



**NRC-CNRC**

Institute for  
Information  
Technology

# *New Technology Supporting Informal Learning*



*Stephen Downes*

*May 14, 2009*

*Braga, Portugal*

**NRC-CNRC**

Institute for  
Information  
Technology



# *1. Context*

Context

# Games & Simulations

- ✧ Games and simulations are terrific



Context

# Games & Simulations

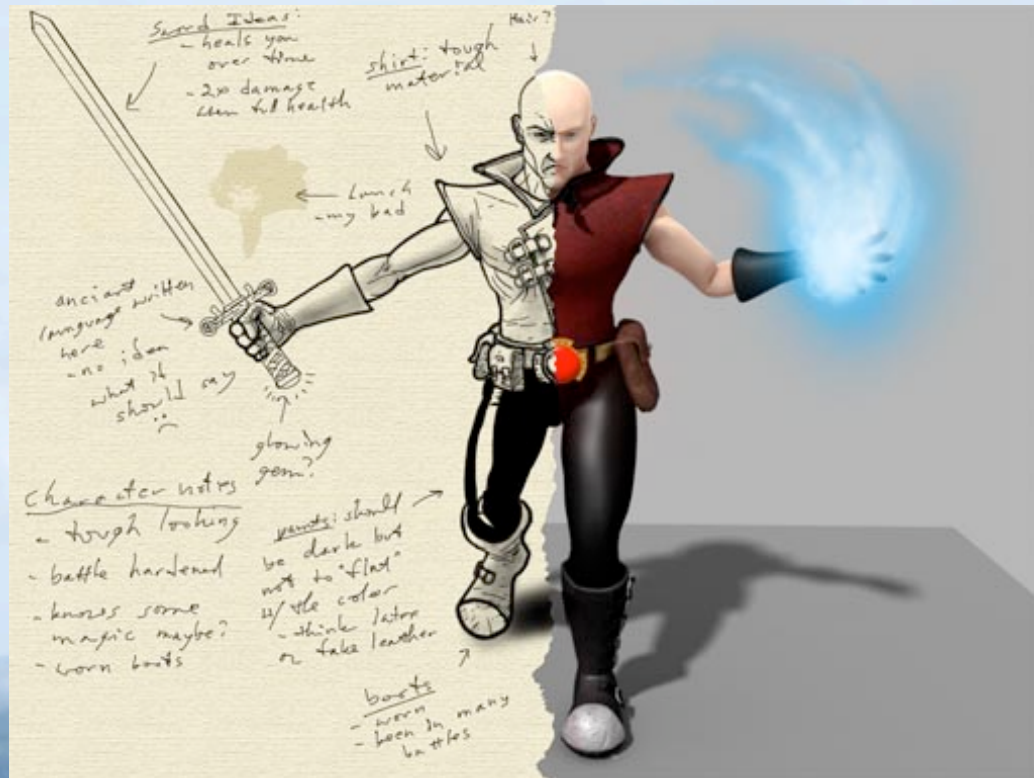
- ✧ Benefits: they create *environments* and are therefore immersive and stimulating



Context

# Games & Simulations

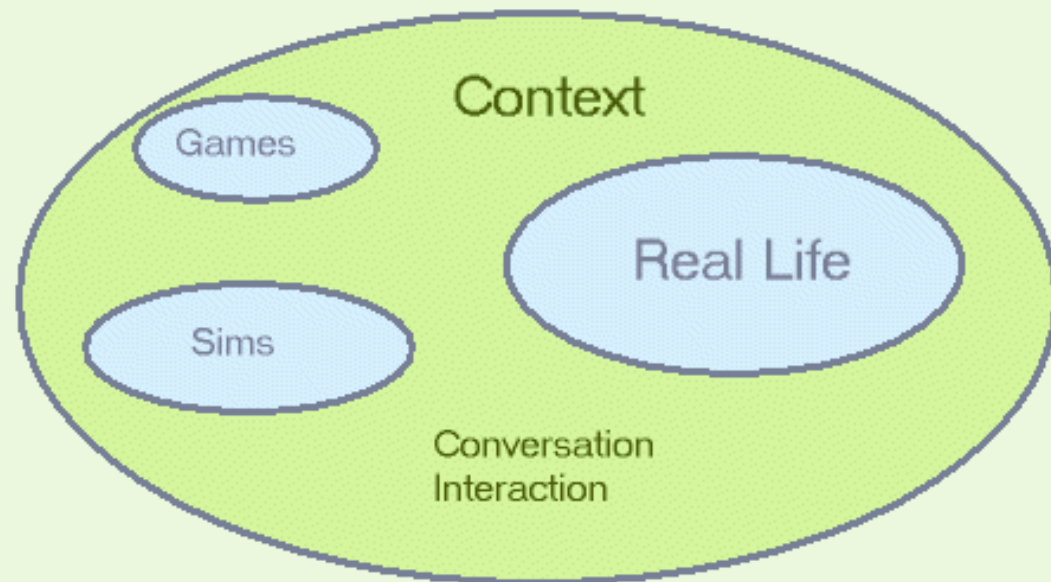
- ✧ However, they need to be planned and designed in advance



