

New Directions in Learning

Community Learning Networks

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We can, as we understand the prehistoric, understand the future, by reading the artifacts.



Outline

- Knowledge – what is knowledge, how is knowledge changing, what does that mean for learning
- Learning – what are learning objects, how are they used, how should we think of them
- Community – learning environments, practical steps

Learning a New Way

- The future of learning is written in the future of knowledge
- We are in a period of transition – moving from the Modern era to the Information era
- What constitutes knowledge is changing at a basic level
- And so, too, therefore, learning

Knowledge

- To the ancient Greeks – was a matter of understanding the essence of things, their inherent qualities
- In the modern age (post-1600s) – was a matter of understanding the parts of things, what they were made of, how they fit together
- In the information age – is a matter of understanding how things work together, how they are organized, how they inter-relate

Collections

- We have always (well, since the 1600s) thought of knowledge and learning as accumulations of facts, data.. Think of things like libraries, encyclopedias
- Learning was therefore a matter of accumulating those fact... getting the basics, learning your ABCs... collecting subjects, courses, competencies
- Our learning is structured this way – organized by topic, subject, program, class

Relations

- Things are changing – gradually
- One way to look at – knowledge is gradually shifting from knowledge of a domain to knowledge of a function
- For example – you don't study geology – you study how to be a geologist
- Kuhn (*Structure of Scientific Revolutions*) – learning a subject is learning how to solve the problems at the end of the chapter

Personal Knowledge

- Another way to look at it...
- Knowledge was thought of as having a bunch of sentences in the brain, that you could recall as needed
- Today, knowledge is thought of more along the lines of a skill – Gilbert Ryle – a disposition to behave (*Concept of Mind*) – Michael Polanyi – tacit knowledge (*Personal Knowledge*)

Experience

- I describe it this way – knowledge is experience
- That is – having the knowledge of a master isn't merely being in possession of the *same facts* as the master
- Rather – it is having the same mental *organization* as the master
- And this has to be *grown* by having the same (or relevantly similar) *experiences* as the master

Constructivism

- Knowledge is not passively received
- It is actively built up (*constructed*) by the learner
- The learner is adaptive and seeks to organize experience, not (merely) to discover an objective ontological reality
- Pask - Individuals as coherent psychological processes capable of engaging in conversations (*Conversation, Cognition, and Learning*)

Online Learning

- Characterized by the use of information and communications technology (ICT) to facilitate learning
- vs. e-learning, which also includes computer-based training (CBT)
- Two major aspects – online learning *content*, and online learning *environments*

Online Learning Content

- The dominant paradigm (that nobody uses) – *learning objects*
- IEEE's Learning Technology Subcommittee: "any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning."
- Wayne Hodgins – learning objects are like Legos, that can be put together in different ways
- David Wiley – learning objects are like atoms

The Emerging Consensus

- Learning objects, LOM, learning design
- Enterprise architecture, common services, federated search
- Mostly based on Java, web services
- Commercial orientation, bundles and packaging, institutional purchasers, site licensing

Problems With the Consensus

- Dissatisfaction, low uptake of learning objects, the reusability paradox
- High barrier to adopting enterprise systems, supporting federated search (the closed marketplace)
- Issues with Java, web services
- Soft market for 'content', DRM issues

Stages

- Technology advances in stages...
- First Stage: emulating the old technology
 - The ice box for example
 - Or the horseless carriage
- Second Stage: leveraging the new tech
 - Ice-makers, Mr. Freeze, the Zamboni
 - Coaches, transports, 747s

Analysis

- Reading the artifacts...
 - Institution vs. the individual
 - Centralization vs. decentralization
 - Push vs Pull
 - Open vs closed

The Big Idea

- E-learning not as static, course-based resources assembled and delivered by institutions...
- But rather, e-learning as dynamic, unstructured stream of learning resources obtained and organized by learners...
- E-learning as a *conversation* (*Cluetrain Manifesto*)
<http://www.cluetrain.com/>

The Palm Tree and the Horse

Learning objects
not as collections
or aggregations,
but as elements in
an ecosystem



