A REVIEW OF THE STATE OF THE FIELD OF ADULT LEARNING

E-LEARNING

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INTRODUCTION

This study on the State of the Field of E-learning for adult learning was conducted under the auspices of the Canadian Council on Learning. It is one of eight *State of the Field* reports on adult learning in Canada. The other reports include Adult Learning, Gender & Learning, Culture & Learning, French as a Minority Language, Learning Communities, Social Movements, and Access & Barriers to Adult Learning. Together, these reports are intended to inform the Canadian Council on Learning and to develop a knowledge baseline for the Adult Learning Knowledge Centre recently launched at the University of New Brunswick.

The research content for the topic of e-learning was selected based on the expertise and judgment of the research team; a team that was comprised of a lead researcher from NRC-IIT's People-Centred Technologies Group and two graduate students. Methods for reviewing and analyzing data included searching multiple databases, bibliographies, Web sites, and publications, with strategies such as surveying tables of contents and indices, narrowing and combining categories. Selection strategies involved constant consultations between members of the research team, brainstorming based on personal experience and knowledge of the terminology commonly known in the field.

The general criteria used by the research team included the following:

a) Comprehensiveness:
    a. Major theoretical and/or research works with significance for the e-learning field in Canada; local, regional, national and international;
    b. Recent and contemporary works unless considered milestones in the knowledge base.
b) Quality:
    a. Balance of theoretical orientation and ideological perspective;
    b. Scholarly refereed literature but in cases where sources were limited, everything available was accepted for review and cited when relevant.
c) Practicality:
    a. Material most immediately accessible given the short time framework within which to complete the research.

Limitations of the study

While every effort has been made to verify source references and locate updates on the Web site links, the research team was constrained by the limited time allocated for this project. Reliance on search engines, contributions from experts in the field, and existing bibliographies, Web sites and indexes were the primary sources and search approaches; however, this report should not be seen as the definitive study of all of the existing literature, materials, or networks for Canadian e-Learning. Moreover, as described earlier, the general criteria and guidelines for the study were broad, making

the selection and decision-making processes less than exacting and less than perfectly systematic. This report is a fair representation of the knowledge base, as of March 2006. It is hoped that future updates will overcome the limitations of this initial study.

This report on the state of the field of e-learning focused primarily on topics related to adult learning and is divided into the following sections: introduction, history of the area, key theories, specific groups and activities in e-learning, indicators of change, conclusion, generalizations and gaps, and promising lines of inquiry.

E-learning defined

Different terminologies have been used to define learning that takes place online, a fact that makes it difficult to develop a generic definition. Authors agree that a single definition for e-learning has yet to be found. Terms that are commonly used to define online learning include e-learning, Internet learning, distributed learning, networked learning, tele-learning (Collis 1996), telematics (Selinger & Pearson 1999), distributed learning (Bates, 2000; Ally, 2004), virtual learning, computer-assisted learning, Web-based learning, and distance learning (Ally, 2003).

E-learning covers a wide set of ICT technology-based applications and processes, including computer-based learning, Web-based learning, virtual classrooms, and digital collaboration and networking. It includes the delivery of content via Internet, Intranet, Extranet, satellite broadcast, audio-video tape, interactive TV and CD-ROM (Hambrecht, 2000; Kaplan-Leiserson's online glossary).). Nonetheless, the different terminology may all point to a similarly conceived educational experience.

All of these terms imply that the learner is at a distance from the tutor or instructor, that the learner uses some form of technology (usually a computer) to access the learning material, and that the learner uses technology to interact with the tutor or instructor and other learners, and that some form of support is provided to learners (Ally, 2003).

Before anyone called it e-learning, in late 1997 learning guru Elliott Masie said: "Online learning is the use of network technology to design, deliver, select, administer, and extend learning." The term e-learning was later coined by Jay Cross in 1998, who has also suggested since then that: "It has become trite to point out that the 'e' doesn't matter and that it's the learning that counts" (Cross, 2004). Thus, the conduit for learning happens to be technology but the delivery method is not central to learning and teaching in general.

Anderson and Garrison (2003) describe the evolution of technology use in education and how e-learning can accommodate more progressive pedagogies such as cognitive constructivism and social constructivism.

> Initially, computers were applied in behaviourist modes in accordance with Skinner's work (Ravenscroft 2001), which emphasized the teacher's control over what is learned and how it is to be learned. More recently, emphasis is on the constructivist use of technologies which provide students with opportunities to construct their own understandings. Skinner's behaviourism, Piaget's cognitive constructivism and Vygotsky's social constructivism can all be facilitated through e-learning.

The term E-learning brings together different fields as highlighted in the following definition: "E-learning is the unifying term to describe the fields of online learning, web-based training, and technology-delivered instruction".
(Retrieved on November 15, 2005 from http://agelesslearner.com/intros/elearning.html).

E-learning is not only about training and instruction but also about learning that is tailored to individual needs, is flexible and interactive. The following definitions of e-learning highlight the use of computer and communications technology in this process.

> E-learning is an approach that facilitates and enhances learning through both computer and communications technology. Such devices can include personal computers, CD-ROMs, Digital Television, Personal digital assistants (also called PDAs) and Mobile Phones. Communications technology enables the use of the Internet, email, discussion forums, collaborative software and team learning systems.
>
> E-learning may also be used to support distance learning through the use of Wide area networks (or WANs), and may also be considered to be a form of flexible learning where just-in-time learning is possible. Courses can be tailored to specific needs as either synchronous (in real time) or asynchronous learning (stored for use later on). Where learning occurs exclusively online, this is called online education. When learning is distributed to mobile devices such as cell phones or PDAs, it is called m-learning.
> (Retrieved on November 15, 2005 from http://en.wikipedia.org/wiki/E-learning).
>
> Elsewhere, e-learning is described as the following: "The delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material."
> (Retrieved on November 15, 2005 from http://derekstockley.com.au/elearning-definition.html)

Even though no single definition of e-learning has been formulated, these various definitions of e-learning provide a general sense of the term as applicable across fields. Ultimately, an amalgam of the above definitions provides an overall view of e-learning which can be applied to adult learning as well.

A theory for e-learning

Much has been written about e-learning practice however little attention has been given to the theory underlying e-learning. According the Nichols (2003), the weight of published articles and institutional investment in practice and update of Web-based education tools in the past decade demonstrates that e-learning has achieved a momentum that will make it a central part of future education. What is more, the bulk of literature in e-learning is practice-based and is typically presented in a descriptive format. The majority of conference presentations consist of a 'here's what we did and here's the evaluation format' which do little for transferability to other institutions or even other courses (Nichols, 2003). Similarly, our search through the body of literature on the field of e-learning results in a fragmented landscape with inconsistent use of common terms. It is unlikely that e-learning practice will continue to evolve unless the theoretical underpinnings of e-learning are

explored and debated, providing a wider platform and a common philosophy for e-learning development.

There are few examples of academic literature specifically concerned with e-learning theory and unfortunately the use of technology in education has tended to be technology-led rather than theory-led (Ravenscroft, 2001). In describing the relationship between information and communication technology (ICT) and teaching, Watson (2001, p. 251) says that "the cart has been placed before the horse". Specifically, the technology comes before the pedagogy in a lot of instances.

Discussions at the international forum of educational technology and society, endorsed by the IEEE Learning Technology Task Force, resulted in the following set of general hypotheses or fundamental principles for e-learning, towards a theory of e-learning:

1. E-learning is a means of implementing education that can be applied within varying education models (for example, face to face or distance education) and educational philosophies (for example behaviourism and constructivism);
2. E-learning enables unique forms of education that fits within the existing paradigms of face to face and distance education;
3. Whenever possible the choice of e-learning tools should reflect rather than determine the pedagogy of a course however as a general rule how technology is used is more important than which technology is used;
4. E-learning advances primarily through the successful implementation of pedagogical innovation;
5. E-learning can be used in two major ways: the presentation of education content, and the facilitation of education processes;
6. E-learning tools are best made to operate within a carefully selected and optimally integrated course design model;
7. E-learning tools and techniques should be used only after consideration has been given to online vs offline trade-offs;
8. Effective e-learning practice considers the ways in which end-users will engage with the learning opportunities provided to them;
9. The essential process of education, that is, enabling the learner to achieve planned learning outcomes, does not change when e-learning is applied;
10. Only pedagogical and access advantages will provide a lasting rationale for implementing e-learning approaches.

(Source: Nichols, M. (2003). A theory for eLearning. *Educational Technology & Society*, 6(2), 1-10. Retrieved on November 01, 2005 from http://ifets.ieee.org/periodical/6-2/1.html.

Theory can only be effectively communicated if a common set of terms is used and if their meaning is popularly adhered to. The current survey of the literature has lead to the following list of common terms in e-learning compiled from various sources, including academic and industry sites, as well as online and free glossaries and encyclopaedias.

Towards a common set of terms

Blended learning: "Using ICT [information and communication technologies] as appropriate alongside traditional methods such as discussion or face-to-face teaching." (www.itslifejimbutnotasweknowit.org.uk/lt_glossary.htm)

Community of inquiry: "This kind of learning environment, referred to as a community of inquiry, will provide learners with experience-based learning opportunities to practice and reflect on the learning process. The Boyer Commission explicitly links inquiry to learning communities. The Report states that, "education by inquiry demands collaborative effort." The ideal for a university is participation in a community of inquiry." (http://66.102.7.104/search?q=cache:Ivmi7GczgzcJ:commons.ucalgary.ca/documents/Inquiry_Into_Inquiry.pdf+Community+of+inquiry+definition&hl=en)

Collaborative learning: "Learning through the exchange and sharing of information and opinions among a peer group. Computers excel in mediating collaborative learning for geographically dispersed groups." (www.conferzone.com/resource/glossarycd.html)

Community learning networks: "Community learning networks are community-controlled structures and systems aimed at furthering community development and enhancing the lives of their constituencies by supporting and encouraging life-long learning." (http://www.carleton.ca/cedtap/conference/index2_e.html)

Computer-assisted instruction: "The use of computers to aid in the delivery of instruction in which the system allows for remediation based on answers but not for a change in the underlying program structure." (www.neiu.edu/~dbehrlic/hrd408/glossary.htm)

Constructivist learning: "Constructivism is a philosophy of learning founded on the premise that, by reflecting on our experiences, we construct our own understanding of the world we live in." (http://www.funderstanding.com/constructivism.cfm)

Distance education: "Education that takes place when the instructor and student are separated by space and/or time. The gap between the two can be bridged through the use of technology - such as audio tapes, videoconferencing, satellite broadcasts and online technology - and/or more traditional delivery methods, such as the postal service." (http://oregonone.org/glossary.htm)

Educational technology: "Educational technology is the use of technology to improve teaching and learning." (http://en.wikipedia.org/wiki/Educational_technology)

Flexible learning: "Describes an educational regime providing pathway choices and learner control of the learning process." (http://www.lmuaut.demon.co.uk/trc/edissues/ptgloss.htm}

ICT: "Information and Communication Technology is the term used to describe exciting and innovative ways to provide lifelong learners with global access to information, learning and support. Information systems that are seamlessly linked to learning support systems, that are enjoyable to use and which enable management. Using ICT in partnership with the public and private sectors to generate income and assist regional development."
(http://asp2.wlv.ac.uk/its/website/everyone/its_jargon.htm)

IMS: "IBM's Information Management System (IMS). IMS was developed in 1969 to manage data for NASA's Apollo Moon Landing project. It was later released as the world's first commercially available DBMS. IMS supports the hierarchical data model."
(http://www.orafaq.com/glossary/faqglosi.htm)

Informal learning: "Occurs in everyday life and may not even be recognized as learning by the individual. For example, using a television guide may not be equated by an individual as having learned how to use a table. Related concepts/terms include: incidental learning."
(http://www.nald.ca/adultlearningcourse/glossary.htm)

Interactive learning: "Learning which involves interactions, either with other students, teachers, the environment, or the learning material. In online learning, interactions often, but not always, involve multimedia."
(http://internal.bath.ac.uk/web/cms-wp/glossary.html)

Internet: "An interconnected system of networks that connects computers around the world via the TCP/IP protocol."
(http://www.answers.com/topic/internet)

Learning objects: "Learning objects are small electronic units of educational information that are flexible, reusable, customizable, interoperable, retrievable, facilitate competency-based learning, and increase the value of content."
(http://www.uwex.edu/ics/design/glossary.htm)

Learning object repositories: "Learning Object Repositories (LORs) that are being created house the LOs providing seamless access to a vast store of learning resources such as animations, videos, simulations, educational games, and multimedia texts in the same way that Napster and IPod users have access to music files. LOs are what make this happen."
(http://www.itdl.org/Journal/Sep_04/article02.htm)

Metadata: "Data about data. Metadata describes how and when and by whom a particular set of data was collected, and how the data is formatted. Metadata is essential for understanding information stored in data warehouses and has become increasingly important in XML-based Web applications."
(http://www.electronicscriptorium.com/glossary.html)

Online learning: "A method of learning whereby some of the learning takes place via the Web or similar electronic means (such as an Intranet)."
(http://www.itslifejimbutnotasweknowit.org.uk/lt_glossary.htm)

Semantic web: "Semantic Web is a project that intends to create a universal medium for information exchange by giving meaning (semantics), in a manner understandable by machines, to the content of

documents on the Web. Currently under the direction of its creator, Tim Berners-Lee of the World Wide Web Consortium, the Semantic Web extends the ability of the World Wide Web through the use of standards, markup languages and related processing tools."
(http://en.wikipedia.org/wiki/Semantic_Web)

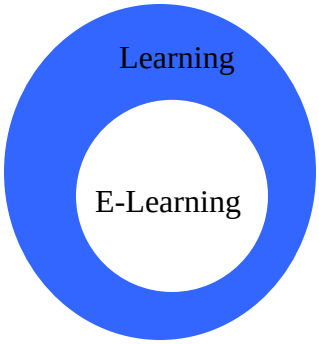
Videoconferencing: "Communication across long distances with video and audio contact that may also include graphics and data exchange. Digital video transmission systems typically consist of camera, codec (coder-decoder), network access equipment, network, and audio system."
(http://www.ohsu.edu/vcs/glossary)

E-learning requirements

The following section describes some of the components of e-learning, some essential and others mandatory. As has been implied directly in this report thus far, a few components and/or conditions must be met to deliver e-learning, some of which will be explored in the following section.

In order to be engaged in e-learning, the involvement of a learner is mandatory, as is an electronic tool for delivering and or receiving content (i.e., computer, TV screen, radio, audio player, etc.). Content is also mandatory as is a creator, such as an instructor, instructional designer, or teacher. These necessary components however, are often combined with what are considered to be optional, yet frequently desirable components. These are as follows: Internet connection, cellular service or other appropriate services and associated infrastructure**.** Other optional elements include dedicated software, such as a learning content management system (LMS).

These components are what makes e-learning possible. Without these elements, and the application of sound pedagogy, e-learning would not exist. Still, e-learning is not a new category of learning but a subcategory of learning, as illustrated below.



Typical elements of e-learning material include:

a) Good instructional design;
b) Methodology similar to what is used in standard training and classes:
    - Introduction or overview ;
    - Outline of lessons and topics ;
    - Objectives (i.e., what you will learn) ;

- Practice, exercises, and/or case studies with instructive feedback;
- Evaluation;
- Evaluation feedback.

Next, the characteristics of adult learners will be explored in terms of their needs, previous knowledge and learning style, as well as various approaches to instruction within the context of online learning.

Characteristics of adult learners

The unique characteristics of adult learners are included in what Knowles (1998) calls "androgogy": Adult learners are capable of self-directed learning (understood as the ways in which learners set goals, look for appropriate resources, decide on learning styles and evaluate their own progress). The ability for learners to engage with learning materials asynchronously is a defining characteristic of online learning. Adults have higher motivation to learn when they can gain new knowledge to help them solve important problems in their life (Huang 2002; Knowles, Holton & Swanson 1998; Garvin cited in Cromley, 2000).

Metacognition plays an important role in adult learning. Metacognition simply means thinking about thinking, or understanding "how learning will be conducted, what learning will occur, and why learning is important." (Knowles et al 1998; Conrad 2002). Adult learners are more capable and more engaged when they learn how to learn. Learning "how to learn" means developing a process for solving new problems as they arise – the development of a skill set that enables the learner to be flexible, reflexive, and able to apply prior knowledge to new contexts and tasks. A metacognitive approach to instruction can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them (Bransford et al. 2003). Brookfield (1995) argues that being skilled at learning will promote lifelong learning, an increasing important concept in the area of adult education. In this way, a metacognitive approach also supports self-directed learning. Adult learners show a preference for problem solving as an educational strategy, specifically involving knowledge that is presented in real-life context (Knowles et al 1998). Again, such an approach to learning makes sense when we recognize that adult learners are motivated to seek new knowledge for the practical purpose of solving problems in their professional or personal lives.

Adult learners come with background knowledge and experience that reinforces their self-identity (Cromley 2000). The learner comes to the learning situation with prior experience that impacts learning in creating individual differences, providing rich resources, creating biases and providing adults' self-identity (Knowles et al 1998). Prior subject knowledge improves the learner's ability to ask the right questions and to evaluate the results of their inquiry (McDonald, Heap and Mason 2001). Pre-existing knowledge affects the learner's ability to remember, reason, problem solve and acquire new knowledge (Cromley 2000; Bransford et al. 2003; Dalgarno 2001).

It is important to recognize that the preconceptions that adult learners bring to the educational situation are not uniformly positive. For example, learners come with preconceptions about how the world works. "If their initial understanding is not engaged, they may fail to grasp the new concepts and information, or learn them for a test only then revert back to their preconceptions outside the classroom" (Bransford et al. 2003). Pre-existing knowledge, in the form of entrenched models and

ineffective learning, problem-solving or coping strategies, also serves as an important barrier to knowledge in adult learners (Garvin in Cromley 2000).

Official definitions of an adult learner

Most jurisdictions (Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta and British Columbia) do not have an official definition of an adult learner. Only four (Prince Edward Island, Quebec, Manitoba and the Northwest Territories) indicate that they do (Organisation for Economic Co-operation and Development, OECD 2002).

Age and time since leaving the regular school system are the main criteria used to define adult learners; but these criteria are applied differently in different jurisdictions, ministries and programs. In some jurisdictions, some individuals who qualify for assistance under special programs, such as income support, are older workers and hence may be considered to be adult learners. While the province of Newfoundland and Labrador does not use a definition of adult learner in association with ongoing program delivery, people 19 and over who have been out of the high school system for one year and require high school equivalency training are encouraged to pursue training through postsecondary institutions rather than through high school.

But as noted by Downes (2005), "one must think about how to reach out to returning adults, who are very different from high school leavers, the 'digital natives'. An important part of the emerging e-learning markets are the digital immigrants."
(Source: Stephen's Web. Summary notes from the Alberta Distance Education and Training Association (ADETA) 2005 Conference, *Interface 2005*. Retrieved on November 30, 2005 from http://www.downes.ca/cgi-bin/page.cgi?post=8

Within the context of adult learning, e-learning must therefore meet the needs of learners with life experiences, who require motivation to learn and who pose unique educational challenges. Ultimately, the role of an effective e-learning system targeting adult learners is to support the learner in her or his development of competence in a particular area of inquiry.

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METHODOLOGY

In order to identify the existing knowledge base in the field of e-learning in Canada, the research team established a list of keywords derived from work in the area, from knowledge of the terminology commonly used in the field and by surveying tables of contents. The research team also consulted with colleagues in the field, combining and supplementing this information with their own personal experience.

A more complete list of terms associated with the field of e-learning can be found in Appendix 1.

ACMC - asynchronous computer mediated communication
Blended education
Computer-assisted assessment
Computer-assisted instruction
CAL – computer assisted learning
Computer adaptive learning & testing
CBE – computer based education, computer-based examination
CBT – computer based training
CD based learning
CMC - computer-mediated communication
Distance education
Distributed learning technologies
Educational technology
E-learning
Electronic assisted learning
Electronic learning
E-learning system
E-learning training
ICT – information communication technology
Instructional system
Learning objects
Lifelong learning
Multimedia learning
Online learning
Online learning communities
Open learning
Paperless education
Web-based instruction

Subsequently, databases relevant to e-learning were consulted. A more complete list of these databases is presented in the latter section of Appendix 1. The strategy for searching databases included narrowing and combining categories, oscillating between databases of literature and original key words and themes, even creating new categories for more comprehensive coverage.

This search strategy was applied to major works in the literature, existing national reports, research centers and organizations, communities of practice, funding bodies and current research agendas.

HISTORY OF E-LEARNING

History of the area

The history of e-learning is short but very active and runs parallel with the history and development of telecommunications technology; that is, technology concerned with communication and transmission of information at a distance. The greatest period of development follows the development of computers, networks and related software. While great and sometimes unrealistic expectations marked the past, the present and future promise tangible results.

Learning and technology have a long and intertwined history. As Garrison and Anderson (2003:32) noted, "It is self evident that the history of technology in education extends back to the clay tablets, slate drawing boards, and handmade paper of pre-Gutenburgh education", an era where instructional information was mostly transmitted by word of mouth. The impact of Gutenberg's Fifteenth Century printing press touched off a social revolution, the repercussions of which are felt to this day.

The history of e-learning occurs in a more recent timeframe however. The development of telecommunications technology and personal computers provides what is considered to be the general timeline of e-learning. The timeframe of greatest development in this area is thus within the last forty years. That said, an early example of what we might define as e-learning occurred in 1909, when Robert E. Peary, arctic explorer, radio-telegraphed: "I found the Pole". Combining the characteristics of communication technology with an explicit educational objective, the knowledge that he has found the North Pole, Peary inadvertently produced an e-learning occurrence for his listeners. But, as electronic equipment has been developed, specifically the micro processor and personal computer, it too has been implicated in learning, culminating in current e-learning. Therefore, the history of e-learning runs parallel with the development of electronic equipment and the use of information and communication technologies.