Context

# Games & Simulations

- ✧ We need to situate games and simulations within the wider context



Context

# *Unknown Unknowns*

✧ Jollymore: we educate for the unknowns



Context

# *Unknown Unknowns*

- ✧ Haines: we need to understand what makes people tick these days

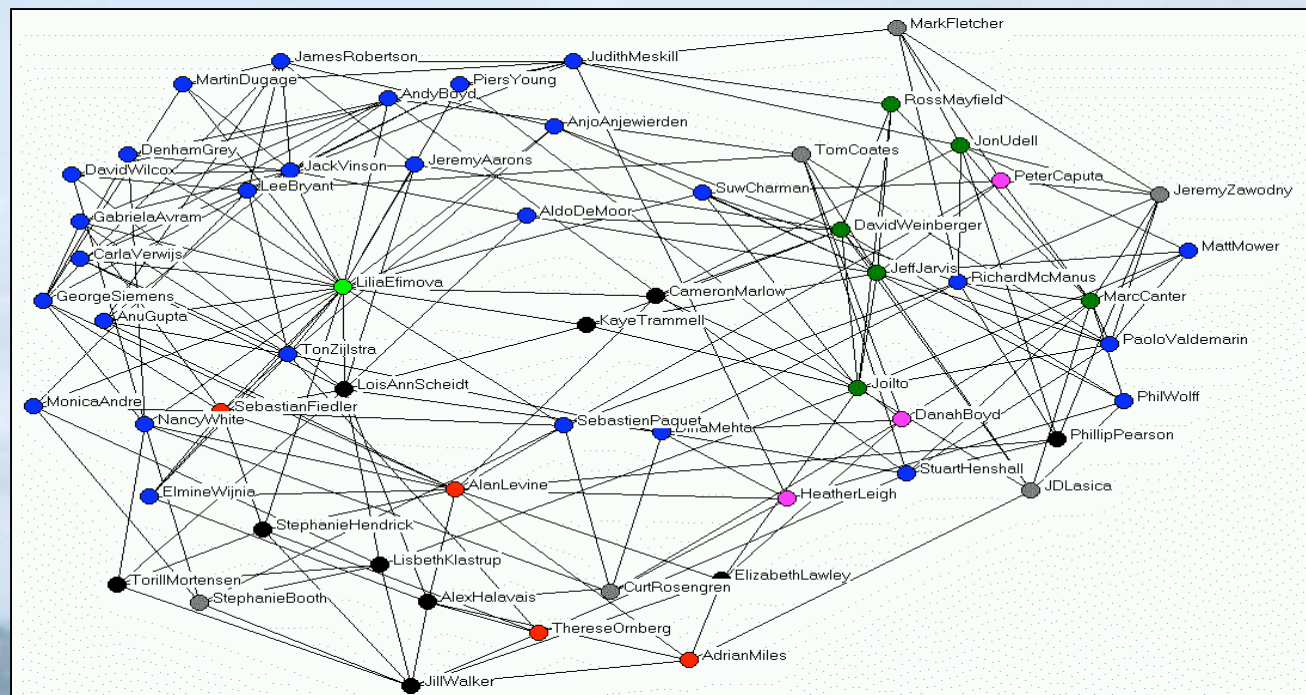


Context