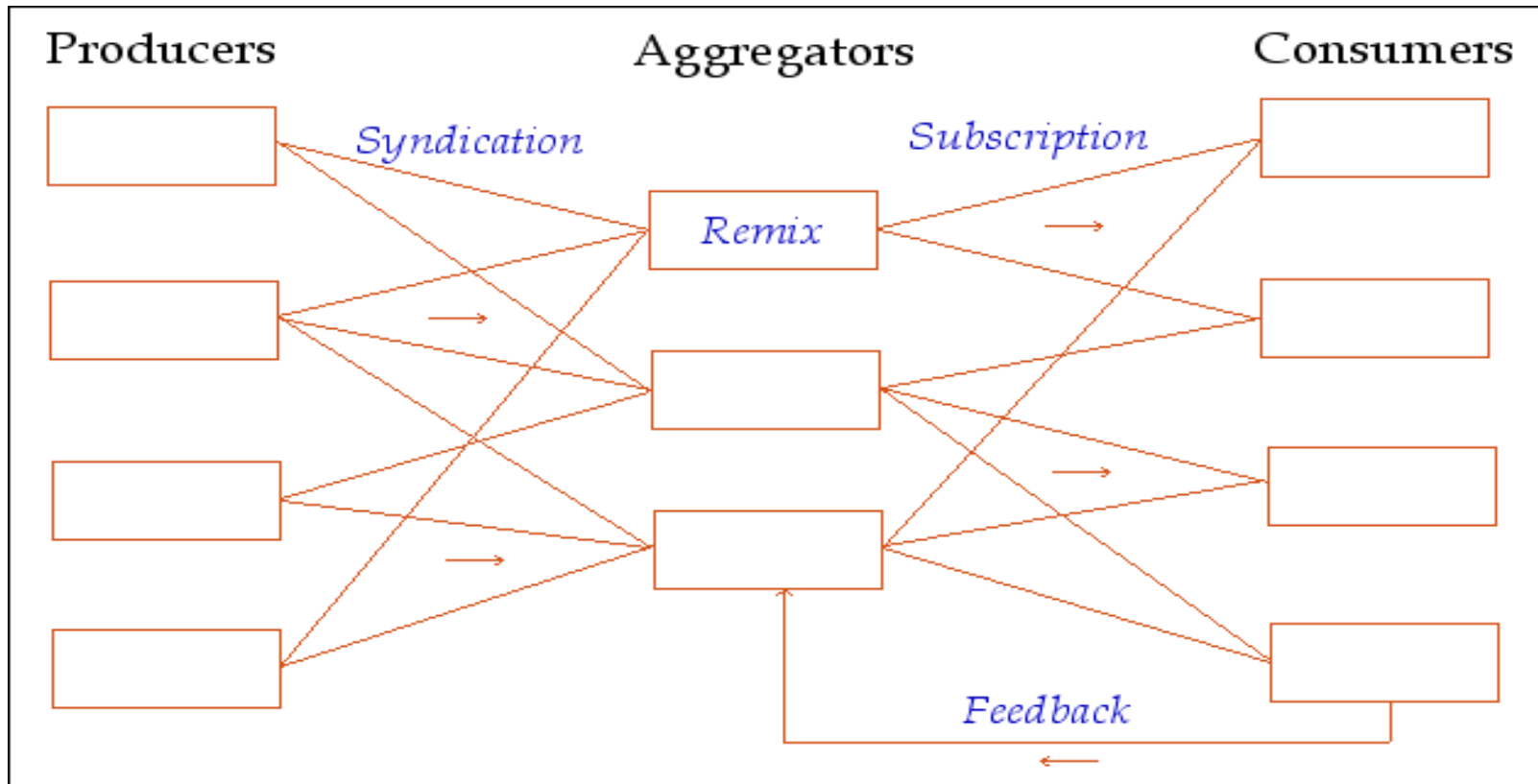
Conversations

- Weblogs... four million (or so) angst-ridden teen-aged girls can't be wrong
- RSS – we can't agree on what it's called, much less how it should be designed, but it works
- Open Archives Initiative – the radical proposal that people who pay for content should be allowed to read it
- Instant Messaging, Wiki, PostNuke, more...

Aggregate, Reaggregate

- While federated search is a single-layered search (the library mode), the harvest search is multilayered
- Think, for example, of *Google Hacks*
- My own contributions... Edu_RSS
http://www.downes.ca/xml/edu_rss.htm and DLORN
<http://www.downes.ca/cgi-bin/dlorn/dlorn.cgi>
- Syndication, realized... <http://www.bloglines.com>
<http://www.technorati.com> <http://www.feedster.com>

The Network is the Search



Community

- ‘Learning Environments’... an application or social based framework into which learning resources are ‘fed’
- Examples: simulations, games, performance support systems
- Long-term – ubiquitous e-learning that follows the learner app to app, place to place (m-learning)

Staging the Future

- The ‘learning browser’ – a learner based e-learning tool accessing multiple feeds from multiple providers...
- A more-or-less consistent content format using XML, XSLT, Javascript, CSS <http://www.downes.ca/dnd>
- Returning to the idea of ‘object oriented’ learning objects – and O-XML

Changes

- Linear → Multi-threaded
- Content Delivery → immersive, interactive
- Static, paced → dynamic, unpaced
- Demonstration → experience
- Learning objectives → learner goals
- Motivation → desire

- ***Federated Search***
 - Large repositories join a network
 - Searches are propagated through the network
 - No ranking or 3rd part interference allowed
- ***Harvest Search***
 - ‘Aggregators’ harvest from everyone
 - Single search point
 - Expect thinks like ratings, PageRank

<http://scholars.google.com>

Practical Steps

- Eschew Big Ed – spending time and money on major LMS systems is like trying to patch the Titanic
- If you must use such systems...
 - Use open source ones, like Moodle
 - Expect and demand *true* content syndication
 - If it requires specific software (yes, even Microsoft) to run, it's broken

Practical Steps (2)

- Start building small pieces...
 - Empower yourselves, your staff, with blogs and wikis (or even PostNuke or Drupal)
 - Learn XSLT and start using it...
 - Be sure you offer RSS feeds for all your content
 - Register your RSS in places like DLORN

Practical Steps (3)

- Embrace Open Access – use Creative Commons, open source software (Apache, MySQL, Firefox, Thunderbird, more...)
- Be ready for the next wave... read books like *Six Degrees*
<http://www.wwnorton.com/catalog/fall03/032542.htm>
- Play video games and learn about self-directed environments (then read some Seymour Papert)
<http://www.papert.org/>

<http://www.downes.ca>