Modern history

Although early e-learning instances took place in examples such as the one above and in more recent years in examples such as Australia's outback where telephones and other communications technologies were used in distance learning through the 70's and 80's, access to personal computers starting in the 1990's resulted in great interest and enthusiasm in the field of e-learning. As is often the case in new and developing fields, initial interest and investment was perhaps over inflated and overly enthusiastic. This was followed by a more moderate and tempered approach as the field matured.

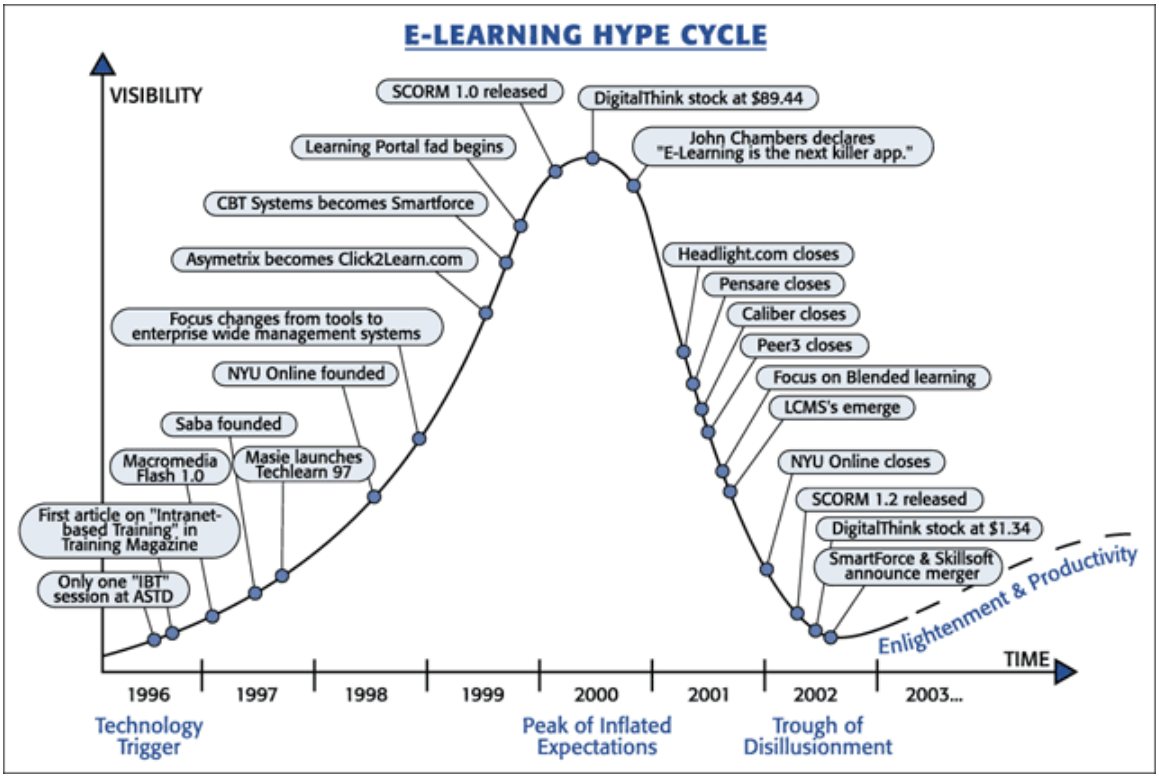
Kevin Kruse, in an article that was first published in September 2002 and updated in 2004, links the history of e-learning with the e-Bubble. The article titled "The State of e-Learning:

Looking at History with the Technology Hype Cycle" comments in detail on the history of e-learning between 1996 and 2003 and provoked many reactions.

The period between 1996 and 2004 is very important for the following reasons:

- it is the most turbulent period of e-learning, with dramatic ups and downs
- technology triggers abound in this period of time
- people's expectations went from ignorance to inflated expectations, to denial and finally to realistic expectations

The Gartner's Technology Hype Cycle has been applied by Kruse in illustrating the history of e-learning and the general trajectory of the field:



Source: Gartner

It seems that the above diagram accurately represents the history of e-learning, as supported by other articles and major sources (i.e., software companies' websites, standardization bodies and public and private websites).

The following dates also mark significant events in the history of the field of e-learning:

- 1996: at ASTD (American Society for Training & Development) conference, a workshop titled Intranet-based training attracted more than 500 participants. The workshop generated articles, speeches and million dollar contracts.
- 1997: big companies like TechLearn and Saba (created by ex-executives from Oracle, the leading database software company in the world, even in 2005) praised e-learning as the future for corporate environment.

- 1998 – 2000: a well known clearinghouse for e-learning specifications and standards was developed called SCORM - Shareable Courseware Object Reference Model Initiative. The Sharable Content Object Reference Model (SCORM) collects interrelated technical specifications and standards based on the work of the AICC, IMS and IEEE to create one unified 'content model'. This enables the reuse of Web-based learning content across multiple environments and products. Unrealistic values for shares of eCommerce companies, e-learning providers and generally technology stock were seen in these years.
- 2001: The golden inflated unrealistic era declines. The business interest for e-learning declines. A web search for SCORM.ca is associated to Media Learning Systems, the provider of e-learning solutions for Human Resources Development Canada. The company has a space dedicated to research in which it was involved. Theoretical research was rich between 1997 and 2000 but no research is posted after 2000, confirming the decline of interest as in Kevin Kruse's article. (The domain www.scorm.com presently belongs to Rustico Software).
- 2002 – 2005: e-learning is no longer considered an independent category somehow in competition with "learning". The substitution of "blended" learning point to the incorporation of e-learning into face-to-face (f-2-f) environments generally, as e-learning becomes more conventional.

The above history is not an academic history of e-learning and does not give human indicators (e.g., extent of participation in e-learning, new skills and competencies required for e-learning, level of access). There is, however, general agreement among researchers, business and e-learning leaders that this history represents the major facts that influenced e-learning. According to Downes (2004) and in the context of this debate around the e-learning hype cycle, e-learning will not regain its strong "market presence" again until an effective consumer and small enterprise model is developed; a model that should do well if it were to place adult learners at the heart of the solution.

Interestingly, Leinonen (2005) offers a synopsis of the history of information and communication technologies in education with a projection of what is still to come; the impact on adult learners having yet to be explored.

1. Late 1970's - early 1980's: programming, drill and practice;
2. Late 1980's - early 1990's: computer based training (CBT) with multimedia;
3. Early 1990's: Internet-based training (IBT);
4. Late 1990's - early 2000: e-Learning;
5. Late 2000: social software plus free and open content.

This fifth phase in the history of computers in education, namely the era of social software and open content, is still to come according to the Leinonen (2005). Other pioneers in the free and open source movements would also agree that this is the next important phase in the evolution of e-learning (Downes, 2002; Keats, 2003; Newman, 1999; Siemens, 2003a, 2003b). The impact on this next phase of e-learning certainly warrants closer examination as for the potential benefits and pitfalls for adult learners.

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KEY THEORIES

The field of e-learning relies on the general theories of learning. Various researchers analyze the field and try to create new theories, but only time will tell if new theories will emerge as key theories in the area.

Behaviorism, cognitivism, and constructivism are the three broad learning theories most often utilized in the creation of instructional environments. These theories, however, were developed at a time when learning had not yet been impacted by technology. Over the last twenty years, technology has reorganized how we live, how we communicate, and how we learn.

Siemens (2004) identified some significant trends in learning through the course of an individual's lifetime, whether as part of a community, a personal network, or in work-related tasks.

- Many learners will move into a variety of different, possibly unrelated fields over the course of their lifetime.
- Informal learning is a significant aspect of our learning experience. Formal education no longer comprises the majority of our learning. Learning now occurs in a variety of ways – through communities of practice, personal networks, and through completion of work-related tasks.
- Learning is a continual process, lasting for a lifetime. Learning and work related activities are no longer separate. In many situations, they are the same.
- Technology is altering (rewiring) our brains. The tools we use define and shape our thinking.
- The organization and the individual are both learning organisms. Increased attention to knowledge management highlights the need for a theory that attempts to explain the link between individual and organizational learning.
- Many of the processes previously handled by learning theories (especially in cognitive information processing) can now be off-loaded to, or supported by, technology.
- Know-how and know-what is being supplemented with know-where (the understanding of where to find knowledge needed).

Driscoll (2000:11) defines learning as "a persisting change in human performance or performance potential … [which] must come about as a result of the learner's experience and interaction with the world". This definition encompasses many of the attributes commonly associated with behaviorism, cognitivism, and constructivism – namely, learning as a lasting changed state (emotional, mental, physiological) brought about as a result of experience and interaction with content or other people.

According to Siemens (2004), learning needs and theories that describe learning principles and processes should be reflective of underlying social environments. How people work and function is altered when new tools are utilized. The field of education has been slow to recognize both the impact of new learning tools and the environmental changes in what it means to learn. Siemens (2004) believes that connectivism, or the integration of principles explored by chaos, network, and complexity and self-organization, holds promise as a

learning theory for the digital age. Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information is continually being acquired. The ability to draw distinctions between important and unimportant information is vital. The ability to recognize when new information alters the landscape based on decisions made yesterday is also critical. Connectivism provides insight into learning skills and tasks needed for learners to flourish in a digital era, and of relevance for adult learners as well.

The No Significant Difference Phenomenon

One particular theory, derived from fundamental theories of learning, is often cited when discussing e-learning. It is the No Significant Difference Phenomenon. This theory was elaborated by Thomas L. Russell, director emeritus of the Office of Instructional Telecommunications at North Carolina State University in Raleigh. Russell used 355 research reports, summaries and papers that document *no significant differences* (NSD) in student outcomes between alternate modes of education delivery.

Many researchers have attempted to create a theory of e-learning as inherent only to e-learning. They were unsuccessful as exclusive theories of e-learning do not exist. In fact, no big name "crossed" the No Significant Difference border – e-learning is a method of delivering learning, and the theories of learning therefore still apply. According to Russell (1999), there is nothing essential about the delivery methods employed in e-learning that distinguish it from other forms of learning and therefore advantage or disadvantage it.

Another line of inquiry into the building of a theory of online learning comes from Dr. Terry Anderson, from Athabasca University. In a recent book, Theory and Practice of Online Learning, Dr. Anderson developed a model of e-learning as a step towards a more comprehensive theory of online learning. In the context of higher education, online learning is described by Anderson as a subset of all distance education, and concerned with providing access to educational experience that is at least more flexible in time and in space than traditional or classroom-based instruction. Online learning theory must acknowledge the change from an era of shortage and restrictions in content to one in which content resources are so large that filtering and reducing choice is as important as providing sufficient content. Education is not only about access to content, however. The greatest affordance of the Web for educational use is the profound and multifaceted increase in communication and interaction capability that it provides (Anderson, 2004)

There is no single, right medium of online learning, or a formulaic specification that dictates the kind of interaction most conducive to learning in all domains with all learners. Teachers and course developers can only respond to learner and curriculum needs by developing a set of online learning activities that are adaptable to diverse student needs. The affordances of emerging technologies can be directed so as to create an environment that is most supportive of "how people learn." For example, affordances of the current web include the capacity to support individualized and community centered learning activities, can provide direct access to vast libraries of content and learning activities organized from a variety of discipline perspective (thus supporting a knowledge centered framework for "how people learn), can provide asynchronous and synchronous, collaborative and individual interaction in many formats (thus supporting a community centered framework for "how people

learn"), can provide multiple time-and place-shifted opportunities for formative and summative assessment by self, peers, and teachers (thus supporting an assessment centered framework for "how people learn").

This theory as such, does not yet constitute a theory of online learning, but it does help to deepen our understanding of this complex educational context; thus contributing to the theories of online learning, predictions, and most importantly improvements in the practice of e-learning.

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SPECIFIC GROUPS AND ACTIVITIES

The next section presents information gleaned from searches of databases, major works in the literature, existing national reports, research centers and organizations, communities of practice, funding bodies and current research agendas. The strategy for identifying specific groups and activities was in keeping with the current methodological approach. Specifically, a list of keywords was derived from work in the area, from knowledge of the terminology and searching relevant databases.

Results include local, regional, national and international groups and activities in the following areas:

- Research institutes and research centers;
- Programs and communities of practice;
- Research and development projects about e-learning conducted by the Canadian military;
- Private e-learning companies;
- Publications, conferences and other resources on e-learning;
- Funding bodies and research themes for e-learning;
- Key people in e-learning.

Research institutes and research centers

The material amassed suggests that the centers of excellence in Canadian e-learning research exist within the universities that promote online innovative and flexible learning, such as Athabasca University and York University. A complete list of Canadian Research Institutes and Research Centers for E-Learning is presented in Appendix 2.

Information was compiled for Canadian research institutes and research centers that included a component of online learning for adults. The national organizations surveyed fill the following role:

- Promoting excellence in the provision of distance education in Canada;
- Raising awareness of technology-based learning;
- Building knowledge about education through research;
    - research and evaluation of instructional technologies in higher education
    - postsecondary education, and lifelong learning
    - supporting adult educators in joining and conducting research
- Providing research and professional development of faculty;
- Providing support to workplace learning and performance practitioners;
- Acting as a catalyst for innovation in the area of technology-enabled learning and skills development;
- Promoting the quality, accessibility, and adaptation of the Canadian Francophone University environment.

Information was compiled for International Research Institutes and Research Centers of relevance for online and adult learning. Our survey of the literature provides information on various international committees for technical and information systems, higher education, as well as associations and consortium related to higher education and the advancement of computing in education. Detailed descriptions and contact information on International initiatives can be found in the latter part of Appendix 2.

The information amassed on the International scene has been synthesized as follows:

- International Forum for Education Technology and Society and technical standards support activities [IEEE Technical Committee on Learning Technology (LTTC), IMS Global Learning Consortium Inc.]
- Providing strategic guidance, advice and opportunities to use Information and Communications Technology [Joint Information Systems Committee (JISC)]
- Supporting members to engage in the study of higher education through research, conferences and publications [Association for the Study of Higher Education (ASHE)
- Non-profit organizations dedicated to the advancement of knowledge, theory, and quality of teaching an learning at all levels with information technology, including researchers, developers, practitioners in schools, colleges, universities, administrators, policy decision-makers, trainers, adult educators, industry, and government [Association for the Advancement of Computing in Education (AACE)]
- Providing educational leaders with high-quality, well-researched, timely information to support institutional decision-making, higher education leaders in making better decisions about information technology (EDUCAUSE's Centre for Applied Research (ECAR)].

The work on both national and international fronts in promoting and supporting distance and online education through research, knowledge building and standards development is unquestionable. However, within the context of adult learning, one must delve even deeper into the issues of accessibility and transparency in order to truly understand the impact if any, on adult learners in various contexts (i.e., information or formal settings, higher education or in the workplace).

Programs, projects, networks, communities and associations related to e-learning

Our survey of the literature has also revealed various programs and projects as well as community-based initiatives such as collaborative and community-based learning networks. The designation of communities of practice in the literature on e-learning, on the other hand, is not always clearly demarcated. Communities of practice are different from other organisational groups such as formal work groups, project teams or informal networks. Within this context, a community of practice can be understood as "involving people jointly developing a shared collection of resources to support work in a specific field"

(Source: van Winkelen (2003). Inter-organizational communities of pratice. *elearningeuropa.info*. Retrieved Nov 10, 2005 from http://www.elearningeuropa.info/index.php?page=doc&doc_id=1483&doclng=1)

Next, information was compiled for Canadian programs, projects, networks, communities of practice, and associations related to e-learning or any of the aforementioned combinations (i.e., online learning, distance education, Internet-based learning, etc.). Highlights for each category are presented as an overview whereas more complete descriptions and contact information can be found in Appendix 3.

Networks

The Community Learning Networks (CLN) initiative (Community Learning Networks (CLN) is administered by the Office of Learning Technologies and encourages the following activities:

- Supports community-based pilot projects that demonstrate innovative and sustainable uses of existing network technologies to upgrade skills and knowledge in Canadian communities;
- Community led approaches encourage lifelong learning and are aimed at furthering social and economic development, supported by Internet-based computer networks.

The activities of the Community Learning Networks initiative align with the needs and requirements of an adult learner population, namely the need to upgrade skills and knowledge within the wider scope of lifelong learning.

Associations

Included here and elaborated in Appendix 3 are associations made up of educators, media producers, researchers, librarians and other professionals who work to facilitate and improve adult learning in all sectors of education and training, distance education, and educational integration of technology:

- The Association for Media and Technology in Education in Canada (AMTEC) is a Pan-Canadian community of educators, media producers, researchers, librarians and other professionals who work to facilitate and improve learning through the application and integration of educational technology;
- The Canadian Society for Training and Development (CSTD) is a professional association for workplace learning and performance practitioners;
- The Alberta Distance Education and Training Association (ADETA) aimed at individuals and corporate members interested in distance education and training in Alberta. This association aims at fostering collaboration, cooperation, and understanding among those involved in education and training in Alberta;
- The E-learning branch in Saskatchewan plays a key role in supporting residents as life-long learners, provides leadership in the development and implementation of a provincial vision and strategic direction for technology enhanced learning in collaboration with sector partners.

On the international front, various associations are also dedicated to adult learning, workplace learning and performance professionals, across countries and organizations, corporations, small and medium sized businesses, government, academia, consulting firms, and suppliers. Theses associations provide a forum for exchange, advocacy, information, and networking opportunities to members of various distance learning communities. A list of these associations is presented below, in no particular order, with further information provided in Appendix 3 under International programs, projects, networks, communities and associations.

- The American Society for Training and Development (ASTD);
- The European Association for Education of Adults (EAEA);
- The Austalasian Society for Computers in Learning in Tertiary Education (ASCILITE);
- The European Distance and E-Learning Networking (EDEN);
- The United States Distance Learning Association (USDLA);
- The Simulation and Advanced Gaming Environment for Learning (SAGE).

Projects

Our survey of the literature has also revealed various national and international projects with universities, industry, government, industry and research communities that promote adult, online and distance learning through research, resources, and opportunities:

The CANARIE project supports the following activities which could potential have an impact on adult learners, either directly or indirectly:

- This project accelerates Canada's advanced Internet development and use by facilitating the widespread adoption of faster, more efficient networks and by enabling the next generation of advanced products, applications and services to run on them;
- This project also acts as a catalyst and partner with governments, industry and the research community to increase overall IT awareness, ensures continuing promotion of Canadian technological excellence and ultimately, fosters long-term productivity and improvement of living standards.

Other research projects related to e-learning are comprised of universities, industry, and government partners that provide research infrastructure and greater access to online learning opportunities. The NETERA Alliance, COHERE Network and EduSource projects are three such examples.

- NETERA Alliance is an Alberta-based, not-for-profit alliance comprised of universities, industry, provincial government, the National Research Council with community members. The alliance coordinates Alberta's ICT research infrastructure, with shared interests of the major research and education organizations in the province.

- The COHERE Network, Canada's Collaboration for Online Higher Education and Research aims to improve access to online learning opportunities and to integrate online learning with research culture and value.

- EduSource Canada, the Canadian Network of Learning Object Repositories (LOR) is a CANARIE funded project that is based on national and international standards, to create a fully bilingual network of linked and interoperable learning object repositories (LORs) across Canada and provide leadership in the ongoing development of the associated tools, systems, protocols and practices that will support such an infrastructure. Primary partners and contributors at the onset of eduSource Canada included Athabasca University, Netera Alliance, New Media Innovation Centre, TéléEducation NB, Télé-Université's LIFEC, University of Waterloo, and the National Research Council Canada's Institute for Information Technology.

On the international front, various projects are dedicated to creating opportunities for lifelong learning, through university and industry networks, publications and workshops, conference, web databases and the promotion of research and innovation. The following are a few examples of projects at the international level with further details provided in Appendix 3.

- The e-Learning Programme, funded by the JISC Committee for Learning and Teaching focuses on four areas: e-learning and pedagogy; technical frameworks for e-learning (ELF); e-learning and innovation and distributed e-learning.
- The European Commission's Leonardo da Vinci programme serves as a laboratory of innovation in the field of lifelong learning and focuses on vocational training, transnational projects to improve the quality of training and improving skills throughout life.
- The EU-Net – European University-Industry Network's main activities are related to setting up a network as a legal body at the European level in the University-Industry sectors, promoting synergy between teaching and research in the relevant areas for industry, research and training cooperation and structuring the university curricula. Their main outputs includes publishing of books, organizing European workshops and the EUI-Net conference, web databases for graduates, available jobs in industry, promotion of research and innovation.
- SOLT – Supporting Online Learning and Teaching, partly funded by Leonardo da Vinci programme aims to develop online learning and teaching guidelines in the form of a pedagogical compendium for those trainers wanting to utilize eLearning, particularly trainers working with small businesses; with their supplemental paper manual freely accessible through the web.

Communities of practice

Search results for communities of practice are intertwined with various other community-based activities by developers, teachers, practitioners, or learners, jointly developing a shared collection of resources to support work in a specific field. A more complete description of

these communities and their activities is presented in Appendix 3 and summarized here below:

Collaborative learning communities include Advanced Broadband Enabled Learning (ABEL), fulfilling the following role:

- To improve student achievement and transform teacher/faculty professional practice through the use of information communications technology;

- To build collaborative learning communities, implementing blended learning environments for classrooms, schools and districts, using interactive web-based learning resources;

- To develop sustainable inter-jurisdictional and inter-institutional collaboration and understanding institutional change.

The needs of practitioner-oriented communities and academic research communities are represented in the following network and research initiatives:

- The Canadian Society For Training and Development (CSTD) e-Learning Network support members who are producers and providers of e-learning products and services, in fostering best practices and expertise in the area of online learning;

- Public Knowledge Project (PKP), a research initiative that seeks to improve the scholarly and public quality of academic research through innovative online environments.

Other community-based initiatives include online educational services for learners through BC Campus or eCampus Alberta:

- BC Campus, an online educational service connecting learners and educators to programs and resources across all BC institutions, including post-secondary application service, course listings, online courses available, collaborative post-secondary programs;

- eCampus Alberta, a consortium providing increased access to quality online courseware; member institutions are creating a collaborative online learning initiative to develop, contribute, and offer its respective online courseware to students.

