

The Learning Web

Stephen Downes

National Research Council

May 29, 2002

Prelude: The Future

- Remarks on the Schell School Project
 - <http://www.saskschools.ca/~schell/>
 - This is the future of online learning
 - It is based on active participation, not static content, and promotes interaction
 - It is dynamic, not frozen in time
 - It is interactive, involves teamwork
 - It is real – students work in the community

Two Crises in Learning

- The present crisis – the apparent failure of e-learning on so many fronts:
 - The closure of the U.S. Open University
<http://www.distance-educator.com/dn/dnews.php4?action=detail&id=6209>
 - The U of Michigan program in China that attracted exactly two students
<http://chronicle.com/free/2002/05/2002051501u.htm>
 - Rising costs of LCMSs and learning content
<http://chronicle.com/free/2002/03/2002031901u.htm>

Two Crises in learning (2)

- The future crisis – meeting educational demands of the future
 - The traditional school less relevant to students:
OU study: students find universities too expensive, too inconvenient, and a bad atmosphere for studying
<http://education.guardian.co.uk/universityaccess/story/0,10670,637574,00.html>
 - Massive training needs in the present workforce
(Larose at CADE, no URL)

Failure, and More Failure

- Online attrition rates at 80%
<http://tojde.anadolu.edu.tr/tojde6/articles/jim2.htm>
- Huge sums spent on development with no hope of return
<http://globalarchive.ft.com/globalarchive/article.html?id=020425002104>
- Administrative nightmares – registration, accreditation, access to infrastructure
<http://www.distance-educator.com/dn/dnews.php4?action=detail&id=6082>
- Copyright issues, standards confusion, more
<http://www.idg.net/go.cgi?id=618976>

What I Think...

- Unless the educational system adapts, students will bypass it in increasing numbers – this will accelerate when students discover that the *already know* the content universities are charging \$5000 per year to teach them
- We are *already* seeing an increase in private education activities

The Issue

- “Access to knowledge is the superb, the supreme act of truly great civilizations” – Nobel prize winner Toni Morrison
<http://informatics.buffalo.edu/faculty/ellison/quotes/ifquotesm.html>
- But the dominant models of online learning being promoted today have their basis in restricting access to knowledge

Where are the Problems?

- Content and copyright – clinging to old publication models (and prices) c.f. Napster and Eminem <http://news.com.com/2100-1023-923472.html>
- Huge and increasing entry barrier – not merely cost, but the training required to use new learning management systems
 - How do you add *Merlot* content to your WebCT course? Who knows?
 - How do you publish learning content for use everywhere? Who knows?

An Analogy - 1994

- In 1994 the only way to get online was through a large information service such as CompuServe or Genie – major barriers to setting up your own, major fees for access
- But in 1994 access to information and interaction became almost free with the advent of the world wide web – anyone could read anything, anyone could publish

2002 – Enter the Learning Web

- Based on the concept of the semantic web

<http://www.w3.org/2001/sw/>

"The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation."

- Core concept: structured descriptions of entities

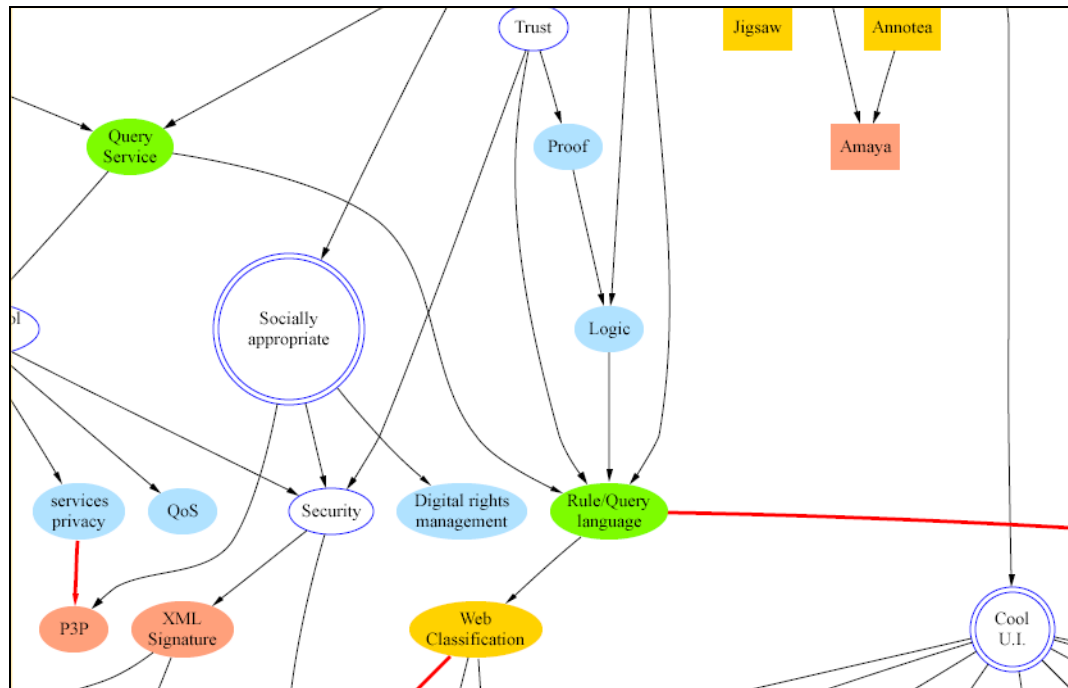
<http://www.xml.com/pub/a/2000/11/01/semanticweb/> and see also

<http://infomesh.net/2001/swintro/>

- Ancillary concept: the sharing of this information across a distributed network of computers

A Web of Knowledge...

- See <http://www.w3.org/2001/04/roadmap/all.svg>



The Learning Web

- Represent entities via the Semantic Web
 - E.g., specific RDF documents for learning objects, users, digital rights, comments and evaluations, instructors, etc.
- Distribute this information in such a way that each entity is responsible only for its own information (break up the LCMS!)
- Create a set of simple tools for distributed information creation and access

Example: Content Producer

- Content producers simply produce content and make it available on their own server
 - Content is described with metadata
 - External services, such as rights management or classification, are *pointed to* in the metadata
 - Information *about* the content is harvested by search (or metadata repository) services
 - Users access content directly from the producer

Example: Learner

- Learner works with a simple tool, the *Learning Object Browser*
 - The browser conducts searches through metadata repositories
 - The browser requests content directly from the content producer's server
 - The browser interacts with third parties for things like payment, reporting of grades, etc.

Learning Standards

- Stop being monolithic
- Standards are devised and used ‘on the fly’ as needed
- Standards are established as a matter of agreement between user and producer
- Standards can be (optionally) mapped to core standards such as IMS, SCORM or CanCore

