. This, too, results in wasted resources.*

It doesn't make sense for adult learners to re-study skills and knowledge that have already been acquired. It does make sense that, if individuals have an inventory of their acquired learning, they could:

- target missing or needed skills and/or knowledge through formal and/or non-formal learning experiences;
- expand and enhance acquired skills and knowledge; and
- get credit towards formal credentials or certification, if those are necessary.

Resources of the individual, governments and training institutions are used more efficiently and effectively through this process of assessing and recognizing the learning that an individual already has, providing "top up" learning opportunities in ways that are responsive, customized, competency-based, modularized, and flexible.

*Solution:* An ePortfolio can be a mechanism by which individuals inventory or catalogue their acquired learning for purposes of skill upgrading, credential acquisition, and lifelong learning.

- 3.4. *Problem: As individuals look for jobs or make career changes, they find dozens and dozens of different means by which to make application for work. The variety of options and expectations is confusing, frustrating and time-consuming for individuals, both employers and workers, to deal with.*

When people apply for work, they are under pressure to create résumés that help them stand out from among the many job seekers. The options seem endless; advice is plentiful, yet contradictory. On the other side of the table, to select employees, employers are faced with piles of résumés, which, after a very short time, begin to look alike, with lists of similar credentials and bewildering work experiences. Why can't individuals just list what they know and can do?



*Solution:* An ePortfolio, thoughtfully conceived, can be a mechanism or tool for presenting one's acquired skills and knowledge and for matching it, in a systematic fashion, to the skills and knowledge that is required in a particular work situation(s). It can make the labour exchange function far more effective, efficient and equitable.

3.5. *Problem:* Often employers feel that they have to lay people off and/or find new workers when, in fact, the human resources they need may be already in their workforce. They may not have effective tools for determining and recognizing the skills and knowledge of their existing workforce.

As employers seek to enhance productivity and maximize the use of resources, they may not recognize the wealth of their existing human resources.

*Solution:* An ePortfolio can be a tool for better describing, understanding and applying the capabilities of the existing workforce. It can help match people to new and different jobs within the worksite. And it can be used to help with planning for training and career development to meet the goals of individuals and of the business enterprise in a systematic and timely fashion.

3.6. *There is an expectation, in the workforce, that individuals will continue to learn new skills and knowledge, and to be able to demonstrate that they are doing so. Keeping track of the range and scope of continuous learning may be complex and difficult.*

Increasingly, individuals are adding to their repertoire of skills and knowledge by deliberately learning through, for example, training programs, reading materials, software programs, and seminars. Keeping track of that "formal learning" is a problem, given that each may be different in terms of training source or provider, recognition of completion, and duration. Those who bother to keep track may end up with nothing more than a list of courses, seminars, etc. from a number of training providers and venues. What do they really mean?

*Solution:* An ePortfolio may be a means by which to account for lifelong learning, translating the individual's learning achievements from, for example, a workshop, a good book, or a university course into a list of skills and knowledge that can be continuously added to. It can become a tool to promote transitions from school to work to school to work throughout a lifetime.

In summation, each of these problems can be framed as a **human resources development policy goal** to be addressed as follows.

<b>If.....</b>	<b>then, the ePortfolio could be a means by which</b>
1. human potential should not be wasted because individuals are unemployed and/or underemployed due to the fact that their repertoire of skills and knowledge is not fully catalogued or utilized	to recognize an individual's entire repertoire of skills and knowledge acquired through formal education/training and through life and work experience
2. immigration policy favours individuals with high levels of skill and knowledge, yet those very people have difficulty getting employment that takes advantage of their acquired skill and knowledge	employers and accrediting institutions can assess and recognize the body of skills and knowledge that foreign-trained workers bring to the employment environment
3. time and finances should not be wasted as they are when the formal learning system (1) does not recognize that individuals may already possess some skills and knowledge, and (2) expects learners to fit standard program timeframes	to recognize that individuals, as potential students, have and can credibly demonstrate their acquired learning so that they may shorten formal study/training time, meet some pre-requisites, and target learning needs
4. people and jobs should be more easily matched because (1) individuals should present their entire record of learning, and (2) matching processes should be less numerous and varied	both workers and employers could match individual learning records to skills and knowledge requirements in a systematic, authentic fashion
5. employers should realize the full capacity in their workforce	employers could use understand and utilize the individual and collective skills and knowledge of their existing workforce
6. lifelong learning is an expectation in contemporary society	a means by which to keep track of skills and knowledge acquired by individuals

The CLFDB felt that these six HRD policy goals could be achieved, in part, by the systematic implementation of the ePortfolio concept on a pan-Canadian basis.