Military

The Canadian Department of National Defence has its own centers for developing and researching e-learning. This type of research can be characterized as being a full process, from analyzing needs to developing products for delivering e-learning. Projects have been undertaking by the Training Development Cell and Institute for Knowledge, Innovation and Technology with further details provided in Appendix 4.

Private companies

Private sector initiatives address the e-learning needs of corporations and governments. The private sector offers consulting in all phases of the e-learning process, from assessing needs to developing a way of putting into practice the education process. A total of eight private Canadian e-learning companies emerged from our search of the literature, some of which provide e-learning solutions for the public and private sectors, while other companies create Knowledge Services Solutions for IT companies, as well as consultancy and training in the development and management of e-learning and distance education, A detailed list of private companies and their activities in the area of e-learning is presented in Appendix 5.

Publications, conferences and other resources

E-learning is predominant in secondary education, higher education and vocational education and training. Most research materials address the appropriateness of using electronics methods and how to make the education process more efficient.

Our search of the literature found 37 Canadian journals related to e-learning, 18 e-learning conferences, workshops, and symposiums for 2005-2006, as well as 18 other resources (i.e., magazines, blogs, and newsletters). The main journals publishing academic e-learning materials are found in Appendix 6. Conferences, workshops, and symposium are presented in detail in Appendix 7 and non-academic magazines, blogs, and newsletters are listed and described in Appendix 8.

Funding bodies and research themes

The following section outlines the work of Canadian funding bodies (federal and provincial) in supporting learning initiatives for Canadians in online education and training. A summary overview of the nature and scope of the areas being funded is presented below:

- Skills and learning for Canadians
- Investing in people, knowledge, and opportunity
- Infrastructure and strengthening the capacity of Canadian universities, colleges, research hospitals and non-profit institutions related to adult education e-learning
- Promoting lifelong learning culture in Canada
- Workplace learning and human resources development
- Learning partnerships between business, education, government, labour policy makers and community to strengthen public education through research on best practices and policy discussions
- Support for not-for-profit partnerships between industry, university and government such as CANARIE
- Fostering collaboration among educators, institutions, private businesses and all levels of government so that all Canadians can harness the power of technology for learning
- Delivering effective distance education to remote and rural communities

- Aid to research and transfer journals program for Canadian Journals of Learning and Technology, […] of Distance Education, of the Study of Adult Education, and of Higher Education.

Funding for learning initiatives has also supported the following activities which are not clearly of benefit to adult learners but only through extrapolation:

- Learning object repositories networks – LORNET
- Internet electronic library project
- Developing intelligent tutoring software
- Designing multimedia, intelligent tutoring systems, intelligent teaching objects and virtual laboratories
- Virtual laboratory for web-based intelligent tutoring system authoring
- Building computer-based laboratory practices
- Data-structures programming animations
- Classroom learning objects and interactive online tutorials
- Weblogs and Wikis to promote student engagement
- Transferable skills acquisition and retention in blended and wholly online course environments
- An Internet support structure for the continuum and fluid mechanics stream in applied mathematics
- Creating and evaluating on-line instructional activities to teach research methods
- Improving e-learning software with intelligent components.

In parallel, international funding agencies have emphasized the following activities:

- Facilitating policy determination and development of infrastructure
- New environments for learning, teaching and research
- Access to electronic resources
- A world-class network - JANET
- Guidance on institutional change
- Advisory and consultancy services
- Regional support for FE colleges - RSCs
- A dedication to e-learning, and programs and projects that touch on adult e-learning as well (e.g., support for e-Research, eLib = electronic libraries program, personal learning environments, ELP = enhancing learner progression, etc.)
- Funding and building partnerships in public and private organization, offering training programs and research.

Appendix 10 includes a more complete list of funding bodies and details regarding funded research by federal and provincial governments, independent corporations, universities, not-for-profit associations and organizations, councils and committees. This is not an exhaustive inventory, and moreover, not all the research and activities cited here address the needs of adult learners nor highlight important policy or mandates.

Key people

In addition to the research and activities highlighted in previous sections, there are a number of Canadian researchers who have conducted research in the area of e-learning.

The following is list of areas being researched by key players in the field of e-learning:

- accessible content
- courseware design
- digital rights management
- distance education
- education policy
- e-portfolio
- e-presence
- educational content syndication
- e-learning trends and directions
- health
- human capital development
- human-computer interaction
- human performance
- ICT
- learning technologies
- security
- standards
- smart communities
- systems design and training.

The following adult learner populations have been highlighted among the key people in the field of e-learning:

- educators
- school administrators
- workforce
- lifelong learners.

A complete list of key people in Canadian e-learning and details of their background and work in the area can be consulted in Appendix 10.

INDICATORS OF CHANGE

In addition to the resources already mentioned, leading international resources, namely the European e-learning scene, seem to be ahead of Canada in tracing trends and indicators of change in e-learning. Among the resources consulted were the following:

http://elearningeuropa.info
E-journals
Books and printed journals
Standardization initiatives
LMS Providers
Portals
EU-projects

Search results point to indicators that are clearly tied to research and projects objectives in e-learning, indicators that may apply, either directly or indirectly, adult learners.
Indicators are present in the research or projects, but they are not always well defined or obvious.

Qualitative indicators of change in relation to e-leaning practice and use include the following:

- Predominant teacher roles
- Recognition of the change from a *teacher-centered* to a *learner centered* approach – a trend not wholly deriving from new technology use
    - *the role of teachers as collaborators with pupils, teacher and student interaction, teacher as a co-learner*
- The importance of *active learning*

Indicators were also derived from the range of services aimed at impacting the teacher/pupil role and the use of ICT, as follows:

- Attitudes of actors
    - Attitudes towards e-learning repeat the pattern of *technophobia-technophilia* present for decades in the educational system
- Teacher workload
    - Concerns about the workload of using ICT in education seem to be a main obstacle on all levels (pedagogical, technological and organizational)
- Teacher collaboration
    - Collaboration is a key word in e-learning. The online platforms offer teachers the *online-facility for cooperation* with respect to the e-learning course: teachers provide share their experiences and offer new modules and ideas for enhancing the courses
- Assessment
    - Assessment in e-learning needs special attention. In most online learning experiences, types of assessment-workflows are sometimes integrated into the LCMS, including formative and summative assessment schemes. Assignments are submitted via Internet, but in most of the cases the final assessment is face-to-face based. In other cases the knowledge is assessed continually and supplemented by limited formal assessments at group meetings

- Affective and socio-cultural factors that influence learning processes
    - Communicating with learners from other countries through teleconferencing and bulletin/message boards
    - The chance to exchange ideas and information.

(Source Trends in eLearning: Indicators of change. *Delphi Project*, http://www.ub.es/euelearning/delphi/docs-htm/2/index.htm#1 and *Delphi Observatory, European Observatory of Emergent eLearning Practices*, http://delphi.jura.uni-sb.de/indicatorsofchange.htm.

Tracking trends or impact in the field of e-learning also involves both quantitative and qualitative indicators. The following indicators have been gleaned from the literature and provide a quantifiable measure of change:

- Access
    - Percentage of learners who indicated that use of ICT made learning accessible/more accessible to them
- Social inclusion
    - Percentage of social exclusion learner who follow up an e-learning course with other social inclusive experiences (work, other learning, community, activities, etc)
- Quality
    - E-learning course completion rate
    - Percentage of teachers detecting improvement of learning results as consequence of e-learning
    - Percentage of learners detecting improvement of learning as a consequence of e-learning
    - Learner satisfaction
- Cost effectiveness
    - Education and training management reporting increase productiveness as a consequence of e-learning
    - Cost of learning unit (e-learning compared to conventional learning)
- Employability
    - E-learning employment rate in x months after completion of course compared to non e-learning
    - E-learners recognizing contribution of e-learning experience to their employability
- Personal development & citizenship
    - Percentage of e-learners recognizing contribution of e-learning to their community role
    - Percentage of e-teachers recognizing contribution of e-learning to personal development
- ICT & content industry
    - Percentage of e-learning on GDP/on ICT industry/ on service industry
    - Profitability of e-learning industry
    - Demography of e-learning specialized providers
- Organizational change

    - Percentage employers/managers recognizing contribution of e-learning to organizational change
- Internationalization of education and training
    - Number of providers offering e-learning at international level
    - Number of e-learners following e-learning from a country different from that of the providers
    - Number of products resulting from international co-production
- Education and training innovation
    - Percentage of E/T managers recognizing e-learning contribution to E&T innovation
    - Percentage of teachers/trainers recognizing e-learning contribution to E&T innovation
    - Percentage of learners recognizing e-learning contribution to E&T innovation

(Source Trends in eLearning: Indicators of change. *Delphi Project*, http://www.ub.es/euelearning/delphi/docs-htm/2/index.htm#1 and *Delphi Observatory, European Observatory of Emergent eLearning Practices*, http://delphi.jura.uni-sb.de/indicatorsofchange.htm.

Our review of the literature also points to indicators of change that mark outcomes and results in markets, practice and technology trends in the field of e-learning, some of which are included below:

- E-Learning: a smaller growth than predicted
    - slowdown of economic growth and ICT market growth
    - effects of population ageing on e-learning
    - increasing personalization and individualization
    - mergers and acquisitions slowing down
    - school segment slowly, but positively evolving
    - e-Universities: both regional and global with cross-accreditation of subjects between institutions
    - piracy in education
    - threatened monopolies: the case of Open Source Software
    - growing quality awareness
    - reuse, virtual learning environments and m-learning: big promises still underdeveloped
    - competency and outcome based approaches in vocational education and training
    - growing integration of services and of e-learning with face to face learning (blended learning)

- E-learning policies: from infrastructure to skills and quality of learning
    - increasing commitment and coordination with local, national and international partnerships
    - e-Government and the digital divide
    - security and privacy
    - pedagogical innovation
    - flexibility of human capital

- Education in policy agendas
    - increasing awareness, persisting gaps and contradictory trends in investment in education
- Spectacular growth, but divergence in research
- Gaps between research and practice.

Forecasted indicators of change and trends in e-learning have been outlined by Future Learning (EU), a partner in the Kaleidoscope Network of Excellent, which include the following:

- Cross-accreditation of subjects between institutions will be commonplace
- Competency-based approaches within the vocational education and training sector and the outcomes based approach will permeate the development of e-learning materials
    - Facilitating cross-accreditation and quality assurance in learning standards; with integration into higher-order standards in the learning object model.

Indicators for lifelong learning include knowledge that is personally, socio-economically and culturally integrated. Policy must be advanced in order to effect e-learning changes; policy which supports likely future scenarios, including pervasive, virtual delivery of learning materials (Hill, Malone, Markham, Sharma, Sheard, & Young, 2003) in the context of vocational education, and training and technological advancement (Smart, 2002).

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Trends in eLearning: Indicators of change. *Delphi Project*, Retrieved Nov 15, 2005 from http://www.ub.es/euelearning/delphi/docs-htm/2/index.htm#1

Trends in eLearning, *Delphi Observatory, European Observatory of Emergent eLearning Practices*, Retrieved Nov 16, 2005 from http://delphi.jura.uni-sb.de/indicatorsofchange.htm.

CONCLUSION

Technology is a force that makes possible many changes that occur in our every day lives, both in and outside the workplace. Along with its challenges, technology has generally facilitated access to educational resources and materials, to communication and sharing in today's knowledge economy.

With the rapid rise in prominence of the Internet during the 1990s, most industrialized nations developed policies and programs promoting public access to the Internet in order to ameliorate the emerging 'digital divide' that threatened to undermine social solidarity. In Canada, the issue of access was pursued most visibly through the federal 'Connecting Canadians' agenda, led by Industry Canada. Its goal was to make Canada the most 'connected nation on Earth' notably through its SchoolNet, Community Access (CAP), and LibraryNet programs. The goal was to make Canada the most connected nation in the world by the year 2000, with a strategy to make Canada the world leader in developing and using an advanced information infrastructure to achieve our social and economic goals in the knowledge economy.

E-learning is a direct product of technological advancement, of methods and processes that enable electronic media to deliver education and training. In the present Canadian use of the term, e-learning includes computer-based learning, computer-based education, web-based/online learning, virtual classrooms and educational applications of information-communication technologies (ICT). Canada is a country with particular demographic and geographic characteristics that makes e-learning an attractive solution. Canada covers a vast territory and has a relatively low population density. Isolated communities, including adult learners, can benefit from experienced instructors living at another location thousands of kilometres away, through e-learning. At the same time, Canada has the expertise and financial resources to implement the most modern technologies supporting e-learning but to what extent do they support adult learners? Findings from this report point to an abundance of resources, programs, networks, and projects that target online learning and adult learning but there is a lack of coordination and communication therein.

Authors such as Warshauer (cited in Shade & Dechief, 2005) argue the "the digital divide framework" overemphasizes the importance of connectivity to the exclusion of other factors that allow people to use information and communication technologies (ICTs) for "meaningful ends", while Hargittai (cited in Shade & Dechief, 2005) maintains that, "merely offering people a network-connected machine will not ensure that they can use the medium to meet their needs because they may not be able to maximally take advantage of all that the Web has to offer." Again, this report points to a plethora of accessible resources but the linkage back to the various adult learning programs in Canada is not always obvious, and therefore may not be exploited by those who could benefit the most.

Within the context of e-learning and more specifically in adult learning, learner needs have been a driving force. In today's new economy characterized by industrial change, globalization, increased intensive competition, knowledge sharing and transfer and information technology revolution, traditional classroom education or training does not always satisfy all the needs of the new world of lifelong learning. The use of information and

communication for learning has the potential for providing new opportunities for learning and continual training, in line with the need for lifelong learning and social cohesion. Education must align itself with the skills learners need in order to access further learning. The return to learning, either formal or informal, should never be perceived as the last resort and initial education must not be seen as an end in itself. Learning should be a continuous process throughout one's life.

A continuing issue for e-learning and adult learners in particular, is adequate dissemination of information and anticipation of needs. All means should be used to adequately promote access to learning. Available information should be widely circulated in schools, the workplace, temp agencies, city halls, social services, the media, public and private bodies.

Adult Learner's week was launched in the United Kingdom in 1992 and was intended to provide as much information as possible on the range of courses that are available (see The National Institute of Adult Continuing Education, NIACE at http://www.niace.org.uk/ALW/2006/Default.htm.

Adult Learner's week is now an annual event in about thirty countries. Canada joined the International Adult Learners' Week through the Canadian Commission for UNESCO and its government and non-government partners. This represents a concerted effort to raise the profile and promote adult learning throughout life among the general public and various learning environments (http://www.adultlearning.unesco.ca/2002/ca_join.php).

In a similar report on the current state of the field for e-learning by the Australian National Training Authority (Eklund, Kay, & Lynch, 2003) the following issues and trends were identified:

> *Early initiatives and expectations have been largely driven by a market that has been too keen to adopt technologies for their own sake, an acceptance of the hype surrounding the potential benefits and the need for organizations to be seen as technologically progressive to gain market advantage. However, for many the experimental phase has come at a high cost and small return, as the failure of e-learning to provide multiple examples of success, both in student learning and efficiency of delivery, has been evident.*

Canadian research does not show similar failures in e-learning. In general, Canada has taken a more tempered approach towards e-learning and has not rushed to adopt widespread applications of e-learning across domains and institutions. Instead, Canada has led the field through its research and development efforts. However, there are certain gaps that need to be addressed as will be presented in the next section.

Generalizations and gaps

As highlighted in this report, e-learning development has been driven by personal and collective needs, needs that have lead to the creation of new technical innovations, new business environments and learning environments.

From the evolution of e-learning (see the e-learning hype cycle) and major issues and trends reported by specific groups in e-learning the following generalizations were derived:

- E-learning is now in a phase of consolidation and redefining (away from the hype);
- There is a movement from e-learning towards "blended learning" with an accent on the learning process not the technology;
- Attention is moving from the technology and the infrastructure, towards the practice, the pedagogy, the content;
- Good implementation of e-learning generally reduces costs and personalizes the learning process while bad implementations usually alienate learners;
- Issues in e-learning are now focused on context, effectiveness, efficiency, standards and quality;
- Partnerships are a key characteristic of contemporary e-learning;
- Governments play an important role in influencing the behaviour of institutions by means of strategic funding/policy.

As a leader in the field, Canada is thus well positioned to help address these issues and direct the future of the field of e-learning and its impact on adult learners. However, as revealed in the current report, the lack of coordination in adult learning programs in Canada will have to be addressed (see the OECD 2002 report). There are many initiatives between federal and provincial governments, as well as between the public and private sectors but there are also gaps in communication and coordination between the various stakeholders.

Currently, the absence of a national forum for adult learning is a major barrier to developing adult learning initiatives that are coherent, consistent, effective, and universally available. The Adult Learning Knowledge Centre was created to address these gaps and to become a national reference point and key resource for Canada's adult learning activities. Together and through the coordination of activities by the Canadian Learning Institute and Adult Learning Knowledge Center Working Groups, namely the Knowledge Exchange and Community Connections Working Groups, these gaps may be addressed in the near future.

The Canadian adult learning knowledge centres, institutions, researchers, at all levels must work towards creating, fostering, and enhancing regional and national networks in research-based and practice-based fields of adult learning in Canada, in order to provide multi-levelled forums for discussing and advancing adult learning. The Adult Learning Knowledge Center working groups have identified the following priorities in their action plan for adult learning:

- A commitment to inclusion, diversity, and accessibility;
- Develop relationships among diverse regional and national groups in the adult learning communities, including researchers, practitioners, adult learners, and other stakeholders;
- Identify practical and creative approaches in order to develop partnerships across potential barriers of language, geography, disability, sector, and area of interest, as well as other potential logistical and conceptual barriers;
- Identify ways to create transparency between adult learners 'out there' and a 'go-to' place for knowledge and leadership on adult learning issues and activities;
- A need more network building and community outreach.

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Promising lines of inquiry

The following represents possible area of inquiry gleaned from the current review of the field of e-learning and adult learning, or else combine observations and interests of members of the research team.

1. Replace e-learning as the subject of research with the study of the integration of electronic aspects into the learning process

According to the no significant difference phenomenon theory, it is not the method of education but the process of education itself that is important, and how successfully its components are integrated towards the learning outcomes. E-learning looks very much like the last outpost of the e-bubble, in which technology was praised as the solution to all learning problems. eCommerce failed to replace "commerce" and was finally recognized as a component of commerce; eTrading did not replace trading; the same can be said of e-learning, by fully recognizing it as a sub-category and not as an independent category. Further research about e-learning/learning and its relation with its e-relations (i.e., e-commerce, e-trading) would be interesting and profitable.

2. Human impact of electronic methods of learning

Few studies touched upon the choice or not to participate in e-learning instead of traditional learning. Corporations and governments are promoting e-learning but the impact on student retention and student satisfaction has not been extensively explored.

3. Research the effectiveness of past national e-learning campaigns

Between 1995 and 2000 the federal and provincial governments spent billions on e-learning. Further research on the impact of online programs and initiative in continuing and adult education, in accessing further learning would also be a profitable line of inquiry.

4. E-learning influence on the social structure and workforce

Traditional learning and electronic based learning coexist in adult education. It would be profitable to explore the social structure underlying the e-learner population through longitudinal studies and to determine the true impact on the workforce and Canadian society.

5. E-learning and the challenge for teachers

Much of e-learning was meant to be self-paced learning. Further researching the impact of e-learning on teachers, for example, on their motivation, attitudes and workload would be worthwhile.

6. E-learning and the "Knowledge Worker"

An interesting and profitable line of inquiry points to empirical research about the structure of jobs and skills in Canada (i.e., whether jobs requiring high-tech skills have increased in number, if new requirements are being added to existing job descriptions, etc.). It would be interesting to research if the "knowledge workers" have actually increased in number in the developing world - due to the export of manufacturing, technical support and business management jobs.

7. New competences – from "E-Learning" to "E-competences"

The concept of e-competencies is being introduced at the upcoming European Distance and E-Learning Network (EDEN) 2006 Annual Conference in Vienna, 14-17, June 2006. (Source: E-Competences for life, employment and innovation. Retrieved on November 15, 2005 from http://www.eden-online.org/eden.php?menuId=279). E-learning is the major enabling factor for the efficient involvement in the new competence development process, contributing also to the mainstreaming of innovation. E-competences are used in a much wider sense than the term 'digital literacy' and as a link between education, training and business. The new competency system is strongly rooted in and related to e-learning, using collaborative and knowledge management tools, in the increasingly integrated contexts of education – training – work – home. The concept of e-competences within the context of adult learning warrants further investigation.