# Learning Networks

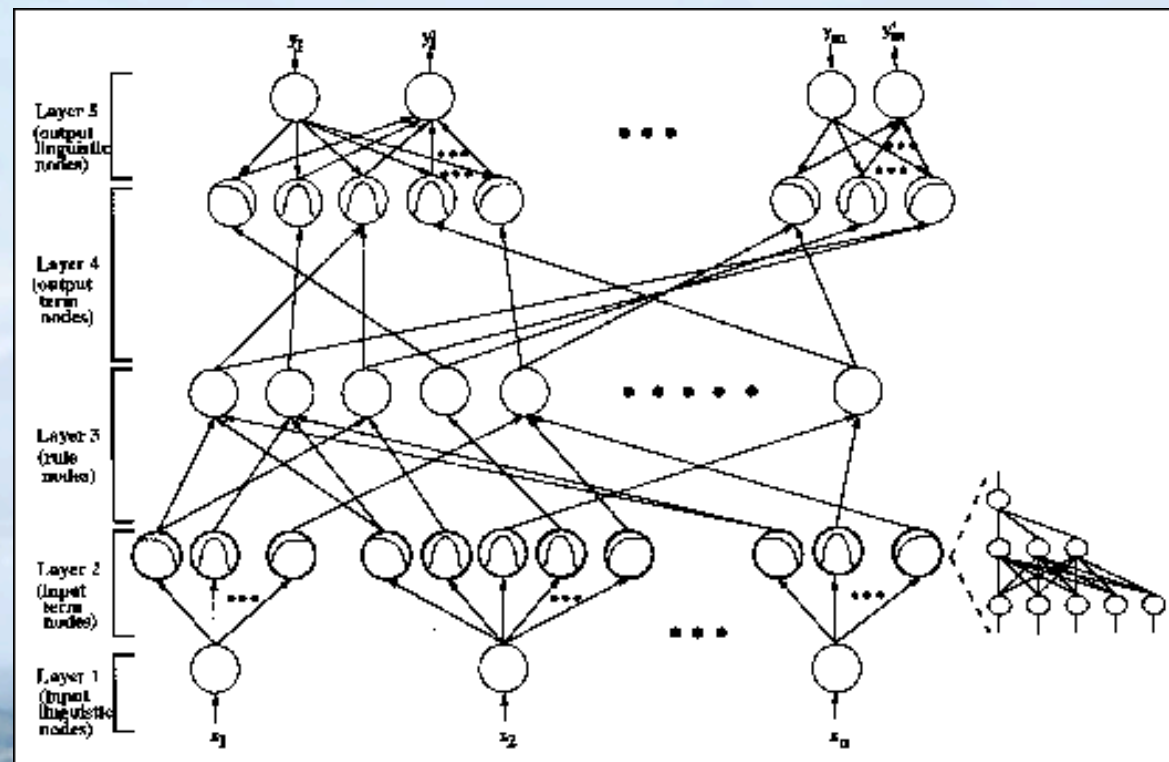
- Partially, the idea is to distribute, to make decisions in the field



Context

# Learning Networks

- ✧ But critically, the idea is to create a learning system that *learns*



Context

# Learning Networks

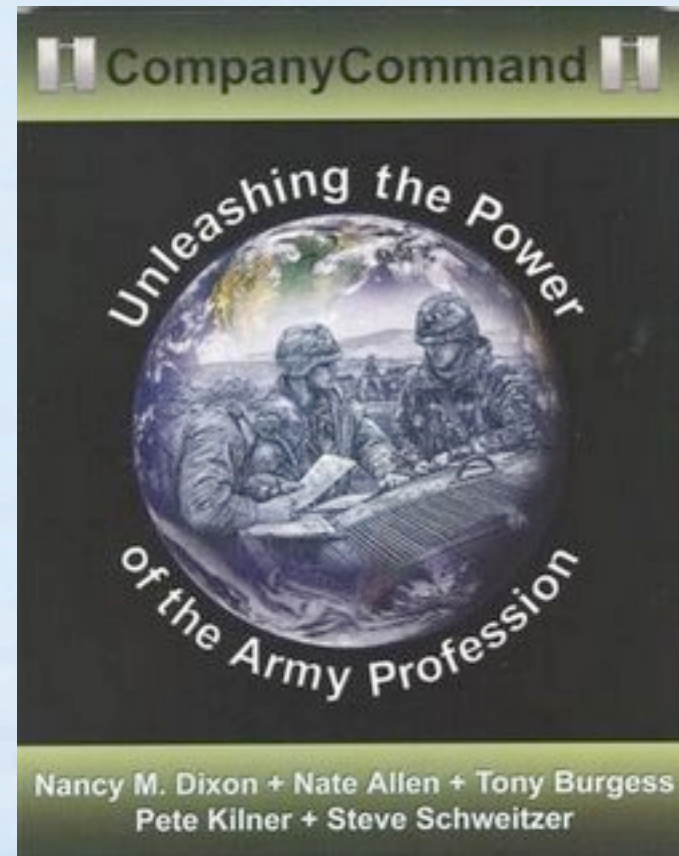
- ✧ Because, often, we don't *know* what we want to teach