#### 4. How can the ePortfolio achieve public policy goals?

By meeting certain standards, the ePortfolio can systematically, comprehensively and credibly contribute to achieving some labour force development policy goals. The standards are based on the following logic.

3.1 If the ePortfolio is intended to contribute to the effectiveness, efficiency, and equity of labour force development, the ePortfolio **itself** must be:

- effective: it must do what it claims to do, it must profile skills and knowledge, in a manner that is recognized by all the labour market partners and that places value on learning that has previously been hidden
- efficient: it must make maximum use of resources, human, time, and financial, neither duplicating existing processes nor necessitating too many additional resources
- equitable: it must be accessible to and usable by all, barrier and bias-free
- easily usable: it must be accurate and adequate

3.2 In order to make a contribution to **increasing** effectiveness, efficiency and equity, it must be somehow different in a positive sense. There would be no need for innovations, such as the ePortfolio, if the system were considered by all to be effective, efficient and equitable.

3.3 In order to make a contribution to increasing effectiveness, efficiency and equity of the human resource development **system**, the ePortfolio must make a positive contribution for one or all of the labour market partners while making no negative contribution for any labour market partner group<sup>22</sup>. The "labour market partners" include: employers, workers and learners, providers of education/training products and services together with accrediting and regulatory bodies, and society represented by federal and provincial governments. Therefore, in Canada's labour force development system, the ePortfolio should contribute to:

3.3.1 the effectiveness, efficiency and equity of education and training by:

- increasing access, for individuals, through the recognition of non-formal learning (i.e., skills and knowledge acquired in the work, community, leisure and family environment), and by helping to meet course/program prerequisites;
- increasing numbers and variety in learners served by teaching institutions, by targeting those most in need and working together to meet the needs of individual learners and communities; and

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<sup>22</sup> Good public policy should meet, at least, the following three criteria: (1) the Pareto Criterion: Will the policy action result in at least one person being better off and no persons being worse off? (2) the Kaldor-Hicks Criterion: Will the policy action result in a net gain in socio-economic efficiency and can those who gain compensate the losers? (3) the Rawls Criterion: Will the policy action result in a gain in welfare for the members of society who are worst off?

- reducing redundancy, by not requiring individuals to study skills and knowledge that they may have already acquired and, thereby, the resources required, the time and finances for both institutions and individuals.

3.3.2 economic productivity and resource utilization by:

- enabling the appropriate utilization of the existing skills and knowledge of individuals, by workers and learners, and of the existing workforce by employers and industry; and
- increasing access to employment for the unemployed, and to appropriate employment for the underemployed by profiling (identifying and listing) the entire range of skills and knowledge held by individuals.

3.3.3 the ability of individuals to maintain balance and a sense of self in turbulent times by:

- connecting individuals to the labour force development system through equitable access and accommodation in opportunity, programs and services;
- increasing self-awareness, utilizing strengths and improving on skill/knowledge deficits, and career planning; and
- providing more and more relevant information to the labour market partners, particularly those who can provide opportunity, stability and leadership.

3.4 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 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.

3.5 Therefore, the **recommended national ePortfolio standards** to meet HRD Policy Goals are as follows.

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.

#### **4. A final word about standards<sup>23</sup> ...**

Standards describe what is acceptable and what isn't; therefore, standards are a standard means by which to implement public policy. The U.S. Office of Technology Assessment, in its 1992 document *Global Standards: Building Blocks for the Future*, observes the following.

*Standards govern the design, operation, manufacture, and use of nearly everything that mankind produces. There are standards to protect the environment and human health... There are even standards of acceptable behaviour within a society. Standards generally go unnoticed. They are mostly quiet, unseen forces, such as specifications, regulations, and protocols, that ensure things work properly, interactively, and responsibly (p. iii).*

Standards, like policies, exist whether they are clearly stated or just generally accepted; however, standards that are not clearly stated often allow too much room for interpretation, confusion and abuse. Fair and justifiable formal standards are often needed to ensure quality of products and accountability of systems. In the view of the labour market partners, this is the value of national EPORTFOLIO standards. These standards are intended to be a comprehensive description of best practice in the development and use of a Skills and Knowledge Profile that accounts for an individual's entire repertoire of learning so that individuals have increased access to training and employment.