Appendix 1: Keywords and databases searched

Keywords

ACMC - asynchronous computer mediated communication
Blended education
CAA = Computer-assisted assessment
Computer-assisted instruction
CAL – computer assisted learning
Computer adaptive learning & testing
CBE – computer based education
computer-based examination
CBT – computer based training
CD based learning
CMC computer-mediated communication
Distance education
Distributed learning technologies
Computer-assisted instruction.
Computer network resources
e-Book
Educational technology
e-Learning
Electronic assisted learning
Electronic learning
e-Learning system
e-Learning training
ICT – information communication technology
Instructional system
Interactive learning
Internet-based instruction
Interned education
Knowledge management
Knowledge-based economy
Learning community
Learning computer managed system
Learning design specification
Learning objects
Lifelong learning
Multimedia learning
Online discussions
Online learning
Online learning communities
Open learning
Paperless education
SAGE - Simulation and Advanced Gaming Environment for Learning
SCORM - Sharable Content Object Reference Model
semantic web

web-based instruction
webCT online graduate course
World Wide Web

List of databases searched

- AACE Digital Library
- ACM (Association of Computing Machinery)
- Amazon
- AMICUS
- Canadian Business and Current Affairs
- CIST Signal
- CISTI Source
- Current Contents
- Education: A SAGE Full-Text Collection
- EI COMpendex
- ERIC (Ebscohost)
- FindArticles
- IEEE Xplore Institute of Electrical and Electronics Engineers
- Industry Canada - Strategies
- Ingenta
- INSPEC
- National Library of Canada (AMICUS)
- National Library of Scotland
- Online Catalogs and Databases searched with RefWorks (aprox. 300 connections) and EndNote 9 (561 connections)
- PhdData (universal index of doctoral dissertations in progress)
- ProQuest Digital Dissertations
- PsycInfo
- Science Direct
- Sociological Abstracts
- Springer Link
- Theses Canada
- University of Victoria Libraries Catalog
- Web of Science

Appendix 2: Research Institutes and Research Centers

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
Canadian Association for Distance Education (CADE)	CADE is a national organization of professionals committed to excellence in the provision of distance education in Canada.	http://www.cade-aced.ca Suite 204, 260 Dalhousie Street Ottawa, Ontario Canada K1N 7E4 (tel) 613.241.0018 (fax) 613.241.0019
Canadian Education Association (CEA)	CEA is a bilingual, federally incorporated non-profit organization engaged in the effort to build knowledge about education through research.	http://www.cea-ace.ca Canadian Education Association 317 Adelaide Street West, Suite 300 Toronto, ON M5V 1P9 T: (416) 591-6300 F: (416) 591-5345 Email: info@cea-ace.ca
Centre for Higher Education Research and Development at the University of Manitoba (CHERD)	CHERD is an institute dedicated to research and the professional development of faculty and administration in post-secondary education. CHERD was established in 1987 as a centre for graduate preparation, research and publication in higher education and offers regional, national and international courses, seminars, symposia and publications.	http://www.umanitoba.ca/centres/cherd/ The University of Manitoba 220 Sinnott Building, 70 Dysart Road Winnipeg, MB, Canada R3T 2N2 Phone (204) 474-8309 Fax (204) 474-7607 cherd@umanitoba.ca
Canadian Society for Training and Development (CSTD)	CSTD is a professional association for workplace learning and performance practitioners.	http://www.cstd.ca/ 720 Spadina Avenue, Suite 315 Toronto, Ontario M5S 2T9 Tel: (416) 367-5900, 1-866-257-4275 Fax: (416) 367-1642 E-mail info@cstd.ca
Office of Learning Technologies (OLT); Operated by HRSDC	The OLT works to raise awareness of the opportunities, challenges and benefits of technology-based learning and to act as a catalyst for innovation in the area of technology-enabled learning and skills development.	http://www.hrsdc.gc.ca/en/hip/lld/olt/01_index.shtml

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
Association Canadienne d'education des adultes des Universites de langue Francaise (ACDEAULF)	ACDEAULF's mission is to promote the quality, accessibility and adaptation of the Canadian Francophone University environment and to offer to adult educators a place to join and conduct research. It was founded in 1965.	http://www.acdeaulf.ca/ 511 Carrière Trois-Rivières (Québec) G8T 7Y7 Téléphone (819) 371-1719 - Télécopieur (819) 371-1265 Courriel:info@acdeaulf.ca
Institute for Research on Learning Technologies at York University (IRLT)	Originally established in 1987 within the Faculty of Education as the Centre for the Study of Computers in Education, the Institute became a university-based research unit in June 2001 and was re-named. Although the Institute's mandate is to conduct research in public schools, postsecondary education and lifelong learning, until recently most members focused their research on technology in schools. Over the past several years, however, members have increasingly directed their research attention to the evaluation of instructional technologies in higher education and beyond.	http://www.yorku.ca/irlt/ 1029 TEL Building, York University, 4700 Keele Street, Toronto, Ontario, M3J 1P3 Phone: (416) 736-5019
National Research Council Canada (NRC) IIT- Institute for Information Technology	NRC is the Government of Canada's premier organization for research and development, since 1916. NRC-IIT creates and commercializes software and systems technology to help Canada prosper in the knowledge economy. Through its research, the dissemination of its findings and innovative business services, including licensing opportunities, R&D support, business mentoring and strategic partnerships, NRC-IIT provides a competitive advantage to myriad industry sectors, from health care and manufacturing, to transportation and entertainment. NRC-IIT's research focuses on three strategic directions: Knowledge from Data, People-Oriented Systems, and e-Business.	http://www.nrc-cnrc.gc.ca/ Phone: (613) 993-9101 or toll-free 1-877-NRC-CNRC (1-877-672-2672) Fax: (613) 952-9907 info@nrc-cnrc.gc.ca
Centre for	The Centre for Education Technology	http://www.educ.sfu.ca/ce

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
Educational Technology, Simon Fraser University (CET)	(CET) at Simon Fraser University provides an open and supportive environment designed to encourage the evaluation and use of educational technologies and to enhance learning and teaching. In collaboration with the Faculty of Education and using a consultative model, they offer instruction, training and support in the use of traditional and emerging technologies specifically as they relate to educational issues. The centre also provides a broad range of consulting services and technical support for both the local and international education communities.	t Ph: 604-291-4129
Learning and Instructional Development Centre, Simon Fraser University (LIDC)	The mission of the e-learning and Instructional Development Centre (LIDC) is to help create an enriched academic environment at Simon Fraser University. This is accomplished by supporting and promoting effective teaching, stimulating and conducting research and scholarly activity, assisting in the integration of instructional technologies, and providing media services and classroom support to the university community.	http://www.sfu.ca/lidc/ Email: lidc@sfu.ca Phone: 604.291.3910 Fax: 604.291.4900 Mailing Address: Room7560 - Education Building Simon Fraser University 8888 University Drive Burnaby, BC V5A 1S6
LICEF Research Centre	LICEF groups together approximately sixty individuals, including researchers, research assistants, analysts, programmers, technicians, and students in the fields of cognitive informatics, telecommunications, computational linguistics, cognitive psychology, education and communication. This team contributes to the development of methods for telelearning systems.	http://www.licef.teluq.uquebec.ca/ Licef research center, Télé-Université 4750, avenue Henri-Julien Bureau 100 Montreal (QC) H2T 3E4 Phone : 514.843.2015 Fax : 514.843.2160 licef@teluq.uquebec.ca
Centre for Learning and Teaching through Technology at University of Waterloo,	LT3 is a research and development team dedicated to the highest standards of scholarly research in the pursuit of better teaching and learning methods. They work closely with faculty, instructors and staff at the University of Waterloo to	http://lt3.uwaterloo.ca/index.html Dana Porter Library, Room 328 University of Waterloo ON, Canada

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
Ontario (LT3)	ensure a better and more effective learning environment is constantly evolving.	N2L 3G1 519 888-4567, extension 3353; E-mail: centre@lt3.uwaterloo.ca
Learn NB	In early 2004, LearnNB emerged from the NB eLearning Forum as a bilingual umbrella organization to promote the development of e-learning and knowledge technologies. Objectives are: collaboration among learning industry enterprises and institutions in New Brunswick; allied export marketing; career growth and networking for regional workplace learning and performance practitioners; and an online community of practice for e-learning professionals, wherever they may be.	http://www.learnnb.ca/ Contact Darcie Cameron, Office Administrator Mailing Address: LearnNB 390 King St, Suite 300 Fredericton, NB E3B 1E3 E-mail: info@LearnNB.ca Phone: (506) 474.1372 Fax: (506) 460.8084
Centre of Excellence for Surgical Education (CESE)	Jointly organized by UBC and Vancouver Hospital and Health Sciences Centre (VHHSC), CESE is a state-of-the-art, multi-disciplinary centre providing medical education and research through such applications as telemedicine, direct multimedia web casting systems, video conferencing and delivery of medical services through the Internet.	http://www.surgicalexcellence.org Mailing Address: 3602-910 W. 10th Avenue Vancouver, BC V6Z 4E3 Fax: 604-875-5832 E-mail
Centre for Managing and Planning Learning Environments UBC (MAPLE)	MAPLE is an international centre that offers practical research perspectives, strategies and professional advice for managing and planning learning environments in higher education.	http://www.maple.ubc.ca Ph.: 604.822.9680 Mark Bullen – Ph. 604.822.5079 The University of British Columbia 1170 - 2329 West Mall Vancouver, BC Canada V6T 1Z4
Knowledge Media Design Institute (KMDI)	KMDI is an institute in the School of Graduate Studies at University of Toronto and is dedicated to research and graduate education in all aspects of knowledge media design (KMD).	http://www.kmdi.utoronto.ca/?docID=Documents/2/2.html&db=kmdi Bahen Centre for Information Technology 40 St. George St., 7th Floor,

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
		Toronto M5S 2E4 info@kmdi.utoronto.ca
International Research Institutes and Research Centres for E-Learning		
IEEE Technical Committee on Learning Technology (LTTC)	LTTC contributes to research in the area through their two major subgroups: International Forum for Education Technology & Society http://ifets.ieee.org/ and Technical Standards Support Activities http://lttf.ieee.org/techstds.htm	http://lttf.ieee.org For questions re LTTC, please contact Dr Kinshuk, Chair, LTTC. Phone: (+64) 6 350 5799 Ext 2090
The Joint Information Systems Committee (JISC)	The Joint Information Systems Committee (JISC) supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration. JISC is funded by all the UK post-16 and higher education funding councils.	http://www.jisc.ac.uk/
Association for the Study of Higher Education (ASHE)	The ASHE promotes collaboration among its members and others engaged in the study of higher education through research, conferences, and publications, including its highly regarded journal, *The Review of Higher Education*. ASHE is headquartered at the Michigan State University	http://www.ashe.ws/index.htm ASHE Michigan State University 424 Erickson Hall East Lansing, MI 48824 Phone: (517) 432-8805 Fax: (517) 432-8806
Association for the Advancement of Computing in Education (AACE)	The Association, founded in 1981, is an international, educational and professional not-for profit organization dedicated to the advancement of the knowledge, theory and quality of learning and teaching at all levels with information technology. This is accomplished through the encouragement of scholarly inquiry related to information technology in education and the dissemination of research results and their applications through publications, conferences, societies and chapters and inter-organizational projects. AACE's membership includes researchers, developers, and practitioners in schools,	http://www.aace.org Contact: info@aace.org

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
	colleges, and universities; administrators, policy decision-makers, trainers, adult educators, and other specialists in education, industry and government with an interest in advancing knowledge and learning with information technology in education.	
Technology Enhanced Learning and Research at Ohio State University (TELR)	TELR champions the enhancement of teaching and learning through the thoughtful integration of innovative instructional technologies, strategies and research. TELR encourages exploration and innovation in the use of instructional technologies, provides guidance and solutions in visual and instructional design, expands instructional technology research and builds partnerships locally and globally.	http://telr.osu.edu Phone: 614.688.5875 Fax: 614.292.7081 Email: telr@osu.edu Mailing Address: 1971 Neil Avenue Columbus, OH 43210
EDUCAUSE's Centre for Applied Research (ECAR)	ECAR provides timely research and analysis to help higher education leaders make better decisions about information technology. ECAR assembles leading scholars, practitioners, researchers, and analysts to focus on issues of critical importance to higher education, many of which carry increasingly complicated and consequential implications. ECAR provides educational leaders with high-quality, well-researched and current information to support institutional decision-making.	http://www.educause.edu/content.asp?SECTION_ID=4&bhcp=1 4772 Walnut Street, Suite 206 Boulder, CO 80301-2538 Tel: 303-449-4430 Fax: 303-440-0461
IMS Global Learning Consortium Inc.	IMS is a non-profit organization, started in 1997, that includes more than 50 Contributing Members and affiliates. These members come from every sector of the global e-learning community. They include hardware and software vendors, educational institutions, publishers, government agencies, systems integrators, multimedia content providers and other consortia. IMS develops and promotes the adoption of open technical specifications for interoperable learning technology. Several IMS specifications have become worldwide de facto	http://www.imsglobal.org/ Mailing Address: IMS 35 Corporate Drive, 4th Floor Burlington, MA 01803 USA

Canadian Research Institutes and Research Centres for E-Learning		
Name	**Description**	**Contact**
	standards for delivering learning products and services. IMS specifications and related publications are made available to the public at no charge.	
E-Novate Knowledge Span	e-Novate Knowledge Span is a European business recognised for its innovation, knowledge networks and quality of services in project development, management, dissemination and evaluation related to training and e-learning.	http://www.enovateknowledgespan.org/ e-Novate Consultancy Ltd t/a e-Novate Knowledge Span PO Box 328 Margate Kent CT8 8GN United Kingdom
VIRTUS The Institute for the new Learning and Learning methods	VIRTUS works in the production of e-learning content, production of topic-specific and problem oriented Web-based content, coordination of production groups for eContent, coordination of virtual groups, coordination of networks to the unification of basic knowledge and technologies from different disciplines. It also seeks to innovate system approaches in line with standard usage for net-based learning, from the creation of education networks, to the testing of organizational structures for certain learning with flexible operational readiness level phases, certain on-line learning and cared for on-line learning (blended learning), organization and offers workshops and conferences.	http://www.virtus-mv.de Rostock Friedrich-Barnewitz-Str. 8 18119 Rostock-Warnemünde Tel: (03 81) 51 96 48 50 Fax: (03 81) 51 96 48 51 info@virtus-mv.de

Appendix 3: Programs, Projects, Networks, Communities of Practice, and Associations

Canadian Programs, Projects, Networks, Communities of Practice, and Associations		
Name	**Description**	**Contact**
Networks		
Community Learning Networks (CLN)	The **Community Learning Networks (CLN) initiative** is administered by the Office of Learning Technologies (OLT). CLN supports community-based pilot projects that demonstrate innovative and sustainable uses of existing network technologies to upgrade skills and knowledge in Canadian communities. The costs of these community initiatives are shared, with OLT funding up to 60% of costs and the project's sponsor and their partners responsible for 40%. CLNs are community-led approaches to encouraging lifelong learning, aimed at furthering social and economic development and supported by Internet-based computer networks.	http://www.hrsdc.gc.ca/en/gateways/nav/top_nav/program/olt.shtml Human Resources and Skills Development Canada Place du Portage 140, Portage Street, Phase IV Gatineau, Quebec K1A 0J9
CANARIE Inc.	**CANARIE Inc**. is a not-for-profit corporation supported by its members, project partners and the Federal Government. CANARIE's mission is to accelerate Canada's advanced Internet development and use by facilitating the widespread adoption of faster, more efficient networks and by enabling the next generation of advanced products, applications and services to run on them. Headquartered in Ottawa, Ontario, CANARIE employs 26 full-time staff dedicated to the research and implementation of advanced networks and applications that will stimulate economic growth and increase Canada's international competitiveness. CANARIE also acts as a catalyst and partner with governments, industry and the research community to increase overall IT awareness, ensures continuing promotion of Canadian technological excellence and ultimately, fosters long-term productivity and improvement of living standards. CANARIE's members: http://www.canarie.ca/members/index.html	http://www.canarie.ca CANARIE Inc. 110 O'Connor St. Ottawa, Ontario K1P 5M9 Tel: (613) 943-5454 info@canarie.ca

Canadian Programs, Projects, Networks, Communities of Practice, and Associations		
Name	**Description**	**Contact**
Networks		
The NETERA Alliance	NETERA Alliance is an Alberta-based, not-for-profit alliance comprised of universities, industry, provincial government., the National Research Council, community members, ,etc.. NETERA coordinates Alberta's ICT research infrastructure, in the shared interests of the major research and education organizations in the province.	http://www.netera.ca/ info@netera.ca Calgary Office Biosciences 530 University of Calgary 2500 University Dr. N.W. Calgary, AB T2N 1N4 Tel: 403-220-6778 Fax: 403-282-0838
The COHERE Network	COHERE, Canada's Collaboration for Online Higher Education and Research, is an alliance of leading Canadian research universities working together to improve access to online learning opportunities and to integrate online learning with our research culture and values.	http://www.cohere.ca info@cohere.ca
CSTD's e-Learning Network	The purpose of the e-Learning Network is to support CSTD members who are producers and providers of e-learning products and services. Members of the Network share information and develop their knowledge and skills through various activities, both online and face to face. The Network helps its members foster best practices and expertise in the area of online learning.	http://www.cstd.ca info@cstd.ca CSTD 720 Spadina Avenue, Suite 315 Toronto, Ontario M5S 2T9 Tel: (416) 367-5900, 1-866-257-4275 Fax: (416) 367-1642
Advanced Broadband Enabled Learning (ABEL)	Winner of Learning Partnership's 2005 National Technology Innovation, ABEL seeks to improve student achievement and transform teacher/faculty professional practice through the use of information communications technology, through building collaborative learning communities, implementing blended learning environments for classrooms, schools and districts, using interactive web-based learning resources, developing sustainable inter-jurisdictional and inter-institutional collaboration and understanding institutional change.	http://www.abelearn.ca/ Janet Murphy, Program Manager Tel: (416) 736-2100 ext. 20020 Fax: (416) 650-8271 Janetm@yorku.ca

Canadian Programs, Projects, Networks, Communities of Practice, and Associations		
Name	**Description**	**Contact**
Networks		
EduSource Canada – the Canadian Network of Learning Object Repositories (LOR)	eduSource Canada was a project, based on national and international standards, to create a fully bilingual network of linked and interoperable learning object repositories (LORs) across Canada. The first phase of the project was to develop an inventory of development tools, systems, protocols and practices. Next, the project defined the components of the framework, the web services that tied them together and the protocols necessary to allow other institutions to enter into that framework.	http://www.edusource.ca Douglas Mcleod, Director of Projects (403) 609-3642 (403) 282-0838 fax dmacleod@netera.ca
Public Knowledge Project (PKP)	The Public Knowledge Project is a federally funded research initiative located at the University of British Columbia and Simon Fraser University on the west coast of Canada. It seeks to improve the scholarly and public quality of academic research through innovative online environments.	http://www.pkp.ubc.ca Dr. John Willinsky Project Director Public Knowledge Project, Department of Language and Literacy Education The University of British Columbia 2125 Main Mall, Vancouver, BC, CANADA V6T 1Z4 Ph: (604) 822-3950 Fax: (604) 822-3154
BC Campus	BC Campus is an online educational service connecting learners and educators to programs and resources across all BC institutions. The following provincial online programs have been moved under the BCCampus banner: PASBC (Post-Secondary Application Service of BC); BCCourses.com (listing of online courses available from BC institutions); E-merge (collaborative post-secondary programs).	http://www.bccampus.ca 2nd Floor, 555 Seymour Street Vancouver, BC V6B 3H6
BC Campus Online Learner Community	This is an online virtual campus created by BCCampus for students from post-secondary institutions all over BC. Here students can enter Calendar Entries, lead discussions, post images, list websites, share resources and use the meeting and chat rooms.	http://learnercommunity.bccampus.ca/learner

Canadian Programs, Projects, Networks, Communities of Practice, and Associations		
Name	**Description**	**Contact**
Networks		
eCampus Alberta	eCampusAlberta is a consortium of fifteen colleges and technical institutes established to facilitate increased access to high quality online learning opportunities. The consortium is developing a collaborative online learning initiative that currently spans across the province of Alberta. Each member institution develops, contributes and offers its respective online courseware, but also offers other member institutions' courseware. Thus, learners are able to access online courseware in a timely and cost-effective manner. To take advantage of eCampusAlberta, students are required to register for courses and programs through one of the Member Institutes.	http://www.ecampusalberta.ca Tricia Donovan, Ph. D. Executive Director eCampusAlberta Phone: 403- 210-5638 Email: tricia.donovan@eCampusalberta.ca
Association for Media and Technology in Education in Canada (AMTEC)	AMTEC is a Pan-Canadian community of educators, media producers, researchers, librarians and other professional staff who work to facilitate and improve learning, in all sectors of education, through the appropriate application and integration of educational technology.	http://www.amtec.ca AMTEC 3-1750 The Queensway, Suite 1318 Etobicoke, Ontario, Canada M9C 5H5
Alberta Distance Education and Training Association (ADETA)	The Alberta Distance Education and Training Association is a voluntary, non-profit Association made up of individuals and corporate members interested in distance education and training in Alberta. The purpose of the Association is to actively foster collaboration, cooperation, and understanding among those involved with education and training in Alberta. They produce 'The Distance' newsletter 3 times a year.	http://www.athabascau.ca/html/collab/adeta/index.htm

Canadian Programs, Projects, Networks, Communities of Practice, and Associations		
Name	**Description**	**Contact**
Networks		
Saskatchewan Learning E-learning Branch	Effective June 1, 2003, the E-Learning Branch was created, bringing together Learning Technology and the Saskatchewan Government Correspondence School from the former Department of Education, Technology Enhanced Learning from the former Post-Secondary Education and the televised distance education program from the Saskatchewan Communications Network. The purpose for creation of the E-Learning Branch is to play a key role in supporting government's sector-wide vision of Saskatchewan's residents as life-long learners. One of the key functions of the Branch is to provide leadership in the development and implementation of a provincial vision and strategic direction for technology enhanced learning in collaboration with sector partners. Within the context of the strategic plan for education, training and library services strengthening and broadening the use of digital technologies can improve public services in ways that were not possible in the past. Through technology the learning sector is increasing access to education and training opportunities. Currently the program structure of the branch includes Learning Technology, Network Services, Technology Enhanced Learning, the Educational Technology Consortium and the Saskatchewan Government Correspondence School.	http://www.sasked.gov.sk.ca/branches/elearning/overview.shtml Communications Branch 1st Floor, 2220 College Avenue Tel: 306-787-9478 Fax: 306-798-2045