Context

# *Company Command*

- ✧ Knowledge exists in the minds of the members or participants



**Context**

# *Company Command*

- ✧ The need for content and support emerges from the conversations



Context

# Drupal

✧ Is an open source content management system



Context

# Drupal

- ✧ Supports individual accounts, pages, conversations, and much more



The screenshot shows the Drupal 'Story' creation form. The form is titled 'Story' and includes several fields and options. Red arrows point to specific areas: 'Article title' points to the 'Title' field, 'Article body' points to the 'Body' text area, and 'Publishing options' points to the 'Moderation status' and 'Set public/published' dropdowns. The form also includes a 'Preview' button and a 'Create new revision' dropdown.

**Drupal**  
community Flanking

home | forum | submit | user account

**Story**

Title:

English:    
You can choose one or more terms for this node.

Body:

Allowed HTML tags:

Authored by:

Authored on:

Moderation status:

Set public/published:

Promote to front page:

Static on front page:

Allow user comments:

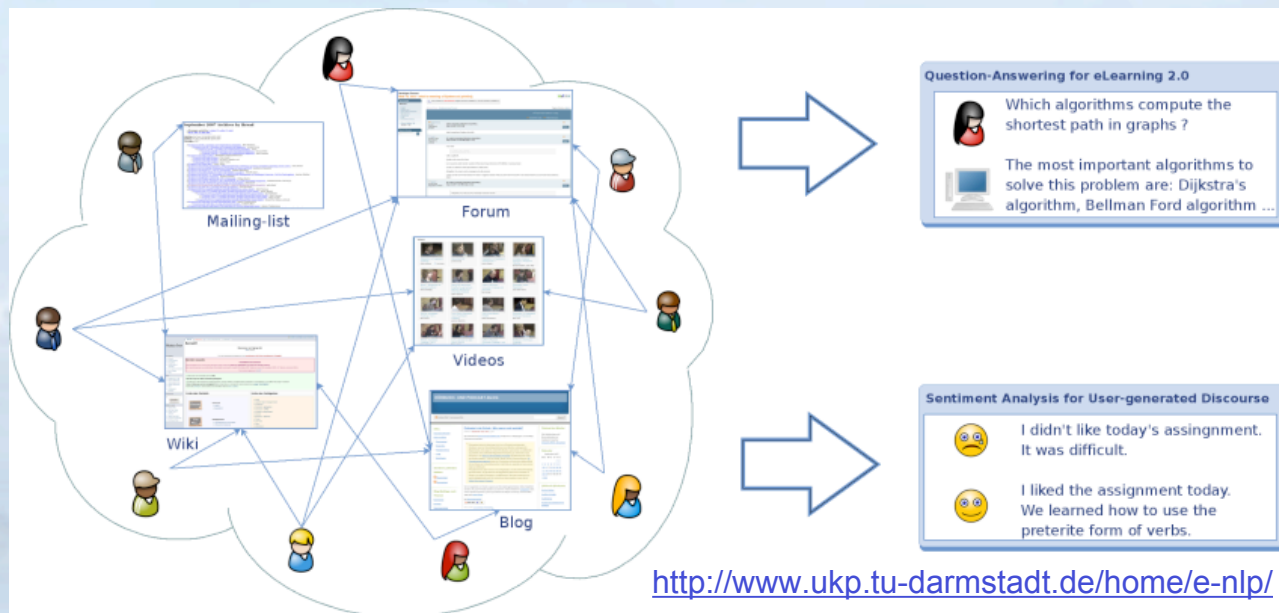
Create new revision:

**admin**

- create site page
- create story
- edit account
- administer
- logout

# E-Learning 2.0

✧ Is the application of social networking and web-based software to learning

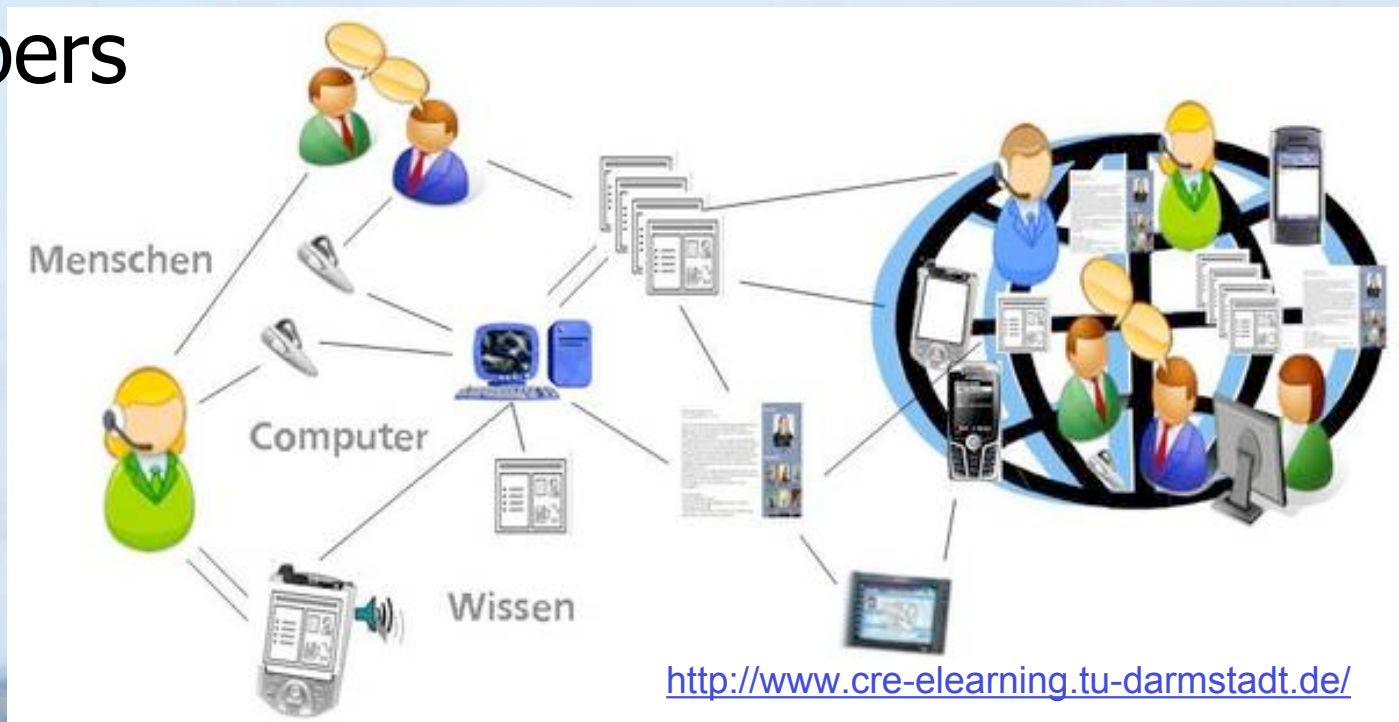


Context



# *E-Learning 2.0*

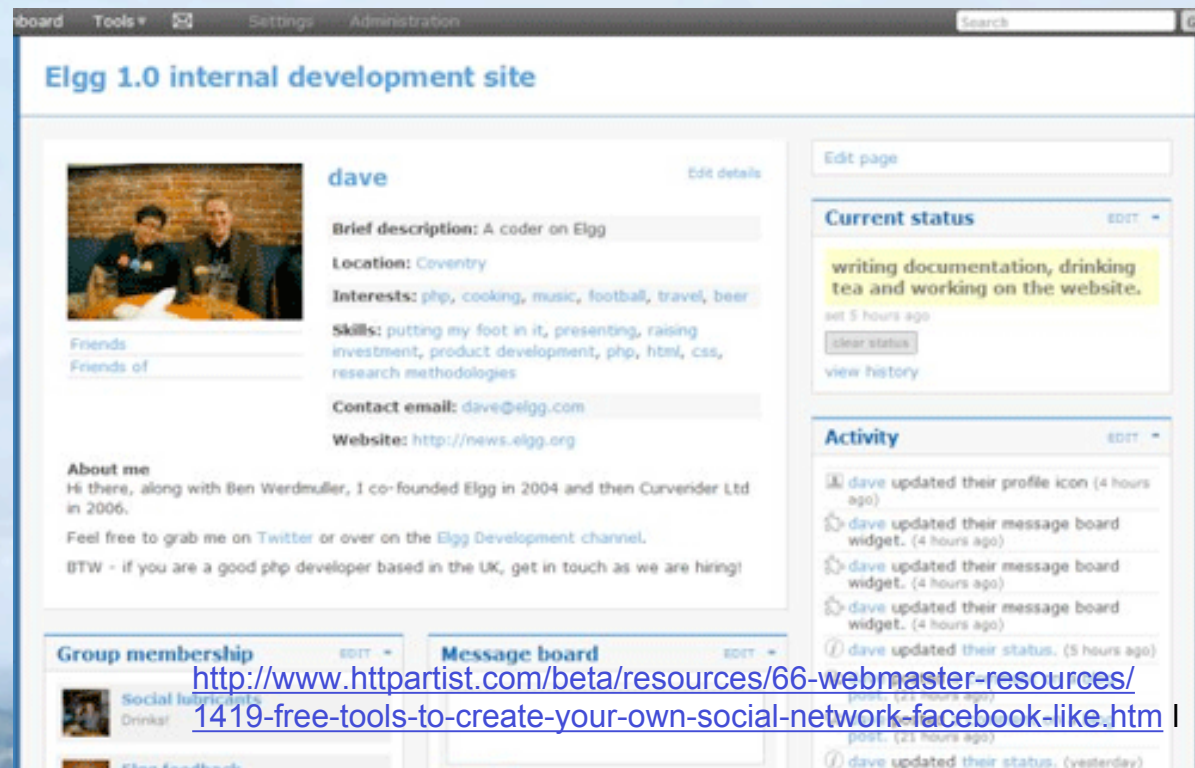
- ✧ Represents a gradual shift to decentralization and linking between members