The Office of Technology Assessment also notes that standards are developed or achieved by one of three methods:

1. by government, through a regulatory process (authority);
2. through the market, on a de facto basis (custom);
3. negotiated through a voluntary consensus process (consent).

The CLFDB process was the latter process, i.e., these recommended national ePortfolio standards were developed and recommended by labour market representatives on the Board and its Learning Record working group. While the CLFDB had no authority to enforce standards, it had the responsibility to generate recommended national standards that describe best practice and contribute to the achievement of a labour force development system that is effective, efficient and equitable. Unfortunately, this could not continue to fulfil this mandate.

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<sup>23</sup> adapted from the CLFDB Training Standards (1995) and PLAR Standards (1996) background documents

Documents available from FuturEd.

Barker, K. (2000). *The Electronic Learning Record: Assessment and Management of Skills and Knowledge. ePortfolio Research Report*. Vancouver: FuturEd Inc. available in the e-library at [www.FuturEd.com](http://www.FuturEd.com)

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## Appendix B

### The ePortfolio and Human Capital Accounting

FuturEd White Paper  
Dr. K. Barker: September 2003

#### Introducing Human Capital Accounting

The implementation of Human Capital Accounting (HCA) is an OECD-recommended means of improving the efficiency of human capital investment and utilization. The concept of HCA has been explored and developed by the OECD as a means to understand and implement the necessary adaptations individuals and nations must make to measure and utilize knowledge assets – knowledge resident in human beings – in relation to economic performance and prosperity. In 1996, the OECD concluded that public policy must focus on the development of better signals for competence validations, valuation, accounting and financial reporting. Firms had begun to think of employees as investments rather than costs, and as the cost-to-investment-based thinking evolved, the transition continued towards full accounting of human capital investments as assets that produce returns over an extended period of time. The OECD publications *Measuring What People Know: Human Capital Accounting for the Knowledge Economy*<sup>24</sup> and *Human Capital Investment: An International Comparison*<sup>25</sup> extend the treatment of physical capital to human capital in a discussion of knowledge production, diffusion and consumption in light of the disciplines of economics, accounting and education.

Human capital is defined as *the knowledge that individuals acquire during their life and use to produce goods and services or ideas in market or non-market circumstances*.<sup>26</sup> According to the OECD, this definition of human capital is non-committal about the source, nature or validation of embodied competences; and helps to focus on two issues: (1) the productive capacity arising from knowledge; and (2) the utility of improving the methods for assessing the productive capacity of human capital. HCA is a method of systematically identifying, measuring and presenting information about the human resources of an organization. It is related to and sometimes confused with such other concepts as: intellectual capital,<sup>27</sup> intellectual potential,<sup>28</sup> knowledge management, Human Resources Accounting (HRA), Human

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<sup>24</sup> *Measuring What People Know: Human Capital Accounting for the Knowledge Economy* (OECD, 1996)

<sup>25</sup> *Human Capital Investment: An International Comparison* (OECD, 1998)

<sup>26</sup> *Measuring What People Know: Human Capital Accounting for the Knowledge Economy* (OECD, 1996), p. 22.

<sup>27</sup> Intellectual capital is proprietary information and knowledge that lowers costs or increases customer value; it is human capital plus structural capital such as databases and documents. Examples are

Capital Management (HCM), intangible investments<sup>29</sup> and/or intangible assets – which range from the intellectual property rights of patents, trademarks, copyright and registered design through contracts; through trade secrets and public knowledge such as scientific works; to the people-dependent or subjective resources of know-how, networks, organizational culture, and the reputation of product and company.<sup>30</sup> FuturEd has concluded that the concept of HCA is also directly related to human resources management in the knowledge economy, lifelong learning, PLA/PLAR, electronic LMI management, and the electronic learning record or ePortfolio.<sup>31</sup>

The basis for interest in the ePortfolio, the assessment and recognition of non-formal and informal learning, and Knowledge Management is expediency. Expediency in the areas of human resources development and management, from the individual to the national level, is needed to address the challenges presented by the emerging Knowledge-based Economy, skills shortages, education/training reform, and structural unemployment. For example, in their analysis of the International Adult Literacy Survey (IALS) results, Human Resources Development Canada (HRDC) and Statistics Canada have concluded “that the ‘new’ economy requires workplace arrangements that empower employees to make workplace decisions and challenge them to use existing skills and develop new ones.”<sup>32</sup> The Organization for Economic Co-operation and Development (OECD) has deemed it important that nations concern themselves with how and why they invest in and use human capital because a commitment to improving the skills of citizens is one of the principal means for dealing with economic uncertainty. The OECD has concluded that improvements to the systems of human capital acquisition, measurement, accounting and valuation are key factors in helping a nation’s firms to compete in the globalized economy. “Investment in education and training helps form the human capital – the skills and abilities – that is a vital element in assuring economic growth and individual advancement and reducing inequality. It is an important element in combating unemployment and social exclusion.”<sup>33</sup>