International Programs, Projects, Networks, Communities of Practice, and Associations		
The e-Learning Programme	An e-learning programme funded by the JISC Committee for Learning and Teaching to run from October 2003 until September 2006. The programme focuses on four areas: e-learning and pedagogy; technical frameworks for e-learning (ELF); e-learning and innovation and distributed e-learning.	http://www.jisc.ac.uk/index.cfm?name=programme_elearning Contact: on site
Leonardo da Vinci	The European Commission's Leonardo da Vinci programme serves as a laboratory of innovation in the field of lifelong learning. Following its initial phase, from 1995 to 1999, the vocational training programme is now in its second phase, covering the seven-year period from 2000 to 2006. The programme promotes transnational projects based on co-operation between the various players in vocational training - training bodies, vocational schools, universities, businesses, chambers of commerce, etc. - in an effort to increase mobility, to foster innovation and to improve the quality of training. The Leonardo da Vinci programme aims at helping people improve their skills throughout their lives.	http://europa.eu.int/comm/education/programmes/leonardo/leonardo_en.html Contact: eac-info@cec.eu.int
The EU-Net – European University-Industry Network	This project began Jan. 2004 and aims to create a European network of universities and industrial partners in the field of education, research and services. This project partnership is built on the foundations laid previously by the Tempus projects coordinated by the University Transilvania of Brasov. The main activities are related to the setting up of the network as a legal body at European level active in the University-Industry cooperation sector, promoting synergy between teaching and research in the relevant areas for industry, research and training cooperation and structuring the university curricula including student practical stages, professional insertion, dissemination, etc. The main outputs include publishing of books, organizing European workshops and the EUI-Net conference, web databases for graduates, available jobs in industry, promotion of research and innovation etc. The target groups are graduates, students and learners in European universities, academic and research staff in European higher education institutions, university leadership, university stakeholders; professional staff from industrial companies, managers and policy makers etc.	http://www.eui-net.org/
e-Assessment of Learning Needs in small and medium enterprises (SMEs)	The aim of the project is to develop a diagnostic e-assessment tool (assessment software) that can be utilized by trainers and training developers in an SME context and to empower and improve the conditions for continuous learning. When SMEs in Europe want to become more dynamic and competitive knowledge-based organisations, they will have to improve their ability to analyze their learning/ training needs and select an appropriate learning strategy.	http://www.e-assess.org/ e-Novate Consultancy Ltd PO Box 328 Margate Kent CT8 8GN

International Programs, Projects, Networks, Communities of Practice, and Associations		
	The learning strategy involves effective use of e-learning, blended learning, on-the-job-learning and informal learning. The tool is part of a 'learning strategy model' which describes effective and innovative methods for training and learning, good practises and bench mark data for SMEs.	Caron Brenner caron@enovateknowledgespan.org Markus Wolf markus@enovateknowledgespan.org
SOLT – Supporting Online Learning and Teaching	SOLT was a project partly funded by Leonardo da Vinci programme and was carried out by a large partnership of 11 partners from 8 European countries. The aim of the project was to develop online learning and teaching guidelines in the form of a pedagogical compendium for those trainers wanting to utilize eLearning or those who have begun to utilize eLearning, particularly trainers working with small businesses. The final guidelines are in the form of a CD Rom, with a supplemental paper manual and are freely accessible through the web http://www.enovateknowledgespan.org/projects.asp. e-Novate Knowledge Span was the project promoter and co-ordinator. The project commenced in December 2000 and finished in November 2003.	http://www.solt.ccg.pt
FOCUS - Future Oriented Computer-based Upgrading education System	Focus is a new distance learning system provided by VUC (Voksen Uddannelses Center – Adult Education Centre) in Storstrøm County (Denmark). Focus has been developed in an international project supported by EU's ADAPT programme. Essentially, Focus has been designed as a flexible and result-oriented educational option for adults. The system ensures versatility and quick adaptation to individual needs. Dividing the target group into individuals implies that training can be tailored on the basis of the goals, needs and qualifications of each individual. In order to provide a real opportunity for as many as possible to participate in further education, Focus is always set up in cooperation with the users. Focus is designed as a complete future-oriented educational option for adults. National and regional relations are an important factor when it comes to further development of the Focus education system, a process for which VUC-Business and the labour markets parties are responsible. The Focus education system comprises the following basic elements: Electronic communication Web-based teaching materials Study groups Study tours Group instruction Use of VUC's study workshops	http://www.focus-vuc.dk/
ASTD's e-LEARNING	ASTD is the world's largest association dedicated to workplace learning and performance professionals. ASTD's	http://www.astd.org/astd/Resources/elearn

International Programs, Projects, Networks, Communities of Practice, and Associations		
Community	70,000 members and associates come from more than 100 countries and thousands of organizations - multinational corporations, medium-sized and small businesses, government, academia, consulting firms, and product and service suppliers. The ASTD e-Learning Community is designed to be an area where people can access practical, hands-on resources and connect with peers for advice, to aid in the design, development, facilitation and management of effective e-learning solutions.	ing_community/elearning_home.htm 1640 King Street, Box 1443 Alexandria, Virginia, 22313-2043 USA Tel: 703.683.8100 Fax: 703.683.8103
European Association for Education of Adults (EAEA)	EAEA is a European NGO with more than 100 member organisations from 34 countries working in the fields of adult learning. The main roles of the EAEA are to provide policy advocacy for lifelong learning at a European level, the development of practice through projects, publications and training, provision of information and services for its members and fostering international co-operation.	http://www.eaea.org EAEA Main Office Ellinor Haase [General Secretary] Rue de la Concorde 60 B-1050 Brussels Tel : +32 2 513 5205 Fax: +32 2 513 5734 eaea-main@eaea.org
Australasian Society for Computers in Learning in Tertiary Education (ASCILITE)	The Australasian Society for Computers in Learning in Tertiary Education (ASCILITE) is a society for those involved in tertiary computer-based education and training, including educational interactive multimedia. It provides a forum to stimulate discussion of relevant issues in the educational use of technology, as well as promoting research and evaluation.	http://www.ascilite.org.au/ President Cathy Gunn University of Auckland ca.gunn@auckland.ac.nz
European Distance and E-Learning Network (EDEN)	EDEN, established in 1991, is the most comprehensive European association in open, flexible, distance and e-learning. Its aim is to foster developments in this constantly evolving field through offering services in a non-hierarchical manner. As a meeting place, EDEN assists a wide range of European institutions, networks and individuals in becoming involved in professional co-operation. This is achieved by the information and networking activities in the membership and by the organisation of European conferences and publications of the highest standard.	http://www.eden-online.org/eden.php President: Ingeborg Bø, Executive Director of the Norwegian Association for Distance Education Tel: 0047 22 51 0480 Fax: 0047 22 51 0481 e-mail: boe@nade-nff.no
United States Distance Learning Association (USDLA)	USDLA is a non-profit 501C3 Organization committed to be the leading distance learning association in the United States. USDLA provides advocacy, information, networking and opportunity to the distance learning community.	http://www.usdla.org USDLA 8 Winter Street, Suite 508 Boston, Massachusetts 02108 Tel: 800.275.5162 Fax: 617.399.1771 John G. Flores, Ph.D.

International Programs, Projects, Networks, Communities of Practice, and Associations		
		jflores@usdla.org
Simulation and Advanced Gaming Environment for Learning (SAGE)	SAGE is a consortium of national and international university researchers, colleges, and private sector education and training companies who have joined together to explore the potential of technology-based simulations and games for learning and to share their expertise and research findings.	http://www.sageforlearning.ca/ SAGE Room 7560 – LIDC/Education Bldg Simon Fraser University 8888 University Drive Burnaby, BC V5A 1S6

Appendix 4: Canadian Army Research & Development

- **CTC - G3 Training Development Cell**

ACAT is the new software product that designers within G3 Trg Dev DLP, CTC Gagetown, have created and implemented for the development of their electronic courseware. With the introduction of SCORM and the concept of sharable content, development of a better system for creating standardized and shareable courseware became a high priority. ACAT allows instructors to create and reuse learning objects and then bundle the Learning Objects into new courses. The courses can then be accessed through the repository or exported as a stand-alone or SCORM package. ACAT separates the content from the presentation allowing for maximum reuse without branding throughout CTC.
http://www.armyelearning.ca/

- **IKIT - Institute for Knowledge, Innovation and Technology**

Institute for Knowledge, Innovation and Technology (IKIT), created and located at the ninth floor of OISE intends to have the Department of National Defense (DND) and Atlantis Systems International (ASI) join their two year old education research project called Beyond Best Practice: Research Based Innovation in Learning and Knowledge Work
http://ikit.org/

Appendix 5: Private Canadian Companies

Canadian Private E-Learning Companies		
Name	**Description**	**Contact**
ADGA Group Consultants, Inc.	ADGA provides e-learning solutions for the public and private sectors including: government, manufacturing, transportation, aviation, defence, health, safety and education.	http://www.adga.ca/ourservices/elearning_e.asp adga@adga.ca (613) 237-3022
Innovative Training Solutions Inc.	Innovative Training Solutions Inc. under contract to the Canadian Council of Ministers of Education has produced an applied research report that examined the application of adult education definitions, best practices and policy and program implementation within Canada and in the international community. The report proposes a structure for a Pan-Canadian policy framework to guide the creation and delivery of adult education policies and programs across Canada.	http://www.innovativetraining.ca 11247 Blaney Way Pitt Meadows, BC, V3Y 2V3 Tel.: (604) 465-1871 Fax: (604) 465-1872
CUSOURCE - Credit Union Knowledge Network	The CUSOURCE™ Credit Union Knowledge Network is a gateway to the best of credit union learning and innovative knowledge sharing. Delivered through proven technology, CUSOURCE provides access to a variety of learning vehicles, knowledge sharing and management tools, both online and in the classroom.	http://cuic-prod.docenthost.com/cusource 300 The East Mall Suite 500 Toronto, ON M9B 6B7 Tel: (416) 232-1262 or 1-800-267-2842 Fax: (416) 232-1495 E-mail: info@cusource.ca
LearnStream Inc.	Founded in 1993, LearnStream develops e-learning course software for large corporations, training materials publishers, software developers, government agencies, military departments, and other organizations. Specializing in customized training software, the company uses its own proprietary rapid courseware development system to create and deliver course content. LearnStream serves clients in the aerospace and defence, technology, telecommunications, hospitality, international aid and development, financial services and manufacturing sectors. Clients include the World Health Organization, the Canadian Navy and EXE Technologies.	http://www.learnstream.com 414 York Street Fredericton, NB E3B 3P7 Phone: 1-800-479-7333 / (506) 447-4900 Fax: (506) 447-4911

Canadian Private E-Learning Companies		
Name	**Description**	**Contact**
Red Hot Learning Inc.	Red Hot Learning is a strategic learning and consulting company. They assist organizations in addressing their human resource, leadership and learning needs. They create real-time learning enterprises with clients who are thriving in the here and now to give them the ultimate competitive edge for the future. They provide analyses and international marketing strategies for learning and related industries. Their consultants provide marketing and business services to growth oriented e-learning companies. They also provide human resource consulting services to help organizations create and implement an HR strategy.	http://www.redhotlearning.com/ Corporate Offices 390 King Street Suite 300 Fredericton, NB Canada E3B 1E3 506.454.3000
INNOVATIA	Launched in 2000, Innovatia is an Aliant company headquartered in Saint John, NB. Its purpose is to deliver Knowledge Services Solutions for telecommunications and IT companies. They blend both web-based and traditional learning techniques to provide custom eLearning solutions. Their eLearning content development process and a robust technology infrastructure allows them to manage content and delivery in a user-friendly format that costs less, takes less time to complete and is immediately applied to the work site. They offer a combination of live online classrooms, self-paced online learning, facilitated online learning and physical classroom training.	http://www.innovatia.net PO Box 6081 One Brunswick Square Saint John, New Brunswick E2L 4R5 Canada e-mail: innovatia@innovatia.net Tel:: 506 640 4000 toll free (Canada/United States): 1 800 363 3358 toll free International: 001 800 363 3358 Fax: 506 640 4422
Tony Bates Associates Ltd.	Tony Bates Associates Ltd. is a private company specialized in consultancy and training in the planning and management of e-learning and distance education. The company offers services to higher education institutions, NGOs and government agencies in the following areas: strategic use of learning technologies planning and management of e-learning (including costs and business plans) planning, management and organization of distance education strategies for research into e-learning evaluation, monitoring and review of e-	http://www.tonybates.ca/associates.html Dr. Tony Bates Tony Bates Associates Ltd., 2906 West Broadway Suite # 342 Vancouver, B.C. Canada V6K 2G8. tony.bates@ubc.ca http://tonybates.ca Tel: 1-604-733-9449 Fax:1-604-739-8511

Canadian Private E-Learning Companies		
Name	**Description**	**Contact**
	learning and distance education operations	(please notify by e-mail if sending a fax)
Technomedia Inc.	To reengineer traditional learning, Technomedia utilizes learning technologies to create interactive, multimedia learning and testing activities.	http://www.technomedia.ca Technomedia Training Inc. 1001 De Maisonneuve Blvd. West Fifth Floor Montreal, Quebec Canada H3A 3C8 Tel: +1 514-287-1561 Fax: +1 514-287-1733 OR Toronto 330 Bay Street, Suite 508 Toronto, Ontario Canada M5H 2S8 Tel: +1 416-203-0072 Fax: +1 416-203-7863

Appendix 6: E-Learning Journals

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
Canadian Journal of Learning and Technology	CJLT is published by the Association for Media and Technology in Education in Canada (AMTEC)	http://www.cjlt.ca/
The Canadian Journal of Higher Education	Published by the Canadian Society for the Study of Higher Education, the Canadian Journal of Higher Education (CJHE) is a peer reviewed journal. It is intended to serve as a medium of communication among those directly involved in higher education in Canada, or deeply interested in this field. The principal focus is on Canadian higher education but not to the exclusion of developments in other countries which are of concern to the Canadian scene. Articles making a contribution to any aspect of higher education are welcome. The CJHE is indexed in the Canadian Education Index, the Canadian Magazine Index, ERIC and Higher Education Abstracts.	http://www.ingentaconnect.com/content/csshe/cjhe http://umanitoba.ca/outreach/csshe/Pub/pub.html
Journal of Distance Education JDE	Published by CADE. The Journal of Distance Education aims are to promote and encourage Canadian research and scholarly work in distance education and provide a forum for the dissemination of international scholarship.	http://www.cade-aced.ca http://cade.athabascau.ca/
The Distance	Published by Alberta Distance Ed. & Training Association (ADETA)	http://www.athabascau.ca/html/collab/adeta/newsletter.htm
The Alberta Journal of Educational Research (AJER)	Published quarterly by the Faculty of Education, University of Alberta and edited by Dr. George H. Buck, U. of Alberta, AJER is dedicated to publication of systematic enquiry into education and fields related to or associated with education.	http://www.education.ualberta.ca/educ/journals/ajer.html
CONNECT	**CONNECT** is Canada's Resource Publication on Technology and Adult Literacy. CONNECT was established in 1997 in response to a need for information on available technologies and their use in adult literacy programs. The Ottawa-Carleton District School Board with funding from the National Literacy Secretariat has produced 4 volumes of this publication with a fifth volume currently underway. CONNECT continues to provide the Canadian literacy community with the latest information on technological resources including hardware, software and websites.	http://www.nald.ca http://www.nald.ca/connect/v5i5/connect.htm

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
	CONNECT is a practical resource that provides technical information in a clear format, accessible to practitioners and students with a range of computer experiences. Research, reports from the field and curriculum material, help practitioners determine effective ways to integrate technology into literacy instruction. Literacy practitioners are encouraged to use CONNECT as a vehicle to share ideas and expertise related to the use of technology. With assistance from the National Adult Literacy Database, all of the previous and current issues of CONNECT can be viewed online.	
LTReport	*(Node Learning Technologies Network)* A Canadian journal with international coverage of the field of e-learning, each issue contains a thorough analysis of one topic related to using the Internet to build and support communities of practice and develop non-commercial, innovative learning technologies. A print publication on sale through the Web site. Semi-annual.	http://the node.org
The International Review of Research in Open and Distance Learning	A refereed e-journal to advance research, theory & practice in open and distance learning worldwide, based at Athabasca University. Publisher and editor: Terry Anderson Associate editors: Mohamed Ally, Peter Cookson, Pat Fahy, Heather Kanuka, Ian Mugridge.	http://www.irrodl.org
International Journals related or dedicated to e-Learning		
Australasian Journal of Educational Technology	AJET is a refereed journal publishing research and review articles in educational technology, instructional design, educational applications of computer technologies, educational telecommunications and related areas. AJET's principal supporting societies are: Australasian Society for Computers in Learning in Tertiary Education (ASCILITE) Australian Society for Educational Technology (ASET) International Society for Performance Improvement, Melbourne Chapter	http://www.ascilite.org.au/ajet/ajet.html
education.au Reports	Owned by the Australian Commonwealth and State and Territory Education and Training Ministers, education.au is a national education and training agency. In collaboration with many education and training communities, the Agency develops and maintains online informational services that are designed to make educational information available to	http://www.educationau.edu.au/ann_reports/

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
	national education and training workers and communities. One of the Agency's many missions is to meet the educational challenges offered by the Internet. The Agency's annual reports are available online.	
Electronic Journal of e-Learning (EJEL)	EJEL is published by Academic Conferences Limited. The Electronic Journal of e-Learning provides perspectives on topics relevant to the study, implementation and management of e-Learning initiatives. The journal contributes to the development of both theory and practice in the field of e-Learning. The journal accepts academically robust papers, topical articles and case studies that contribute to the area of research in e-Learning.	http://www.ejel.org/ IISSN 1479-4403 Curtis Farm, Kidmore End North Reading RG4 9AY England Tel: +44 (0)1189 724148 Fax: +44 (0)1189 724691 Email: info@ejel.org
ARIADNE	*Ariadne* magazine is targeted principally at information science professionals in academia and interested lay people both in and beyond the Higher Education community. Its main geographic focus is the UK, but it is widely read in the US and worldwide. The magazine has as its principal goal to report on information service developments and information networking issues worldwide, keeping the busy practitioner abreast of current digital library initiatives. It has reported in depth to the information community at large on progress and developments within the UK Electronic Libraries Programme since its inception, and now additionally reports on newer JISC-funded programmes and services, including the DNER, the JISC Information Environment, and the RDN. *Ariadne* is published every three months by UKOLN.	http://www.ariadne.ac.uk/ ariadne@ukoln.ac.uk
EDINA Newsline	**EDINA**, based at the Edinburgh University Data Library, is a JISC-funded national datacentre. It offers the UK tertiary education and research community, networked access to a library of data, information and research resources. All EDINA services are available free of charge to members of UK tertiary education institutions for academic use, although institutional subscription and end-user registration are required for most services.	http://edina.ed.ac.uk/news/newsline.html
Journal of Access	Published twice a year, the Journal of Access Policy and Practice brings together refereed articles, book reviews	http://www.niace.org.uk/Publications/

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
Policy & Practice	and a debate section. An exclusive online version is available to all subscribers. It explores education policy and practice as it affects access to learning and surveys the field, both nationally and internationally. Informed by theory and current research, the journal shares ideas and practical solutions to create wider and deeper participation in lifelong learning and offers a space for practitioners and academics to critically reflect and debate different perspectives. Editor: Dr. Mary Stuart, Pro-vice chancellor, University of Sussex.	Periodicals/JAPP/Default.htm
Journal of Interactive Media in Education (JIME)	JIME is a peer-reviewed journal published by Knowledge Media Institute (KMI) at The Open University, U.K. Launched in Sept. 1996, JIME offers free access to all articles in HTML and PDF format. Edited by Josie Taylor and Patrick McAndrew.	http://www-jime.open.ac.uk/ ISSN:1365-893X
Journal of Asynchronous Learning Networks (JALN)	JALN is published by the Sloan Consortium – a Consortium of Institutions and Organizations Committed to Quality Online Education The aim of the Journal is to describe original work in asynchronous learning networks (ALN), including experimental results. Papers emphasizing results, backed by data, are the norm. Occasionally, papers reviewing broad areas are published, including critical reviews of thematic areas. Papers useful to administrators are welcome. Entire issues are published from time-to-time around single topic or disciplinary areas. The Journal adheres to traditional standards of review and authors are encouraged to provide quantitative data; currently JALN's acceptance rate is 25%. The original objective of the Journal was to establish ALN as a field by publishing articles from authoritative and reliable sources.	http://www.aln.org/publications/jaln/index.asp ISSN 1092-8235
The American Journal of Distance Education (AJDE)	AJDE is the internationally recognized journal of research and scholarship in the field of American distance education. Distance education describes teaching-learning relationships where the actors are geographically separated and communication between them is through technologies such as audio and video broadcasts, teleconferences and recordings, printed study guides and multimedia systems. The principal technology of current research interest is the World Wide Web and subfields of distance education including on-line learning, e-learning, distributed learning, asynchronous learning and blended learning.	http://www.ajde.com/

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
	AJDE offers a solid foundation of valuable research-based knowledge about all aspects of the pedagogy in the field. Peer reviewed articles provide reports on the latest findings. Audience includes teachers in schools, colleges, and universities, trainers in corporate, military, and professional fields, adult educators, researchers and other specialists in education, training and communications. From 1987 until 2001 AJDE was published at the Pennsylvania State University and is now published by Lawrence Erlbaum Associates.	
Journal of Research on Technology in Education (JRTE)	Published quarterly by the International Society for Technology in Education (ISTE), JRTE publishes articles that report on original research, system or project descriptions and evaluations, syntheses of the literature, assessments of the state of the art and theoretical or conceptual positions that relate to educational computing. International in scope and thorough in its coverage, the theoretical and conceptual articles in JRTE define the state of the art and future horizons of educational computing.	http://www.iste.org/Content/NavigationMenu/Publications/JRTE/About_JRTE/About_JRTE.htm
Online Journal of Distance Learning Administration	Published by the State University of West Georgia Distance and Distributed Education Center, the Online Journal of Distance Learning Administation is a peer-reviewed electronic journal offered free each quarter over the World Wide Web. The Journal welcomes manuscripts based on original work of practitioners and researchers with specific focus or implications for the management of distance education programs.	http://www.westga.edu/~distance/jmain11.html
Interactive Multimedia Electronic Journal of Computer-Enhanced Learning (IMEJ)	IMEJ is a prototype for an interactive multimedia electronic journal edited and produced at Wake Forest University. IMEJ aims to provide a peer-reviewed forum for innovations in computer-enhanced learning, to serve as a model and testbed for an electronic journal with a high level of multimedia and interactivity and to advance the acceptance of electronic publication as a legitimate and valuable form of academic discourse. The articles in IMEJ deal with the effective uses of technology in any and all disciplines within higher education.	http://imej.wfu.edu
CIT Infobits	Infobits is published by the Center for Instructional Technology at University of North Carolina at Chapel Hill. Infobits is an electronic service of The University's Academic & Technology Networks Center for Instructional Technology. Each month the CIT's	http://www.unc.edu/cit/infobits/bitsep05.html