<http://www.cre-elearning.tu-darmstadt.de/>

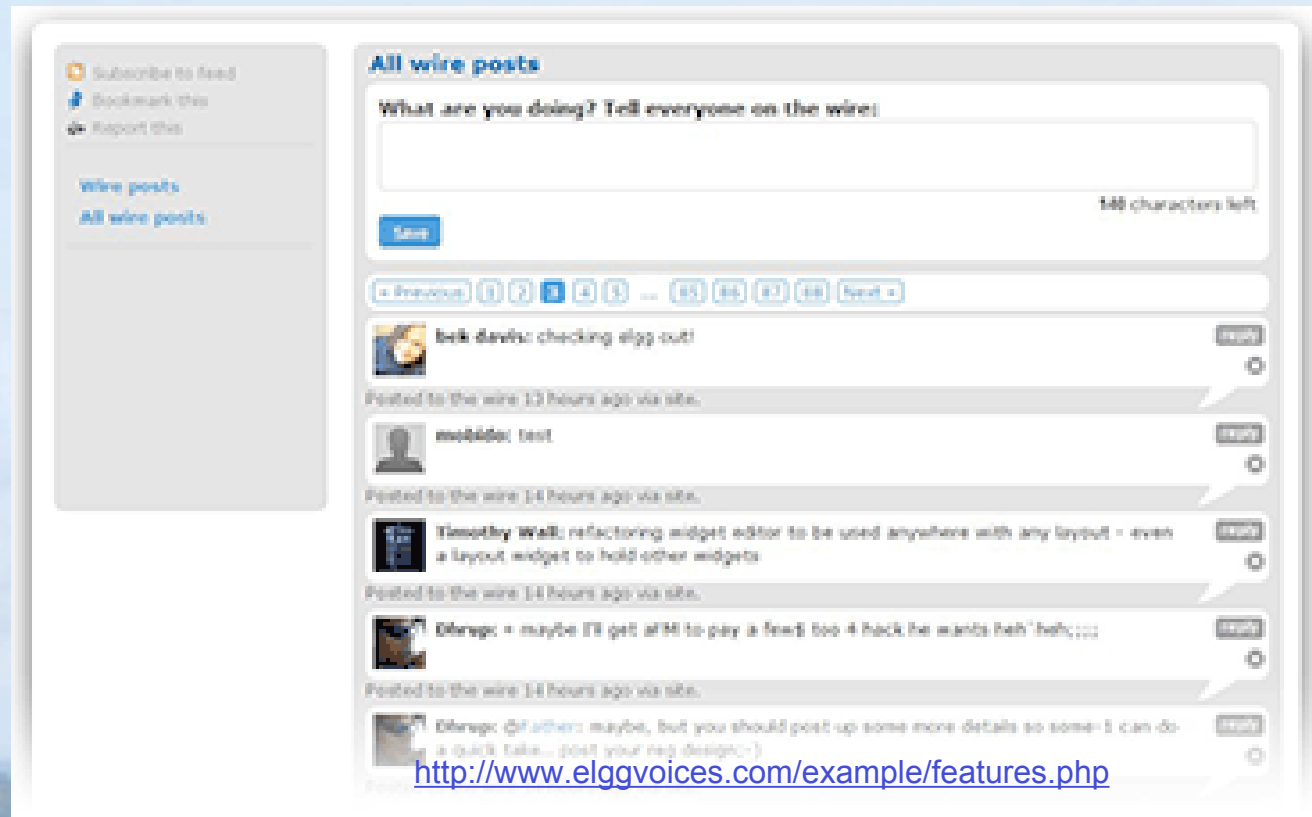
**Context**

- ✧ Combines content management and social networking



<http://www.httpartist.com/beta/resources/66-webmaster-resources/1419-free-tools-to-create-your-own-social-network-facebook-like.htm>