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patents, trade secrets, copyright protection, trademarks and contracts. An “intellectual capital” reading list is available at <http://www.icmgroup.com/biblio.html>

<sup>28</sup> *The Austrian Approach to the Measurement of Intellectual Potential* (Schneider, 1999) at <http://users.austro.net/measuring-ip/OPapSchneider/theoreticalframework.html>

<sup>29</sup> Intangible investments, in this context, include research and experimental development, training, organizational change, marketing and software.

<sup>30</sup> Hall, R. 1992. The Strategic Analysis of Intangible Resources, *Strategic Management Journal*, Vol. 13.

<sup>31</sup> For more information on the ePortfolio, see other FuturEd papers, e.g., *The ePortfolio and HRD Policy Goals* (Barker, 2003) available at [www.FuturEd.com](http://www.FuturEd.com).

<sup>32</sup> *Employee Training: An International Perspective* (Kapsalis, 1997), p. 9.

<sup>33</sup> *Counting Human Capital* (Healy, 1998).



## Human Capital in the Knowledge-based Economy

In the Knowledge-based Economy, simple capitalism is replaced by intellectual capitalism.<sup>34</sup> Stewart says: "Thinking and invention are the assets upon which knowledge work and knowledge companies depend....The question for companies is how to acquire as much human capital as they can use profitably. Human capital grows two ways: when the organization uses more of what people know and when more people know more stuff that is useful for the organization. The ePortfolio is a means by which organizations can assess what people know and can do, i.e., the intellectual or human capital assets, and then use it to maximum advantage. "To use more of what people know, companies need to create opportunities for private knowledge to be made public and tacit knowledge to be made explicit." Clearly, the first step is to inventory the private knowledge and tacit knowledge that individuals hold. Interestingly, Stewart notes that the paradox is that, when individuals are able to capture for themselves almost all the value of their human capital, they often become independent contractors.

### HCA to Promote Lifelong Learning

The concept of HCA is related to lifelong learning and the need to develop a lifelong learning culture. On the one hand, HCA addresses the challenge to the reliance on credentials for employment and advancement. There is a growing body of literature about rampant credentialism and the dubious utility of some academic credentials. The OECD acknowledges that "usually education certificates are used to measure actual competencies, but these achievement certificates are imprecise at best."<sup>35</sup> The OECD foresees a situation where "any new investment in learning will be undertaken with more attention to type, method and content. In other words, quality of education will be more important than quantity."<sup>36</sup> The ePortfolio facilitates, perhaps encourages, the acquisition and recognition of skills and knowledge outside the formal credential-acquisition system.

On the other hand, while individuals, indeed all of society, are urged to adopt lifelong and life-wide learning, there is an acknowledged lack of incentives other than formal credentials. The OECD asserts that individuals need to be able to see their investments in skill formation as a lifelong commitment to building assets. It has been hypothesized that an ePortfolio, by accurately reflecting an individual's acquired skills and knowledge, could increase access to training, appropriate employment and/or career advancement – ostensibly incentives for some.

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<sup>34</sup> *Brain Power: Who Owns It...How They Profit From It.* (Stewart, 1997) at [http://www.pathfinder.com/@\\_@VMxyFQcAT\\*x9@7yn/fortune/1997/970317/cap.html](http://www.pathfinder.com/@_@VMxyFQcAT*x9@7yn/fortune/1997/970317/cap.html)

<sup>35</sup> *Measuring What People Know: Human Capital Accounting for the Knowledge Economy* (OECD, 1996); p. 20.