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
	Information Resources Consultant monitors and selects from a number of information and instructional technology sources that come to her attention and provides brief notes for electronic dissemination to educators. Interests: higher education, games as learning tools, videoblogging.	
DEOS News	Established in 1999 and published by the Distance Education Online Symposium , DEOS News' mission is to disseminate distance education information more quickly and less formally than possible in a print publication. The symposium is comprised of DEOS-L and DEOSNEWS. DEOS-L is a moderated listserv that facilitates discussion of current issues in distance education. This forum now serves over 3,000 subscribers in 74 countries. Ideas, news, or job announcements posted on DEOS-L are likely to receive comments, questions and responses from around the world. Based at PennState University College of Education.	http://www.ed.psu.edu/acsde/deos/deosnews/deosarchives.asp
Journal of Computing in Higher Education (JCHE)	The Journal of Computing in Higher Education publishes peer-reviewed essays, reviews, reports and research articles that contribute to our understanding of the issues, problems and research associated with instructional technologies and educational environments. Articles exploring innovative pedagogical techniques, experimenting with instructional technologies or improving learner-centered assessment are encouraged. Articles are referenced in several national indexing/abstracting services.	http://www.jchesite.org/ ISSN 1042-1726
European Journal of Open, Distance and E-Learning (EURODL)	Supported by the European Distance and E-Learning Network (EDEN), EURODL, relaunched in 2004, publishes the accounts of research, development and teaching for Europe in its most inclusive definition, exploring the potential of electronic publishing. EURODL presents scholarly work and solid information about open, distance and e-learning, education through telematics, multimedia, on-line learning and co-operation. It is also an interactive platform - a place where you may comment, find links to interesting sites, prepare for conferences or look up conference documentation.	http://www.eurodl.org/
The Journal of Digital Contents	This quarterly international journal is about the planning, production, process, presentation and management of digital contents, from several	http://www.formatex.org/jdc/index.php

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
(JCD)	perspectives: technical, educational and social/legal. It mainly covers research papers and technical notes, as well as case studies. It is devoted to the rapid publication of new findings in these areas. Full and mini-reviews and provocative editorials which discuss and review the hottest topics of the moment are also considered.	ISSN: 1697-4735
Learning Technology Newsletter	This is a publication of the IEEE Computer Society Learning Technology Task Force (LTTF). It aims to report the activities of the Learning Technology Task Force including various announcements, work in progress, projects, participation opportunities, additions/modifications to the website and so on. In short, it serves as a channel to keep everyone aware of Task Force's activities. The quarterly publication is disseminated in two ways: content list by email and in HTML and PDF form on its website.	http://lttf.ieee.org/learn_tech/ ISSN 1438-0625
Connections/EdTech News	A Commonwealth Heads of Government publication with news articles on how member governments are developing and using open learning and distance education resources and technologies. Published 3 times a year by the Commonwealth of Learning.	http://www.col.org/news/connections/index.htm
Journal of Educational Technology and Society (JETS)	JETS is a quarterly journal published by the International Forum of Educational Technology & Society Endorsed by the IEEE Technical Committee on Learning Technology, the scope of the journal is very broad. JETS seeks academic articles on the issues affecting the developers of educational systems and educators who implement and manage such systems. The articles discuss the perspectives of both communities and their relation to each other. A number can focus on a special issue; April 2007 special issue: quality of e-learning.	http://www.ifets.info/
International Journal on E-learning (IJEL)	IJEL is published by the Association for the Advancement of Computing in Education (AACE). IJEL serves as a forum to facilitate the international exchange of information on the current research, development and practice of e-learning in the following sectors: corporate, government, healthcare, and higher education. Led by an Editorial Review Board of leaders in the field of e-Learning, the journal is designed for the following audiences: researchers, developers, and practitioners in corporate, government, healthcare, and higher education. IJEL is a peer-reviewed journal.	http://www.aace.org/pubs/ijel/default.htm ISSN 1537-2456

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
AACE Journal (AACEJ)	AACEJ provides a multidisciplinary forum and focal point for AACE members to exchange information between disciplines, educational levels, and information technologies. The purpose of this exchange should result in the growth of ideas and practical solutions that can contribute toward the improvement of education and learning through information technology. All AACE members receive the quarterly journal as a benefit of membership.	http://www.aace.org/pubs/aacej/ ISSN: 1551-3696
Journal of Educational Multimedia and Hypermedia (JEMH)	JEMH is another journal published by AACE, designed to provide a multi-disciplinary forum to present and discuss research, development and applications of multimedia and hypermedia in education. The main goal of the journal is to contribute to the advancement of the theory and practice of learning and teaching using technological tools that allow the integration of images, sound, text, and data.	http://www.aace.org/pubs/jemh/default.htm ISSN 1055-8896
Journal of Interactive Learning Research (JILR)	The JILR, by AACE, publishes papers related to the underlying theory, design, implementation, effectiveness and impact on education and training of the following interactive learning environments: authoring systems, cognitive tools for learning computer-assisted language learning, computer-based assessment systems, computer-based training, computer-mediated communications, computer-supported collaborative learning, distributed learning environments, electronic performance support systems, interactive learning environments, interactive multimedia systems, interactive simulations and games, intelligent agents on the Internet, intelligent tutoring systems, microworlds, virtual reality based learning systems.	http://www.aace.org/pubs/jilr/default.htm ISSN 1093-023X
International Journal on E-learning (IJEL)	Formerly called the International Journal of Educational Telecommunications and the WebNet Journal, and published by the Association for the Advancement of Computing in Education (AACE), the International Journal on E-Learning serves to promote the exchange of current e-learning research, practice and development in the fields of higher education, corporate, government and healthcare services on an international level.	http://www.aace.org/pubs/IJEL/default.htm ISSN 1537-2456
Asian Journal of Distance Education	The main aim of AJDE is to disseminate scholarly works and information useful to researchers and practitioners in the growing field of distance education in Asia; also, to provide a forum for discussions within	http://www.asianjde.org/ ISSN: 13479008

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
(AJDE)	and directly relating to Asia, and so elicits Asian local theoretical and practical solutions to address local concerns. Contributions are invited from around the world that meet the criteria of relevance to the Asian context.	
The Internet and Higher Education	The Intenet and Higher Education is a quarterly peer reviewed journal of Innovations in Post-secondary Education devoted to addressing contemporary issues and future developments related to online learning, teaching, and administration on the Internet in post-secondary settings. Its scope includes innovations and best practices in online teaching, learning, management and administration. Other issues may include the following: Internet technology design and use; instructional models in online course; online courses development and instructional design; interaction in online courses; collaborative learning; usability and evaluation of online environments and portals; online communities of practice; institutional policies, standards and assessment; accessibility standards in online instruction; internationalization and cultural aspects of online classrooms; and issues and trends in synchronous, asynchronous and hybrid online learning.	http://www.elsevier.com/wps/find/journaldescription.cws_home/620187/description#description ISSN: 1096-7516
International Journal of Instructional Technology & Distance Learning (IJITDL)	This journal was established to facilitate collaboration and communication among researchers, innovators, practitioners and administrators of education and training programs involving technology and distance learning. Duquesne University supported the Journal during its first year of operation under leadership of Lawrence Tomei, Director of the TEIR Center and Don Perrin of DonEl Learning Inc. Additional support is provided by a host of volunteer editors, referees and production staff that cross national boundaries. Monthly, refereed, global, and free, the journal focuses on research and innovation in teaching and learning. The editors and staff are committed to publish significant writings of high academic stature and make them freely available to stakeholders in distance learning and technology including research, education and training, worldwide. Donald G. Perrin, Executive Editor Stephen Downes, Editor at Large Brent Muirhead, Senior Editor, Online Learning	http://www.itdl.org/index.htm ISSN 1550-6908

Canadian Journals related or dedicated to e-Learning		
Name	**Description**	**Contact**
	Elizabeth Perrin, Editor, Synchronous Learning Muhammad Betz, Referee Manager/Coordinator	
Proposed journal: Technology & Pedagogy	**Technology & Pedagogy** is intended to be a quarterly journal aimed to put on record the best practices in employing learning technology with a view to identify and analyze the pedagogical issues surrounding planning, design, commissioning, implementation and on-going support for successful harnessing of learning technology. As opposed to the theoretical and pure research focus within its specialist contributing fields (such as user psychology and artificial intelligence), the journal will aim to pursue the research issues predominantly concerned with the wider take up of and more beneficial deployment of learning technology. The journal should create a greater understanding of the pedagogical factors that help or hinder such deployment on one hand while also informing the pedagogy about new possibilities created by the technology on another. An important role of the journal will be to share the knowledge about creative uses of existing and emerging technology.	Not yet available

Appendix 7: E-learning Conferences, Workshops, Symposiums

E-learning Conferences, Workshops, Symposiums			
Title / Theme	**Location**	**Date**	**Website**
Leading Learning 2006 focused on connecting teachers and students through information communications technologies (ICT). The thoughtful and effective use of ICT to enhance teaching practice and increase student achievement by sharing current best practice, exploring future initiatives and evaluating recent research was the aim of this conference for teachers, administrators and policy makers. Leading-edge e-learning programs, technologies, and the effective practices presented at this conference provided participants with opportunities to interact, network and engage.	**Toronto, Ontario** The Conference, hosted by York University, Trillium-Lakelands DSB, Peel DSB, Toronto CDSB, York Region DSB and The Learning Partnership, was held in the TEL (Technology Enhanced Learning) Building on the **York University** Keele Campus, in Toronto, Ontario.	**Feb. 12-14, 2006**	http://www.leadinglearning2006.yorku.ca/
TLT 2006 – Teaching Learning and technology This is a professional development event sponsored by Campus Saskatchewan partners, with funding from Saskatchewan Learning.	To be announced	**Apr. 30 – May 2, 2006**	http://www.campussaskatchewan.ca/cseventsnts/tlt2006/
CADE-AMTEC 2006 International Conference **Theme: Innovation in Education. Challenges, Issues and Solutions**	**Montréal, Québec** Université du Québec à Montréal - Télé-université	**May 23-26, 2006**	http://www.cade-aced.ca/
ED-MEDIA 2006 **World Conference on Educational Multimedia, Hypermedia & Telecommunications** The scope of the conference includes, but is not limited to, the following major topics as they relate to the educational and developmental aspects of multimedia/hypermedia and telecommunications: 1. Infrastructure 2. Tools & Content-oriented Applications 3. New Roles of the Instructor & Learner 4. Human-computer Interaction (HCI/CHI) **5.** Cases & Projects 6. Universal Web Accessibility 7. Indigenous Peoples & Technology	**Orlando Florida** Organized by American Association for Computing in Education (AACE)	**June 26 -30, 2006**	http://www.aace.org/conf/edmedia/default.htm

E-learning Conferences, Workshops, Symposiums			
Title / Theme	**Location**	**Date**	**Website**
E-Learn 2006 **World Conference on E-Learning in Corporate, Government, Healthcare & Higher Education** "The E-Learn conference series is about Blending (Gary H. Marks, Ph.D. AACE Executive Director)."	**Waikiki Beach, Honolulu, Hawaii** Organized by AACE	**Oct 13-17, 2006**	http://www.aace.org/conf/elearn/
ASCILITE 2005 Conference Theme: Balance, Fidelity, Mobility: Maintaining the Momentum? The conference was designed to acknowledge and recognize innovative exploration of the demands on people, society and environment in relation to future knowledge, developments and practices that contribute to the maintenance of an evolutionary momentum in the field of educational technology.	**Brisbane, Australia** Queensland University of Technology, Gardens Point Campus Organized by Australasian Society for Computers in Learning in Tertiary Education (ASCILITE)	**Dec. 4-7, 2005**	http://www.ascilite.org.au/conferences/brisbane05/start.shtml
ONLINE EDUCA BERLIN 2005 **11th International conference on Technology Supported Learning & Training**	**Berlin, Germany** InterContinental Berlin Organizers, partners and sponsors – on website	**Nov. 30- Dec. 2, 2005**	http://www.online-educa.com/en/
2nd Annual Scientific Conference LORNET Research Network 2005 **Theme: E-Learning Frameworks for the Future - From Content to Services** This year's conference theme focused on the international innovations for sharing learning resources and contents by their integration in technological frameworks on the New Internet.	**Vancouver, BC** Simon Fraser University	**Nov. 14-18, 2005**	http://www.lornet.org/i2lor5/
ECEL 2005: The 4th European Conference on e-Learning Topics include: e-Learning portals and Virtual Learning Environments, Learning Content Management Systems, Knowledge Bases and Management, Computer Aided Assessment, e-Learning transaction sites, META data standards, etc.	**Amsterdam, Netherlands** Royal Netherlands Academy of Arts & Sciences	**Nov. 10-11 2005**	http://www.academic-conferences.org/ecel/ecel2005/ecel05-home.htm
The Knowledge Exchange Conference 2005 - Canada's premier conference and trade show for workplace learning and performance professionals.	**Toronto, Ontario**, Metro Toronto Convention Centre	**Nov. 6 - 9, 2005**	

E-learning Conferences, Workshops, Symposiums			
Title / Theme	**Location**	**Date**	**Website**
Orion CAnet Workshop – Intelligent Infrastructure: Supporting next-generation research and education The workshop, part of a series, featured presentations and demonstrations from researchers and educators who illustrated how they incorporate next-generation collaboration tools and resources in their work and research.	**Kingston, Ontario** hosted by Queen's University organized by ORION and CANARIE with the participation of St. Lawrence College and Royal Military College	**Nov. 3, 2005**	http://www.orion.on.ca/events/kingstononiconday.html
E-Learn 2005 – World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education	**Vancouver, BC** Organized by AACE co-sponsored by the International Journal on E-Learning.	**Oct. 24 -28, 2005**	http://www.aace.org/conf/eLearn/default.htm
Training Fall Conference & expo incorporating online learning Among topics: E-Games and Simulations for Learning, Corporate/Higher Ed Partnerships.	**Long Beach California** Long Beach Convention Center	**Oct. 17-19, 2005**	http://www.vnulearning.com/learninggroup/3400/index.jsp
Nortel Research and Education Network Symposium 2005. This two day interactive event provided tutorials, workshops and live demonstrations covering the technology underpinning hybrid Research & Education Networks as well as the current state of the art implementations and the roadmap for the future.	**Ottawa, Ontario** held at Nortel's R&D facility. Organized by Nortel in partnership with CANARIE and Sun Microsystems.	**Oct. 12-13 and Oct. 24-25**	http://www.nortel.com/corporate/events/2005d/networksymposium2005/index.html
Interactive videoconferencing: Igniting Opportunities for Learning – Keystone Conference Participation for this conference was by either traveling to Indianapolis or at a distance through videoconferencing or web streaming.	**Indianapolis, USA** University Place and Conference Center	**Oct. 3-5, 2005**	http://www.keystoneconference.org/
OECD/Canada/Alberta Conference on E-learning in Post-Secondary Education Theme: Connecting Technology and Teaching/Learning	**Calgary, AB** Organized by: OECD, Alberta Gov. and Canada Gov.	**June 26-28, 2005**	http://www.education.gov.ab.ca/oecd2005/default.asp
Learning Innovations Symposium 2005 The symposium had 5 learning themes: Gaming Solutions, Performance Improvement, Collaborative Learning,	**Fredericton, NB** Organized by Canadian Society for Training and	**May 16-17, 2005**	http://www.learnnb.ca/index.php?option=c

E-learning Conferences, Workshops, Symposiums			
Title / Theme	**Location**	**Date**	**Website**
Workflow Support and Real Time **Systems** and ePortfolio.	Development (CSTD)		om_content&task=view&id=51&Itemid=125
CADE/ACÉD 2005 Vancouver International Conference **Theme: Learning Virtually Anywhere**	**Vancouver, BC** Hosted by the Centre for Online and Distance Education at Simon Fraser U.	**May 7-11, 2005**	http://www.cade2005.ca/en/index.html

Appendix 8: Other resources

Other resources (magazines, blogs, newsletters)		
Name	**Description**	**Contact**
Learning Circuits	Learning Circuits is a magazine published by the American Society for Training & Development (ASTD). Its goal is to promote and aid the use of e-learning and creating a body of knowledge about how to use technology efficiently and effectively for learning. It delivers a fully interactive website with discussions, demos and resources, and articles on a weekly basis. A bi-weekly opt-in email newsletter, *LC Express*, sends news, teasers and links to subscribers. There are nearly 500 articles currently on the website.	http://www.learningcircuits.org/
Daily News (Distance Educator)	A U.S. newsletter for distance education developers, policy makers, providers, teachers and learners. Daily headlines about distance education around the world, resources and tools for distance teaching. Five issues/week.	http://www.distance-educator.com/index.php
Convergence Online	A U.S. magazine with news items and articles on education policy and technology from the elementary through postsecondary and adult education levels. Monthly.	http://www.convergemag.com/
Educause Quarterly	A U.S. journal with articles, case studies and practical ideas for college and university managers of information resources, technologies and services.	http://www.educause.edu/eq/
Educause Review	A U.S. magazine with articles on policy and practices as well as news items on learning, communications and information technology in the postsecondary education sector. Bi-monthly.	http://www.educause.edu/pub/er/
Edupage	A free e-mail service that summarizes developments in information technology, sent three times a week to subscribers. Where other EDUCAUSE publications focus primarily on information technology in higher education, *Edupage* offers synopses of a more general nature, which are extracted from the mainstream media.	http://www.educause.edu/Edupage/639
Brandon Hall Research	Brandon Hall, Ph.D., is a leading independent expert in e-learning, helping organizations make the right decisions about technology through his writing, advising, and presenting. With more than 20 years as a training professional, Dr. Hall is the CEO of Brandon Hall Research.	http://www.brandon-hall.com
Online Learning	Blog edited by Ray Schroeder. **Ray Schroeder** is Professor Emeritus of	http://people.uis.edu/rschr1/onlinelearnin

Update	Communication, Director of the Office of Technology-Enhanced Learning at the University of Illinois at Springfield and Faculty Associate at the University of Illinois Online. He has taught more than two dozen online classes. As Director of Technology-Enhanced Learning he is dedicated to faculty development and pedagogical support of the online initiative. As Faculty Associate, Schroeder is engaged in the formation of online learning policy for the University of Illinois. He is a Sloan Consortium Distinguished Scholar in Online Learning 2002-2003 and the recipient of the 2002 Sloan-C award for the "Most Outstanding Achievement in ALN by an Individual."	g/blogger.html
Sloan-C View – Perspectives in Quality Online Education	A publication of the Sloan Consortium, the Consortium currently has approximately 1119 active organizational members, including colleges, universities, consortia and vendors.	http://www.aln.org/publications/view/index.asp
Campus Technology	Launched in October, 2004, *Campus Technology* replaced the highly respected *Syllabus* magazine, a recognized leader in the coverage of technology on campus since 1988. *Campus Technology* continues to uphold *Syllabus*' mission of serving as a complete resource for academic and administrative IT leaders in higher education and provides in-depth coverage of specific technologies, their uses and implementations on campus. The *Campus Technology* franchise consists of the monthly *Campus Technology* magazine, its web site, www.campus-technology.com, electronic newsletters (*News Update*, *IT Trends*, *Technology-Enabled Teaching*, *C2*), conferences and targeted list rental opportunities.	http://www.campus-technology.com/index.asp
Best Practices in eLearning	Based on the research of the Learning-on-Demand program and work of SRI Consulting Business Intelligence, this report offers information of more than 40 best e-learning practices. This report is based on the findings of the research and projects of many different industries and will be mostly useful to companies interested in improving their e-learning practices.	http://www.sric-bi.com/LoD/summaries/BestPrac2004-05.shtml
E-learning Age Magazine	With a readership of people who work for or inside learning organizations in the UK, this publication looks at how organizations sustain intellectual capital and the issues related to e-	http://www.elearningage.co.uk/

	learning solutions. This publication is published 11 times a year.	
E-learning Age Research Reports	A section of the UK's E-learning age magazine, E-learning Age Research Reports provide readers with listings of e-learning survey reports from many sources.	http://www.bizmedia.co.uk/Reports.html
European eLearning Market Report	This report aims to separate the reality from the perception of the developments of the European e-learning industry. Covers many involved e-learning training organizations in both the public and private sector. This report identifies itself as "independent and impartial."	http://www.elearningage.co.uk/go1.htm
ASTD's E-Learning Discussion Board	Offered by the E-Learning Community, designed to be an area where people can access practical, hands-on resources and connect with peers for advice.	http://community.astd.org/eve/ubb.x?a=frm&s=4201061&f=6401041
Stephen Downes's Web Site & **OLDaily**	Currently based in Moncton, New Brunswick, at the Institute for Information Technology's e-Learning Research Group, Stephen has become a leading voice in the areas of learning objects and metadata as well as the emerging fields of weblogs in education and content syndication.	http://www.downes.ca http://www.downes.ca/news/OLDaily.htm
Elearnspace website and elearnspace blog	This site and blog have been created by **George Siemens** to explore e-learning, knowledge management, networks, technology, and community. According to Siemens, many resources exist for e-learning, yet a model of how the pieces fit together is often missing. elearnspace has been organized to present a whole picture view of e-learning.	http://www.elearnspace.org/ http://www.elearnspace.org/blog/
Harold Jarche's Blog	One of the themes of this blog is how informal learning can be coupled with low-cost and emerging technologies to create better work environments.	http://www.jarche.com/blog/1

Appendix 9: Funding Bodies and Funded Research

Canada:

Natural Sciences and Engineering Research Council Canada NSERC
http://www.nserc-crsng.gc.ca/
NSERC is a separate employer of the Government of Canada and its role is to make investments in people, discovery and innovation for the benefit of all Canadians. NSERC supports both basic university research through discovery grants and project research through partnerships among universities, governments and the private sector, as well as the advanced training of highly qualified people.

Social Sciences and Humanities Research Council of Canada SSHRC
http://www.sshrc-crsh.gc.ca/
SSHRC is a Canadian federal funding agency for university based research in the social sciences and humanities. This extensive website includes descriptions of funding programs, online application forms, competition winners, policies, news, links and even video clips describing new initiatives.

Canada's Innovation Strategy
http://innovation.gc.ca/gol/innovation/site.nsf/en/in04289.html
Canada's Innovation Strategy is described as a blueprint for action to promote Canada's culture of excellence, learning and innovation.
There are two streams:

> ***Achieving Excellence:*** *Investing in People, Knowledge and Opportunity* recognizes the need to consider knowledge as a strategic national asset. It focuses on how to strengthen our science and research capacity and on how to ensure that this knowledge contributes to building an innovative economy that benefits all Canadians. Industry Canada is the lead department for *Achieving Excellence*.
>
> ***Knowledge Matters:*** *Skills and Learning for Canadians* recognizes that a country's greatest resource in the knowledge society is its people. It looks at what can be done to strengthen learning in Canada, to develop people's talent and to provide opportunity for all to contribute to and benefit from the new economy. Human Resources Development Canada is the lead department for *Knowledge Matters*.

Industry Canada
http://www.ic.gc.ca
Industry Canada's mandate is to help make Canadians more productive and competitive in the knowledge-based economy, thus improving the standard of living and quality of life in Canada. Industry Canada has a broad range of programs and initiatives designed to benefit a diverse client base across Canada. Collaborating extensively with partners at all levels of government, as well as within the private sector, the Department has become a leader in providing client-focused programs and leading-edge initiatives.

> provides more and better-paying jobs for Canadians;
> supports stronger business growth through continued improvements in productivity and innovation performance;

gives consumers, businesses and investors confidence that the marketplace is fair, efficient and competitive; and
ensures a more sustainable economic, environmental and social future for Canadians.

Through its **three strategic objectives (a fair, efficient and competitive marketplace; an innovative economy; and competitive industry and sustainable communities)**, Industry Canada aims to help Canadians contribute to the knowledge economy and improve productivity and innovation performance.

Communications Research Centre (CRC)
http://www.crc.ca/
CRC founded the ***LearnCanada*** project (http://www.learncanada.ca/), which used broadband technologies to build an interactive virtual learning community for Canadian K-12 educators across the country. The program successfully demonstrated techniques for enhancing the professional development of Canadian educators. The program began in 1999 with funding from the CANARIE Learning Program and ended in September 2002. Communications Research Centre Canada (CRC) was a founding member and remained in a key role throughout the project. CRC's BADLAB™ also served as LearnCanada's Network Operations Centre and was used to develop, demonstrate and test new broadband applications and services.

CRC's John Spence, the chair of ***LearnCanada***, was involved in the project from the beginning.

CRC founds the IST-EC 2 project (http://www.ist-ec.org/), operational from April 2005 to April 2007. IST-EC 2 is a joint Canada-Europe project whose objective is to connect the European and Canadian research communities in key areas of the Information Society Technologies (IST). It will build on the success of the original IST-EC project which ended in May of 2004, by facilitating co-operative participation in comparable Canadian and European IST Research & Technology Development (RTD) programs. Application areas are:

- usability of new technologies, including supporting physically impaired people
- e-learning and e-content
- multimedia and software development
- broadband enabled networks

This will be accomplished through face to face workshops, partnering sessions at international conferences and a new interactive web partner search tool. The interactive web space is currently under development and an announcement will be sent to you when it is operational whereby you can post a profile or project search.

ACOA = Atlantic Canada Opportunities Agency
http://www.acoa.ca/
Through their Atlantic Innovation Fund (http://www.acoa.ca/e/financial/aif/index.shtml) they offer assistance to the LCeL e-learning research project conducted by Innovatia, NB.

Canada Foundation for Innovation
http://www.innovation.ca/
The Canada Foundation for Innovation (CFI) is an independent corporation created by the Government of Canada to fund research infrastructure. The CFI's mandate is to strengthen the capacity of Canadian universities, colleges, research hospitals, and non-profit research institutions to carry out world-class research and technology development that benefits Canadians.

Projects funded starting in 2004, related to adult education e-learning are as follows:

Leading Institution:
Mount Saint Vincent University, Nova Scotia, Project Leader: Looker, Ellen Dianne
Mechanism/Project Title: Canada Research Chairs Infrastructure Fund/*Atlantic Centre for the Study of Information technology in Society (ACSIS); a research facility on the use and impact of ICT on cultural and social groups*

Leading institution:
Athabasca University, Alberta, Project Leader: Kanuka, Heather
Mechanism/Project Title: Canada Research Chairs Infrastructure Fund/*Long-term changes occurring in distance education as a result of the use of ICT (E-learning).*

Leading institution:
Universite de Quebec Tele-Universite, Quebec, Project Leader: Bourdeau, Jacqueline
Mechanism/Project Title: Innovation Fund/ *Environnement distribué de Soutien aux Communautés de Recherche scientifique, virtuelles et internationales et à leur relève (SCORE)*

HRSDC = Human Resources and Development Canada
HRSDC developed a ***Learning Initiatives Program (LIP)*** Fund:
http://www.hrsdc.gc.ca/en/hip/lld/lssd/lip/lipdesc.shtml
The overarching objective is to promote a lifelong learning culture in Canada by encouraging and supporting partnership initiatives that will contribute to the development of a more results-oriented, accessible, relevant and accountable learning system.

Through the Office of Learning Technologies (OLT), The ***Community Learning Networks Initiative (CLN)*** was launched in late 1998. CLN supports pilot projects that demonstrate innovative and sustainable uses of existing network technologies to enhance learning and skills development opportunities in Canadian communities.

CSTD = Canadian Society for Training and Development
CSTD is a not-for-profit membership association dedicated to the profession of training, workplace learning and human resources development. With 1,900 current members, CSTD is the largest association in Canada dedicated to the profession of training and human resources development. Governed by a voluntary Board of Directors, CSTD offers its members a variety of opportunities and programs.

CSTD Awards program recognizes companies and individuals who have developed, produced and delivered original and innovative Canadian products in the field of Training & Development

The Learning Partnership
http://www.thelearningpartnership.ca/
The Learning Partnership is a not-for-profit, volunteer driven, professionally staffed organization dedicated to bringing together business, education, government, labour, policy makers and the community to develop partnerships that strengthen public education in Canada. More than three million students and teachers have participated in one or more TLP programs since its inception in 1993. As champions of public education in Canada, they aim to strengthen programs through research on best practices and policy discussions. They sponsor (among other programs) the National Technology Innovation Awards: http://www.thelearningpartnership.ca/NTIA/NTIA_2006.htm

DonEl Learning Inc.
http://www.itdl.org/sponsorship.htm
DonEl Learning Inc. publishes and covers the basic expenses of the International Journal of Instructional Technology & Distance Education (IJITDE)

IBM Canada
http://www.ibm.com/ca
Co-sponsors (in partnership with CANARIE and BCNET) of the Advanced Research Networks Day, Nov. 28, 2005, University of Victoria, Canada.

CANARIE
http://www.canarie.ca/
CANARIE is a not-for-profit partnership between industry, university and government. CANARIE fosters collaboration among educators, institutions, private businesses and all levels of government so all Canadians can harness the power of technology for learning. From building giant digital libraries that put rich learning materials at the fingertips of teachers and students to bridging Canada's vast geography and delivering effective distance education to remote and rural communities, CANARIE and its partners are ushering in a new era in lifelong learning. CANARIE's past funded projects on e-learning can be found here http://www.canarie.ca/funding/elearning/projects.html

BCNET
http://bcnet.ca/
BCNET is a not-for-profit society, collectively funded by BC's universities, federal and provincial governments. BCNET builds high-performance networks for British Columbia's research and education institutes. They also seek partnership with market and industry organizations. They currently sponsor a student contest for innovative applications that are being used over bandwidth networks.

Canadian Education Association (CEA)
http://www.cea-ace.ca/
Founded in 1891, the Canadian Education Association is a bilingual, federally incorporated non-profit organization. CEA initiates and sustains dialogue throughout the country influencing public policy issues in education for the ongoing development of a robust, democratic society and a prosperous and sustainable economy. CEA offers the Whitworth Award for Education Research.

The purpose of the Whitworth Award for Education Research is to honour an individual or research collaboration (research team or organization) that has made a noteworthy contribution to educational research in Canada. The award supports leadership in the identification of emerging issues and promotes innovative and collaborative research approaches.

The award was first presented as the CCRE-Whitworth Award in 1967 and was made possible through a generous financial donation by Dr. Fred Whitworth, a former Director of the Canadian Council for Research in Education (CCRE). The interest generated by Dr. Whitworth's donation is used to purchase a Canadian work of art for each year's winner. CCRE was disbanded on December 31, 1972. Since then, at the request of Dr. Whitworth, CEA has administered the award.

Social Sciences and Humanities Research Council of Canada SSHRC
http://www.sshrc-crsh.gc.ca/

Aid to Research and Transfer Journals Program – competition year 2004:

- Canadian Journal of Learning and Technology $37,050
- Journal of Distance Education $12,756
- The Canadian Journal for the Study of Adult Education $5,858
- The Canadian Journal of Higher Education $25,978

Image, Text, Sound and Technology (ITST) – 2004-05 competition:

Applicant/Candidat:
Asit Sarkar, University of Saskatchewan
Title/Titre:
Sustaining distributed communities of practice through socio-technical integration
Value/Valeur:
35,000
Duration/Durée:
1year/1 an

Applicant/Candidat :
James Parker, University of Calgary
Co-applicants/Cochercheurs :
Deborah Fels, Ryerson University
Douglas McCullough, University of Calgary
Gail Kopp, University of Calgary
Kenneth Loose, University of Calgary
Larry Katz, University of Calgary
Mary Scott, Alberta College of Art and Design
Richard Levy, University of Calgary
Santo Romano, Concordia University
Collaborators/Collaborateurs :

Lyn Bartram, The University of British Columbia
Michael Katchabaw, The University of Western Ontario
Title/Titre :
The IMAGINE network: interactive media, applied games, and implicit networked environments
Value/Valeur :
42,000
Duration/Durée :
1year/1 an

Applicant/Candidat :
Daniel O'Donnell, The University of Lethbridge
Co-applicants/Cochercheurs :
Elizabeth Solopova, University of Oxford
James Cummings, University of Oxford
Martin Foys, Hood College
Murray McGillivray, University of Calgary
Peter Baker, University of Virginia
Roberto Rosselli Del Turco, Universita Degli Studi di Torino
Title/Titre :
The digital medievalist project: a community of practice for image, text, sound and technology research
Value/Valeur :
27,490
Duration/Durée :
1year/1 an

Strategic Research Clusters Design Grants – 2004-05 competition:

Applicant/Candidat :
David Kaufman, Simon Fraser University
Co-applicants/Cochercheurs :
Carolyn Watters, Dalhousie University
Louise Sauvé, Télé-université
Ronald Owston, York University
Title/Titre :
Simulation and advanced gaming environments for learning
Value/Valeur :
30,000
Duration/Durée :
1 year/1an

Applicant/Candidate :
Susan O'Donnell, University of New Brunswick
Co-applicants/Cochercheurs :
Nadia Caidi, University of Toronto
Sylvia Barton, University of Northern British Columbia
W. Dean Care, University of Manitoba

Title/Titre :
Research on information and communication technologies with Aboriginal communities
Value/Valeur :
30,000
Duration/Durée :
1 year/1an

Doctoral and Postdoctoral Fellowships / Programme de bourses d'études supérieures du Canada, bourses de doctorat et bourses postdoctorales, 2005

Télé-université

Chabour, Salim **$17,500 / 17 500** 1 year/an
Vers un système d'analyse des plateformes e-learning

University of Calgary:
Cobb, B. Deanne **$17,500 / 17 500** $ 1 year/an
Computer-mediated communication and second language learners: self-efficacy and oral production ability

HRSDC's Learning Initiatives Fund Projects 2005:

University of Waterloo:

Building Computer-based Laboratory Practices into Psychology Research Method Courses
Principal Investigator: Myra Fernandes (Psychology)
Awarded: $9,120.00

Data-Structures Programming Animations including Classroom Learning Objects and Interactive Online Tutorials
Principal Investigator: Douglas Harder (E&CE)
Awarded: $8,000.00

Weblogs And Wikis to promote student engagement
Principal Investigator: Randy Harris (English)
Awarded: $10,000.00

Enhancing and Adapting ERS Courses with Multimedia
Principal Investigator: Mary Louise McAllister (ERS)
Awarded: $12,500.00

Visualization Learning Objects for Human Anatomy
Principal Investigator: Stephen Prentice (Kinesiology)
Awarded: $15,000.00

On-line Student-directed Deep Learning Environment
Principal Investigator: Joseph Sanderson, Kostadinka Bizheva (Physics)
Awarded: $15,000.00

Transferable Skills Acquisition and Retention in Blended and Wholly Online Course Environments
Principal Investigator: James Skidmore (GSS)
Awarded: $9,500.00

An Internet Support Structure for the Continuum and Fluid Mechanics Stream in Applied Mathematics
Principal Investigator: Marek Stastna, Kevin Lamb, Francis Poulin (Applied Math)
Awarded: $13,800.00

Asking "What's Going On?": Introduction of a DART Learning Object to enhance student learning in Anthropology
Principal Investigator: Pamela Stern (Anthropology)
Awarded: $13,234.00

Creating and Evaluating On-Line Instructional Activities to Teach Research Methods
Principal Investigator: Joanne Wood (Psychology)
Awarded: $15,000.00

Natural Sciences and Engineering Research Council Canada NSERC
http://www.nserc-crsng.gc.ca/

Title of project	Learning object repositories networks - LORNET
Competition Year	2001
Fiscal Year	2003-2004
Name of Person	Paquette, Gilbert
Institution	Université du Québec
Department	Télé-université (Montréal)
Province	Québec
Award Amount	$1,245,000
Instalment	1 - 6
Program	Research Networks
Selection Committee	Research Networks Sel Cttee
Research Subject	INFORMATION TECHNOLOGY : *Multimedia systems and networks*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	Calvert, Thomas Georganas, Nicolas Greer, Jim Kamel, Mohamed McCalla, Gordon Pierre, Samuel
Partners	Atsana Semiconductor Corp. Bank of Montreal Institute of Learning Bell Canada CAE Electronics Canal Savoir Centre de recherche informatique de Montréal

	Conference Board of Canada Credo Interactive Inc Etraffic Solutions Inc. Fakespace Systems Inc. FDO Axion Front Logic Inc. Hydro-Quebec Immersion Canada Inroad Solutions Inc. Institut international des télécommunications KnexaSolutions Inc. Le Groupe Infotel inc. Mentor Group Ministry of Advanced Education National Capital Institute of Telecommunications Neptec Design Group Ltd Netera Alliance New Media Innovation Centre OEone Corporation Pattern Discovery Software Systems Ltd Recombo Inc. Relcon Silicon Graphics (Canada) Inc Technologies Cogigraph Inc. Technology Enhanced Learning ThoughtShare Communications Inc. TRLabs Université du Québec Vestec Inc.

Title of project	Learning object repositories networks - LORNET
Competition Year	2001
Fiscal Year	2004-2005
Name of Person	Paquette, Gilbert
Institution	Université du Québec
Department	Télé-université (Montréal)
Province	Québec
Award Amount	$1,500,000
Instalment	2 - 6
Program	Research Networks
Selection Committee	Research Networks Sel Cttee
Research Subject	INFORMATION TECHNOLOGY : *Multimedia systems and networks*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	Calvert, Thomas Georganas, Nicolas Greer, Jim Kamel, Mohamed McCalla, Gordon Pierre, Samuel
Partners	Atsana Semiconductor Corp.

	Bank of Montreal Institute of Learning Bell Canada CAE Electronics Canal Savoir Centre de recherche informatique de Montréal Conference Board of Canada Credo Interactive Inc Etraffic Solutions Inc. Fakespace Systems Inc. FDO Axion Front Logic Inc. Hydro-Quebec Immersion Canada Inroad Solutions Inc. Institut international des télécommunications KnexaSolutions Inc. Le Groupe Infotel inc. Mentor Group Ministry of Advanced Education National Capital Institute of Telecommunications Neptec Design Group Ltd Netera Alliance New Media Innovation Centre OEone Corporation Pattern Discovery Software Systems Ltd Recombo Inc. Relcon Silicon Graphics (Canada) Inc Technologies Cogigraph Inc. Technology Enhanced Learning ThoughtShare Communications Inc. TRLabs Université du Québec Vestec Inc.

Title of project	The internet electronic library project
Competition Year	1999
Fiscal Year	2002-2003
Name of Person	Cameron, Robert
Institution	Simon Fraser University
Department	Computing Science
Province	British Columbia
Award Amount	$12,600
Instalment	4 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing & Information Sci. (H)
Research Subject	INFORMATION TECHNOLOGY : *Information systems design*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Developing intelligent tutoring software
Competition Year	2001
Fiscal Year	2003-2004
Name of Person	Kabanza, Froduald
Institution	Université de Sherbrooke
Department	Mathématiques-informatique
Province	Québec
Award Amount	$99,300
Instalment	3 - 3
Program	Collaborative Research and Development Grants
Selection Committee	RPP Internal Decision Cttee
Research Subject	INFORMATION TECHNOLOGY : *Information technology*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	Gauthier, Gilles Nkambou, Roger
Partners	Canadian Space Agency Le Groupe Infotel inc. Novasys Inc.

Title of project	Developing intelligent tutoring software
Competition Year	2001
Fiscal Year	2004-2005
Name of Person	Kabanza, Froduald
Institution	Université de Sherbrooke
Department	Informatique
Province	Québec
Award Amount	$99,300
Instalment	4 - 4
Program	Collaborative Research and Development Grants
Selection Committee	RPP Internal Decision Cttee
Research Subject	INFORMATION TECHNOLOGY : *Information technology*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	Gauthier, Gilles Nkambou, Roger
Partners	Canadian Space Agency Le Groupe Infotel inc. Novasys Inc.

Title of project	Design issues in game-like interactive multimedia
Competition Year	1999
Fiscal Year	2002-2003
Name of Person	Klawe, Maria

Institution	University of British Columbia
Department	Computer Science
Province	British Columbia
Award Amount	$29,400
Instalment	4 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing & Information Sci. (H)
Research Subject	INFORMATION TECHNOLOGY : *Software and development*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Use of abstraction levels in the design of intelligent tutoring systems
Competition Year	1998
Fiscal Year	2002-2003
Name of Person	Lelouche, Ruddy
Institution	Université Laval
Department	Informatique
Province	Québec
Award Amount	$12,705
Instalment	4 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing & Information Sci. (H)
Research Subject	ARTIFICIAL INTELLIGENCE : *Knowledge representation*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Intelligent teaching objects and virtual laboratories
Competition Year	2002
Fiscal Year	2002-2003
Name of Person	Mayers, André
Institution	Université de Sherbrooke
Department	Mathématiques-informatique
Province	Québec
Award Amount	$10,000
Instalment	1 - 2
Program	Discovery Grants Program - Individual
Selection Committee	Computing and Information Sciences - B
Research Subject	ARTIFICIAL INTELLIGENCE : *Knowledge representation*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*

Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Intelligent teaching objects and virtual laboratories
Competition Year	2002
Fiscal Year	2003-2004
Name of Person	Mayers, André
Institution	Université de Sherbrooke
Department	Mathématiques-informatique
Province	Québec
Award Amount	$10,000
Instalment	2 - 2
Program	Discovery Grants Program - Individual
Selection Committee	Computing and Information Sciences - B
Research Subject	ARTIFICIAL INTELLIGENCE : *Knowledge representation*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Exploring individualization in intelligent learning environments and in systems to access information
Competition Year	1997
Fiscal Year	2002-2003
Name of Person	McCalla, Gordon
Institution	University of Saskatchewan
Department	Computer Science
Province	Saskatchewan
Award Amount	$32,340
Instalment	6 - 6
Program	Discovery Grants Program - Individual
Selection Committee	Computing & Information Sci. (H)
Research Subject	ARTIFICIAL INTELLIGENCE : *Artificial intelligence (computer vision, use2603)*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	A virtual laboratory for web-based intelligent tutoring system authoring
Competition Year	1999
Fiscal Year	2002-2003
Name of Person	Nkambou, Roger
Institution	Université du Québec à Montréal

Department	Informatique
Province	Québec
Award Amount	$12,600
Instalment	4 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing & Information Sci. (H)
Research Subject	ARTIFICIAL INTELLIGENCE : *Knowledge representation*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Improving e-learning software with intelligent components
Competition Year	2003
Fiscal Year	2003-2004
Name of Person	Nkambou, Roger
Institution	Université du Québec à Montréal
Department	Informatique
Province	Québec
Award Amount	$14,000
Instalment	1 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing and Information Sciences - B
Research Subject	INFORMATION TECHNOLOGY : *Information technology*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*
Partners	*No partner*

Title of project	Improving e-learning software with intelligent components
Competition Year	2003
Fiscal Year	2004-2005
Name of Person	Nkambou, Roger
Institution	Université du Québec à Montréal
Department	Informatique
Province	Québec
Award Amount	$14,000
Instalment	2 - 4
Program	Discovery Grants Program - Individual
Selection Committee	Computing and Information Sciences - B
Research Subject	INFORMATION TECHNOLOGY : *Information technology*
Area of Application	HEALTH, EDUCATION AND SOCIAL SERVICES : *Learning and education*
Co-researchers	*No co-researcher*

Partners	*No partner*

International

The Joint Information Systems Committee (JISC)
http://www.jisc.ac.uk/index.cfm?name=home
JISC works with further and higher education by providing strategic guidance, advice and opportunities to use ICT to support teaching, learning, research and administration. JISC operates through a committee system whose membership consists of senior managers, academics and technology experts working in UK further and higher education. The JISC committees are supported by an executive, facilitating policy determination and the management of high quality JISC funded services and strategic development programmes.