<sup>36</sup> *Redefining Tertiary Education* (Wagner, 1998) at <http://www.oecd.org//publications/observer/214/article4-eng.htm>

Fundamentally, the most basic incentive is lacking: acquired skills are not considered to be assets by banks. The OECD poses the rhetorical question: “in capital markets, will banks and other lenders recognize human capital stocks and acquisition in ways that reflect asset values?” The current answer is “no;” and fewer adults are willing to invest in human capital acquisition – e.g., advanced degrees – when other investments are considered to be tangible assets. As noted by the OECD, the continuing emphasis on lifelong learning reinforces the need to reform the information and decision-making mechanisms that determine learning acquisition choices. They recommend that “reforms should take into account, for individuals, their lifetime pattern of investment in human capital, and for institutions, the existence of multiple distinct learning pathways and the need for mobility and linkages between them.”<sup>37</sup>

### **HCA to Promote Return-on-Investment**

The concept of HCA is also directly related to “return-on-investment” (ROI) in education and training, and education/training reform. The OECD notes that it is common practice in most countries, industries and firms to make budgetary decisions on funding for compulsory schooling based on the assumption that the social and economic benefits outweigh the costs; however, in many areas, the requirements of the knowledge-based economy increase the pressure to improve the effectiveness and efficiency of human capital formation. It is concluded that “a variety of problems are posed by the predominant methods for assessing human capital that are geared to the needs of an education system that extracts fees by controlling credentials as opposed to a system where the output potential of human capital is measured on the basis of competence to produce regardless of how much knowledge was acquired.”<sup>38</sup>

Further to that, “one of the obstacles to measuring the output potential of human capital is the segmented and oligopolistic character of educational and professional certification... rooted in the historical power of universities, guilds and professions to forbid the utilization of acquired competences without certification...largely explained as ways of extracting rents from investors in human capital. The traditional state-sanctioned assertion of property rights over the knowledge acquired when people invest in human capital is one way of resolving the paradox of knowledge as a public good and as inalienable from the person in whom it is embodied.” At the heart of this paradox is the reality that human capital must be embodied in humans while rents that accrue from the utilization of that knowledge in production must be shared in order to finance learning institutions. The OECD is clear that new forms of human capital accounting are needed in order to increase return on investment in human capital formation.<sup>39</sup>

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<sup>37</sup> OECD, 1996; p. 73.

<sup>38</sup> OECD, 1996; p. 47.

<sup>39</sup> Human Capital Investment: An International Comparison. (OECD, 1998)

## HCA and the Assessment of Acquired Learning

The link between HCA and ROI leads to the connection between HCA, Prior Learning Assessment (PLA)<sup>40</sup> and learning records. According to the OECD, PLA offers to individuals reduced risk of investing in human capital. For firms, it makes HCA simpler and less expensive. For governments, there is the incentive of more efficient expenditure allocation during times of fiscal pressure. PLA “renders knowledge acquisition methods neutral,” giving all forms of learning equal chances at being validated.<sup>41</sup> Imbedded within HCA, PLA has the general impact of reducing the transaction costs both for individuals seeking to invest in human capital or enter into a contract to rent their skills and for the firm’s internal and external labour market decision making.

Using PLA to reduce the cost and duration of incremental human capital investments relative to an individuals existing asset base is a contribution to efficient allocation of individual resources and an investment incentive that reflects rates of return to recurrent education. To reap the benefits of PLA and human resources accounting practices, the OECD asserts that the state should:<sup>42</sup>

- ◆ strengthen market valuation of training and competences, develop a system for measuring competences designed to favour modular and continuing learning, and “reduce the lumpiness of investment imposed by the current certification system”;<sup>43</sup>
- ◆ encourage and/or capitalize firms to collateralize and amortize knowledge;
- ◆ give clear title to well-defined competences through universal institutions for assessment and broadly recognized mechanisms for financial accounting;
- ◆ generate transparency in labour contracting by revealing employee assets and employer benefits;
- ◆ validate alternative learning acquisition.

Based on the work of Drucker and Reich, the OECD concludes that individuals, firms and governments are making choices and using resources to invest in the acquisition of human capital based on signals or institutions developed under significantly different economic conditions; and that it might be useful for them all to consider the role of improvements to the financial accounting and reporting of training and labour force qualifications as an innovative, supportive or even alternative method of enhancing active labour marker policies. They should consider new institutions and regulations that (1) improve the transparency and certainty with which human capital is valued for all new members of the labour market, and (2) establish the collective parameters and guard the general interest when it comes to defining

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<sup>40</sup> Different terms are used to capture the notion of the assessment of non-formal and informal learning.: Prior Learning Assessment, Prior Learning Assessment and Recognition (PLAR), Recognition of Prior Learning (RPL)>

<sup>41</sup> OECD, 1996; p. 82.

<sup>42</sup> Ibid., p. 83-84.

<sup>43</sup> Ibid., p. 82.

competences, assessment methods and recording conventions based on processes that are simultaneously inclusive, decentralized, and based on a common general framework.<sup>44</sup> “Measuring and recording competence acquisition, in order to improve human capital information and decision-making, requires the development of low cost, universally accepted, and labour market relevant systems for defining and assessing knowledge acquired for use in the workplace. They need to (1) accommodate entry-level as well as adult learners; and (2) balance the competing interests of employers, employees, educators, professional associations, citizens, equity-seeking groups, and different regions.

### **HCA and the Future of Labour Relations**

The concepts of HCA and the ePortfolio are also related to labour law, the challenge being to apply contract law to investments in human capital. For example, a firm may be encouraged or required to invest in training, but the reciprocal obligation of the employee to acquire additional human capital is not equally enforceable. The question is posed: “will firms negotiate contracts that recognize the achieved and validated competence assets of workers?” The OECD concludes that a method of overcoming this problem is to provide market type incentives to labour by attaching value to the acquisition of human capital, i.e., by enabling both employers and employees to internalize the costs and benefits of investment in human capital acquisition.

In this respect, HCA and electronic learning records are also linked to the new forms of accounting for production and consumption, e.g., the United Nations Human Progress Indicators and the assessment of women’s unpaid work. Since most OECD countries do not provide formal recognition of human capital as an asset in financial accounting and reporting systems at any level, individuals find it difficult to establish readily accepted records of the asset value of their skills beyond the conventional certificates of human capital acquisition.<sup>45</sup> It has been argued that the measurement of human capital is untenable because human-embodied knowledge is non-physical, non-appropriable, unmeasurable, and inherently incompatible with the conventions and institutions that guide the day-to-day transactions recorded by financial accounting and reporting. However, human capital is an asset – an economic resource controlled by the entity with an objectively measurable acquisition cost – by the following four accounting condition.<sup>46</sup>

- ◆ It is measurable by the output potential of specific competences and is, therefore, predictable.
- ◆ The fruits of investment in human capital can be appropriated by the investor as they accrue.
- ◆ The cost of buying or “renting” can be objectively determinable.

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<sup>44</sup> Ibid., p. 81.

<sup>45</sup> Ibid., p. 39.

<sup>46</sup> Ibid., p. 44.

- ◆ Day-to-day transactions recognize estimates of the value of the output potential of human capital investments.

The concept of an ePortfolio is congruent with what the OECD set out as one of three means of measuring human capital:<sup>47</sup> testing people for their competencies. A second means is to look at the cost of acquisition of certified knowledge; however, "in most countries, a

In this regard, HCA is related to reforms in assessment processes. Traditional assessment has been limited, e.g., to norm-referenced, standardized tests; and new forms of assessment include authentic, embedded, competency-based, standards-based and/or “alternative” assessments. Competence-based assessment, a fundamental of human resources accounting, provides a framework for adult learning and reflects a shift in the workplace away from the simple connection between the well-defined, stable skills required for production in the manufacturing era and the cognitive / behavioural competences instilled by the compulsory educational system. In all OECD countries, there is a trend towards more socially organized and explicit systems for recognizing acquired competences, as reflected by the PLA literature. As well, there seems to be general recognition of the need to improve incentive structures surrounding human capital investment and utilization.

### **Implementation of HCA and the ePortfolio**

To implement HCA and an ePortfolio system, a nation-wide effort may be required. The OECD notes that firms do not have the capabilities or financial means to pursue assessments that are often imprecise or expensive; nor do they have the negotiating experience to allow them to enter into contracts that explicitly validate the estimated value to the firm of a person’s acquired skills. “In the absence of nation-wide efforts to establish appropriate and affordable human capital information and decision-making systems, firms are unable or unwilling to develop such systems on their own are likely to suffer from lower productivity growth and reduced ability to compete because they will be less effective and efficient in acquiring and using human-embodied knowledge.”<sup>52</sup> To this end, the OECD acknowledged PLA as a most promising area of innovation, referring to it as “achievement-based evaluation of human capital accumulation.” They note that “explicitly negotiated and transparent links between competence validation and market validation have not yet been made; however...there is a new and growing potential to turn measurement into valuation as new active labour market policies are combined with reform of educational financing and closer ties between learning institutions and the workplace.”<sup>53</sup>

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<sup>52</sup> OECD, 1996; p. 54.

<sup>53</sup> Ibid., p. 59.

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