With funding from the **UK's further and higher education funding councils**., JISC provides a centralised and co-ordinated direction for the development of the infrastructure and activities, in line with its 5-year strategy. JISC provides:

- New environments for learning, teaching and research
- Access to electronic resources
- A world-class network - JANET
- Guidance on institutional change
- Advisory and consultancy services
- Regional support for FE colleges - RSCs

For a list of current programs funded by JISC, visit the following URL: http://www.jisc.ac.uk/index.cfm?name=programmesbrowse

Among those, the e-Learning programme is 100% dedicated to e-learning, but there are other programs and projects that touch on adult e-learning as well (Support for e-Research, eLib: electronic Libraries program, Personal Learning Environments, ELP= Enhancing Learner Progression, etc.)

The European Commission
http://europa.eu.int/comm/index_en.htm
The e-learning initiative of the European Commission seeks to mobilise educational and cultural communities, as well as, the economic and social players in Europe, in order to accelerate change in the education and training systems for Europe's move to a knowledge-based society. A list of its programmes can be found here,
http://europa.eu.int/comm/education/programmes/elearning/index_en.html

INFOR
http://www.consorzio-infor.it/index.htm
INFOR is a partnership of more than 250 public and private organizations located in Piemont, Lombardia and d'Aosta Valley (Italy), offering training programs and research. INFOR's objective is to be recognized as a pool of managerial culture, which is connected to the new emerging tendencies in the theory and practice of management. They are certified

ISO 9001 and ISO 2000. INFOR is one of the funding partners in project SOLT http://www.solt.ccg.pt/

Appendix 10: Key people in Canadian E-Learning

Key people in Canadian E-Learning		
Name	**About**	**Contact**
Anthony (Tony) Bates	Dr. Tony Bates is President and CEO of Tony Bates Associates Ltd, a private company specializing in consultancy and training in the planning and management of e-learning and distance education. He is also part-time Chair of Research for e-Learning at the Open University of Catalonia in Barcelona, Spain. He is also on the Academic Advisory Board of the Volkswagen Auto Uni, based in Germany. He was Director of Distance Education and Technology in the Continuing Studies Division of the University of British Columbia, Vancouver, Canada from 1995 to 2003 and also Research Team Leader of MAPLE, the Centre for Research for Managing and Planning Learning Environments in Education at UBC. From May 2004 to September 2005, he was part-time Cisco Systems Chair of e-Learning at the Southern Alberta Institute of Technology in Calgary, where he led a strategic planning process for e-Learning throughout the Institute. From 1990 to 1995, he was Executive Director, Research, Strategic Planning and Information Technology, at the Open Learning Agency of British Columbia. Prior to that, he was Professor of Educational Media Research at the British Open University where he worked for 20 years as one of the founding members of staff. He is the author of nine books, including his latest, 'Technology, e-Learning and Distance Education', published in 2005 by Routledge. Other books include 'Managing Technological Change: Strategies for College and Universities Leaders', and (with Gary Poole) 'Effective Teaching with Technology in Higher Education', both published by Jossey-Bass, and 'National Strategies for e-Learning' published by UNESCO. His research groups at the UKOU, OLA and UBC published over 350 papers in the area of distance education and the use of technology for teaching. He is on the editorial board of six	Tony Bates, Director, Distance Education and Technology, Continuing Studies, The University of British Columbia Distance Education and Technology, Room 1170, 2329 West Mall, University of British Columbia, Vancouver, V6T 1Z4 Tel.: (1)-604-822-1646 Fax: (1)-604-822-8636 e-mail: tony.bates@ubc.ca Dr. A.W. (Tony) Bates, President and CEO, Tony Bates Associates Ltd, 2777 West 8th Avenue Vancouver, B.C., Canada V6K 2B7 Tel.: (1)-604-733-9449 e-mail: tony.bates@ubc.ca Web: http://tonybates.ca

Key people in Canadian E-Learning		
Name	**About**	**Contact**
	journals specializing in distance education and educational technology. He has worked as a consultant in over 30 countries. Clients include the World Bank, OECD, UNESCO, national ministries of education, and several U.S. state higher education commissions He has a Ph.D. in educational administration from the University of London, England. He was awarded the degree of Doctor Honoris Causa by the Open University of Portugal in 1995, Doctor of Letters, Honoris Causa, from Laurentian University, Canada, in 2001, and Doctor Honoris Causa from Athabasca University, in June 2004, Doctor of Social Sciences, honoris causa from the Open University of Hong Kong in December 2004, and Doctor Honoris Causa from the Open University of Catalonia, Spain, in June, 2005.	
Benjamin Levin	Dr. Benjamin Levin's research involves learning more about how to increase educational success for all students and connecting this knowledge to policy making through strong partnerships. His research aims to bridge the gap between education research and evidence with education policy. While Canada's education system continues to score high marks in international rankings, socio-economic factors have kept many students from reaping the benefits of this standing. Many people, such as Aboriginals, recent immigrants, visible minorities, and those with disabilities, do not fare as well within the Canadian educational system as does the population as a whole. For Dr. Levin, the key to addressing this disparity lies with connecting education research and evidence such as failure rates with public policy and educational practice.	Benjamin Levin Canada Research Chair in Leadership and Educational Change University of Toronto Tier 1 - January 1, 2005 Social Sciences and Humanities (416) 325-2181 Ben.levin@edu.gov.on.ca Web site address http://Home.cc.umanitoba.ca/~levin
Brian Lamb	Brian Lamb is a project coordinator and instructor at The University of British Columbia. He got his BA from the University of Saskatchewan, and his MA from McGill (both in English). His professional interests	Email: brian.lamb@ubc.ca Phone: 604.827.5657 Office of Learning Technology

Key people in Canadian E-Learning		
Name	**About**	**Contact**
	concern reusable online media and personal publishing tools such as weblogs and wikis: http://careo.elearning.ubc.ca/weblogs/brian.	209 - 6356 Agricultural Road Vancouver, B.C. Canada V6T 1Z2 Fax: 604-822-6998 http://www.elearning.ubc.ca http://www.olt.ubc.ca
Chuck Hamilton	Chuck Hamilton is the Manager of Learning Technology at IBM Canada's Innovation Center in Vancouver and is a supporting member of IBM's world wide Learning Solutions (http://www.ibm.com/learning) team. Mr. Hamilton's career spans 20 years, in IT consulting and management and he considered one of Canada's leaders in the blending of learning and technology. Well known in education and training circles, he supports and leads a number of internal and external efforts in support of advancement of learning and human capital development. The intersection of learning and technology crosses every industry and utilizes a vast array of technologies. Mr. Hamilton speaks at approximately 15 conferences a year promoting the role of IBM in learning and technology and has published several papers on e-learning trends and direction. His areas of expertise include: • e-Business e-Learning • e-Business Dynamic Workplace • Smart Communities • Evolution of Learning Technology • The Future of Learning	Chuck Hamilton IBM Vancouver IBM Canada Corporate Offices IBM Canada Ltd. 3600 Steeles Avenue East Markham, Ontario L3R 9Z7 Tel: (905) 316-5000 Fax: (905) 316-2535
Claire IsaBelle	Claire IsaBelle is Associate Professor with the Faculty of Education, University of Moncton, New Brunswick. She is the co-creator of a website of resources for teachers and student found at http://creatic.ca. Claire IsaBelle has long been the director of the CDÉF-TIC* research laboratory (*Conception, Développement, Évaluation et Formation avec les TIC). Her research focuses on ICT-based	http://www.cea-ace.ca/foc.cfm?subsection=map&page=bio&subpage=cis

Key people in Canadian E-Learning		
Name	**About**	**Contact**
	professional-development strategies for educators and school administrators, the development of hypermedia teaching resources, the evaluation of telelearning information systems (3-D immersion environment) and the use of laptops for teaching and learning.	
David Livingstone	David Livingstone is Canada Research Chair in Lifelong Learning and Work. As the Canada Research Chair in Lifelong Learning and Work, David Livingstone is analyzing the entire spectrum of adult learning, from formal to informal learning. His key objectives are to provide analyses of learning and work relations grounded on empirical documentation, to establish a leading research centre and train much-needed researchers and policy analysts and to contribute to more effective learning and work linkages. Professor Livingstone is now conducting one of the largest independent national surveys ever carried out in Canada. The survey data, combined with 12 strategic case studies, will be used to compare changing learning and work relations across regions and sectors, as well as in different socio-demographics. Survey research and related secondary analyses of employment data are also providing profiles of the incidence and distribution of adult learning. In addition, Dr. Livingstone is developing a world-class library collection on learning and work, together with a data compendium and annotated bibliographies to guide the further development of learning and work studies. http://leo.oise.utoronto.ca/~dlivingstone/	David Livingstone University of Toronto Tier 1 - October 1, 2003 Social Sciences and Humanities (416) 923-6641 ext. 2703 dlivingstone@oise.utoronto.ca http://leo.oise.utoronto.ca/~dlivingstone/
David Porter	David Porter is the Executive Director of BCcampus (http://www.bccampus.ca). BCcampus is building a comprehensive web interface of educational opportunities offered by BC's post-secondary institutions so learners will be able to plan an academic itinerary using multiple providers of programs, courses and accreditation. Porter has worked in both public and private-sector organizations in education and has been a leader in industry-based projects throughout the world. He brings with him a	BCcampus http://www.bccampus.ca 200—555 Seymour Street Vancouver, BC V6B 3H6 Tel: 604-412-7657 dporter@bccampus.ca Tel: 604.412.7734 and 120—645 Fort Street, Victoria, BC, V8W 1G2 Tel: 250-405-4000

Key people in Canadian E-Learning		
Name	**About**	**Contact**
	wealth of academic, instructional development, and information management knowledge and experience.	
David Tosh	David Tosh is a Ph.D. student at the University of Edinburgh researching ePortfolios, weblogs, social networking and associated technologies. He is the project manager and co-creator of Elgg and established and maintains the e-portfolio reseach and development community - ERADC. Currently he is a visiting scholar at UBC until April 2006.	http://elgg.net/dtosh/
Douglas MacLeod	Douglas MacLeod is Associate Director of Research and Knowledge Mobilization, Canadian Council on Learning.	1805-701 West Georgia Street P.O. Box 10132 Vancouver, BC V7Y 1C6 Tel: (604) 662-3101 dmacleod@ccl-cca.ca
Gale More	Director of KMDI/UT (Knowledge Media Design Institute/University of Toronto) As a sociologist and sociologist-designer, Gale's primary interests for the past 15 years have been on the social impacts of a variety of information, communication and collaboration technologies in everyday life, and on bringing an understanding to people's experience of technology into design practice. From 1992-1995, Gale was head of social science research for the Ontario Telepresence Project, a $6M industry-university cross-disciplinary consortium supported by the Province of Ontario and a number of firms and corporations. Prior to 1992, Gale worked in the health care field for a number of years. More recent research includes, the HIVE. a study of the role of ICT in the coordination and management of home-based health care, a CITO/IBM funded project on how people experience complex software and an international project on regional innovation systems. She is a co-investigator of KMDI's Bell University ePresence Laboratory that has designed and prototyped an interactive webcasting system that enhances the experience	Gale More Director of KMDI/UT Telephone: 416-978-4655 Fax: 416-978-KMDI

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	of 'presence' for remote participants (from http://lizzy.iit.nrc.ca/Iit_Kmdi/public/wiki.cgi?GaleMoore)	
Gary Stairs	Gary Stairs is president of the New Brunswick chapter of the Canadian Society for Training Development, and president of Red Hot Learning Inc. based in Fredericton.	Red Hot Learning Inc., Fredericton Telephone: (506) 454-3000 Fax: (506) 460-8084 gstairs@redhotlearning.com
George Siemens	George Siemens is an instructor at Red River College (RRC) in Winnipeg, Manitoba, Canada. He is interested in the potential of technology to transform learning and society. He is convinced that existing educational perspectives need to be revisited to meet the needs of "today students". He maintains a web site dedicated to e-learning, Elearnspace found at http://www.elearnspace.org/, a blog dedicated to elearning found at http://www.elearnspace.org/blog/ and a web site devoted to creating a learning theory reflective of how learners learn today, Connectivism, at http://www.connectivism.ca/	http://www.elearnspace.org/
Gilbert Paquette	Gilbert Paquette holds the Research Chair at LICEF http://www.licef.teluq.uquebec.ca/ Achievements: Quebec Minister of Science and Technology (1982-1984). His Research Involves the study of the theory, the methods and the technology of distance learning. Research Relevance: Provide the opportunity for more people to learn while working or retraining, or simply to gain access to quality training. Chair is at: Université du Québec (Télé-université)	Gilbert Paquette Science Director, LICEF Research Centre (514) 840-2747, poste 2292 gpaquett@licef.teluq.uquebec.ca
Griff Richards	Mr. Richards confesses to be a practicing educational technologist with over twenty years experience building systems to assess and enhance human performance. Much of that time was spent in R & D of interactive computer, video and simulation systems (NRCC, CFTS, CAE, ACCESS Network,	Griff Richards Athabasca University, University of Alberta, SFU, BCIT griff@sfu.ca ; http://elgg.net/griffr/

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	BCIT), some spent managing courseware production facilities (Westerra Institute, Justice Institute) and on-line learning (BCIT). Griff is a graduate of the Banff School of Advanced Management and has developed Ed Tech, a pragmatic set of tools to help individuals and organizations attain their goals. Currently he is seconded from the BCIT Technology Centre as Research Integration Officer to the TeleLearning Network of Centres of Excellence.	
Harold Jarche	Harold Jarche is an independent consultant based in Atlantic Canada. http://www.jarche.com/ and maintains an e-learning blog.	Address: 78 Bridge Street; Sackville; New Brunswick; Canada; E4L 3N9 Tel: (506) 536-0516 Jarche.Consulting@gmail.com
Jamie Rossiter	Director, Learning Program, CANARIE Inc.	Director, Learning Program CANARIE Inc 110 O'Connor St., 4th floor Ottawa, Ontario K1P 1H1 (613) 995-4335 (613) 943-5443 fax jamie.rossiter@canarie.ca
Jutta Treviranus	Ms. Treviranus is Interim Director, Resource Centre for Academic Technology RCAT and Adaptive Technology Resource Centre ATRC the Univesity of Toronto. Areas of interest include, technology assisted inclusive teaching and learning, skilled use of the computer as a tool by people with disabilities, accommodating individual skills, needs and preferences by transforming the way information is displayed and controlled, authoring tools that are accessible and create accessible content and accessible rich media.	http://www.utoronto.ca/atrc/staff/treviranus/treviranus.html Resource Centre for Academic Technology University of Toronto, 4th Floor 130 St. George St. Toronto, Ontario Canada, M5S 3H1 Tel: (416) 978-5240 ; FAX: (416) 971-2629 jutta.treviranus@utoronto.ca
Ken Reimer	Ken Reimer is the founder and president of LearnStream Inc., a leading interactive	LearnStream Inc. Address: 414 York St.,

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	courseware design firm based in Fredericton, New Brunswick. Combining his background in information technology, adult education and business management, he has built a career and a successful business around online learning technologies. Prior to LearnStream, he was vice president Research & Development and president of the development division of FirstClass Systems, and previous to that taught computing at SAIT, Mount Royal College and the University of Calgary. Mr. Reimer has worked in the IT industry for over 15 years. Mr. Reimer's educational background includes a BSc and BEd from the University of Toronto, an MBA from the University of Calgary and an MEd in learning technologies from Simon Fraser University. His creative influence has led to the production of over 500 interactive courseware projects over the last five years. He has been recognized for his work by being one of three Canadians to receive AV Video & Multimedia's Top 100 Producers award in San Francisco. He was presented the 2000 Canadian New Media Award for Lifetime Achievement.	Fredericton, New Brunswick E3B 3P7, Canada Phone: 506-447-4900 Fax: 506-447-4911
Martin Brooks	Dr. Martin Brooks is a Research Council Officer working with the National Research Council Canada Institute for Information Technology (IIT).	Research Council Officer Computational Video NRC Institute for Information Technology 1200 Montreal Road Building M-50, Room 369 Ottawa, ON K1A 0R6 Telephone: +1 (613) 990-7661 Fax: +1 (613) 952-7151 E-mail: Martin.Brooks@nrc-cnrc.gc.ca
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	University Director, CanCore Initiative Dr Friesen has been developing and studying web technologies in educational contexts since 1995. Norm is currently employed at Simon Fraser as Director of the CanCore Learning Object Metadata Initiative, a project whose technical recommendations have been adopted internationally. Dr. Friesen is also a SSHRC Post Docotoral fellow at the School of Communication at Simon Fraser University and is the principal investigator in the three-year "learningspaces.org" project. In addition to authoring dozens of articles and reports, he has produced several editions of books on the instructional use of WebCT and the implementation of the IEEE "Learning Object Metadata" standard.	
Randy Garrison	Dr. Garrison is the Director of the Learning Commons at University of Calgary, Alberta. On May 31, 2004 Dr. Garrison, , received the 2004 Research Award from the Canadian Society for Studies in Higher Education (CSSHE). This is the most prestigious honour bestowed by the CSSHE as it recognizes a practicing scholar in mid-career with an established reputation for publishing outstanding research in any aspect of Canadian postsecondary education. Garrison has made distinguished and outstanding research contributions with respect to the understanding of critical thinking, self-directed learning and the use of communication technologies. Dr. Garrison received an award in recognition of service for his scholarly publications by the National University of Continuing Education Association and, in 1988, he was awarded the Elizabeth Howell Award for outstanding scholarly publications. In 1990, he received the Charles A. Wedemeyer Publications Award for his book *Understanding Distance Education: A Framework for the Future* - a significant award in the field of Distance Education. In 1998 he was bestowed the Canadian Regional Award for Outstanding Contributions to Distance	Randy Garrison Director/Professor 403-220-6764 garrison@ucalgary.ca

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	Education by the Instructional Telecommunications Council, an affiliate of the American Association of Community Colleges. In 2000, Dr. Garrison received the Journal Award from the Canadian Journal of University Continuing Education, which recognizes excellence in an article.	
Rory McGreal	Dr. Rory McGreal is Associate Vice President, Research at Athabasca University . Previously, he was the executive director of TeleEducation New Brunswick, a province-wide bilingual (French/English) distributed distance learning network. Prior to that, he was responsible for the expansion of Contact North (a distance education network in Northern Ontario) into the high schools of the region. His Ph.D. degree (1999) in Computer Technology in Education at Nova Southeastern University 's School for Computer and Information Science was taken at a distance using the Internet. Rory was the founder of the world's first e-learning website for TeleEducation NB and one of the world's first metadata learning object repositories, TeleCampus. He has been the leader in the development of the CanCore metadata implementation profile for implementing the IEEE LOM international standard for learning object metadata. In the past, he has worked in Canada as a teacher and teacher representative, and abroad in the Seychelles, the Middle East and Europe in various capacities as a teacher, union president, ESL technological training co-ordinator, instructional designer, language and computer laboratory co-ordinator and educational advisor. He has served on the Board of the TeleLearning Research Network of Centres of Excellence, the Commonwealth of Learning's Knowledge Management Group and the Education Steering Committee for CANARIE, Canada 's broadband research network. In 2002, he was honoured as recipient of the Wedemeyer Award for Distance Education Practitioner. Dr. McGreal has published numerous articles on e-learning. In 2004 he	Rory McGreal Associate Vice-President, Research, Athabasca University Email: rory@athabascau.ca Phone: (780) 675-6821 Fax: (780) 675-6722

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	edited the book *Online Education Using Learning Objects*.	
Stephen Downes	Stephen Downes is a leading voice in the areas of learning objects and metadata as well as the emerging fields of weblogs in education and content syndication. He is a Senior Researcher at the National Research Council, Institute for Information Technology's e-Learning Research Group. Stephen is perhaps best known for his daily research newsletter, Online Learning Daily (OLDaily), which reaches thousands of readers across Canada and around the world. His work also includes the development of educational content syndication systems such as Edu_RSS and DLORN and the design of a digital rights management system for learning.	http://www.downes.ca/
Terry Anderson	http://www.athabascau.ca/html/staff/academic/terrya.html Professor and Canada Research Chair in Distance Education, Athabasca Universty, Dr. Anderson is involved as Principle Researcher in a variety of research and development initiatives including: Editor of International Review of Research in Distance Education EduSource Pan Canadian Network of Learning Object Repositories Campus Alberta Repository of Education Objects (CAREO), Alberta Supernet Research Network. He teaches and advises students in the world's largest Masters of Distance Education program at Athabasca University. He also serve on advisory committees with the Alberta and Canadian Governments, and serve on editorial boards of the following Journals: Journal of Distance Education Internet in Higher Education International Review of Research in Open and Distance Learning Canadian Journal of Educational Communication Journal of Interactive Media in Education	Terry Anderson http://www.athabascau.ca/html/staff/academic/terrya.html Athabasca University, 320 10030 107 St. Edmonton, AB Canada T5J 3E4 Email: terrya@athabascau.ca Phone: (780) 497-3421 Fax: (780) 497-3415
Tom Carey	Dr. Tom Carey is a Professor of Management Science in the Faculty of Engineering.	tcarey@uwaterloo.ca

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	Dr. Carey previously served as the founding Director of Waterloo's Centre for Learning and Teaching Through Technology, a university-wide strategic innovation unit. Before returning to Waterloo - where he did his M. Math and Ph.D. degrees in Computer Science - Dr. Carey held other university posts as Executive Director of Graduate Program Development and Co-Director of Teaching Support Services, and was one of the founders of Human-Computer Interaction as an academic discipline in Canada. He also holds a B.A. from the University of Windsor, where he was awarded a Woodrow Wilson Fellowship and an NSERC Centennial Science Scholarship. Dr. Carey received a Curriculum Contribution Award from the Association of Computing Machinery's Computer-Human Interaction group for his pioneering contributions to curriculum development, and received various awards for research papers and corporate-university partnerships.	

Appendix 11: Bibliography

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