✧ Enables content import / export



Context

**NRC-CNRC**

Institute for  
Information  
Technology

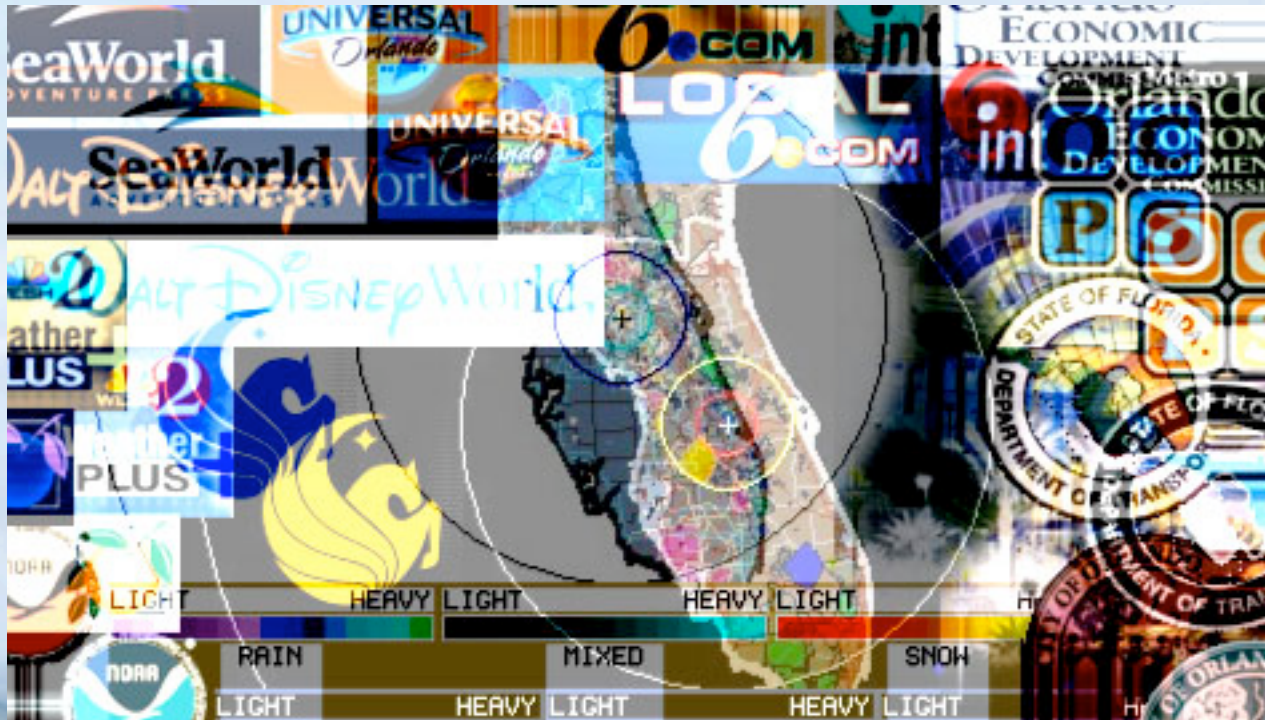


## 2. *Current*

Current

# *The Complex Internet Environment*

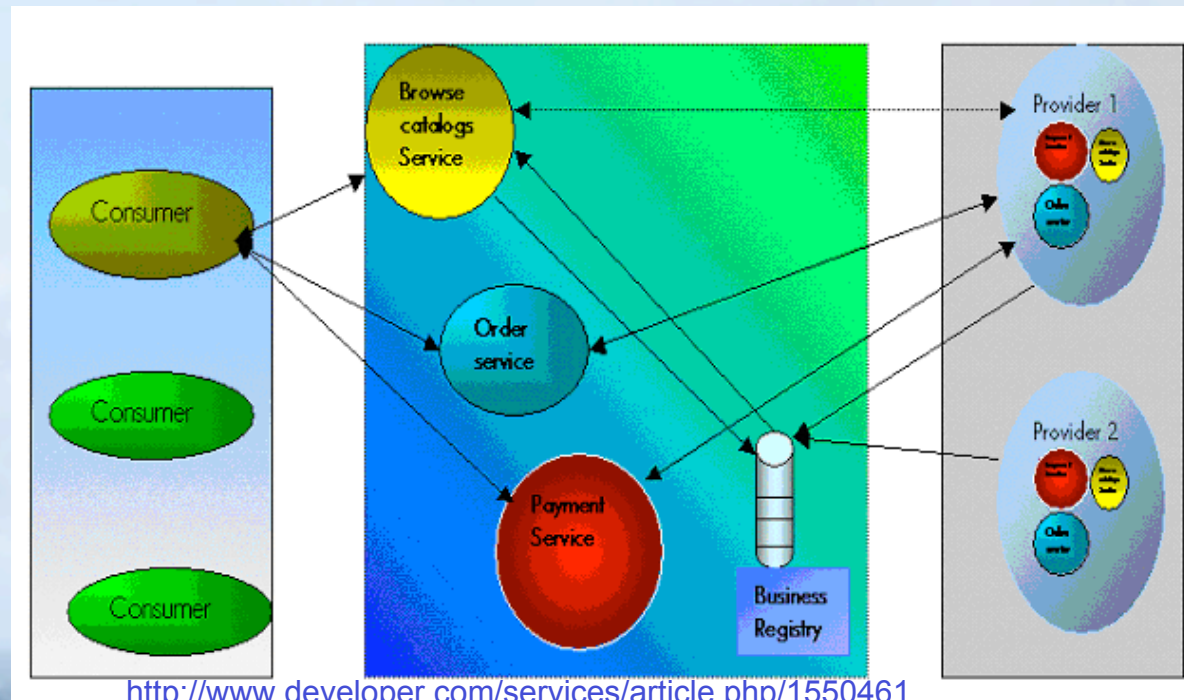
- ✧ Not just destination websites and communities (not the Net.Gain model)



Current

# The Complex Internet Environment

- ✧ Not the web services (choreographed) model either



<http://www.developer.com/services/article.php/1550461>

Current

# *The Complex Internet Environment*

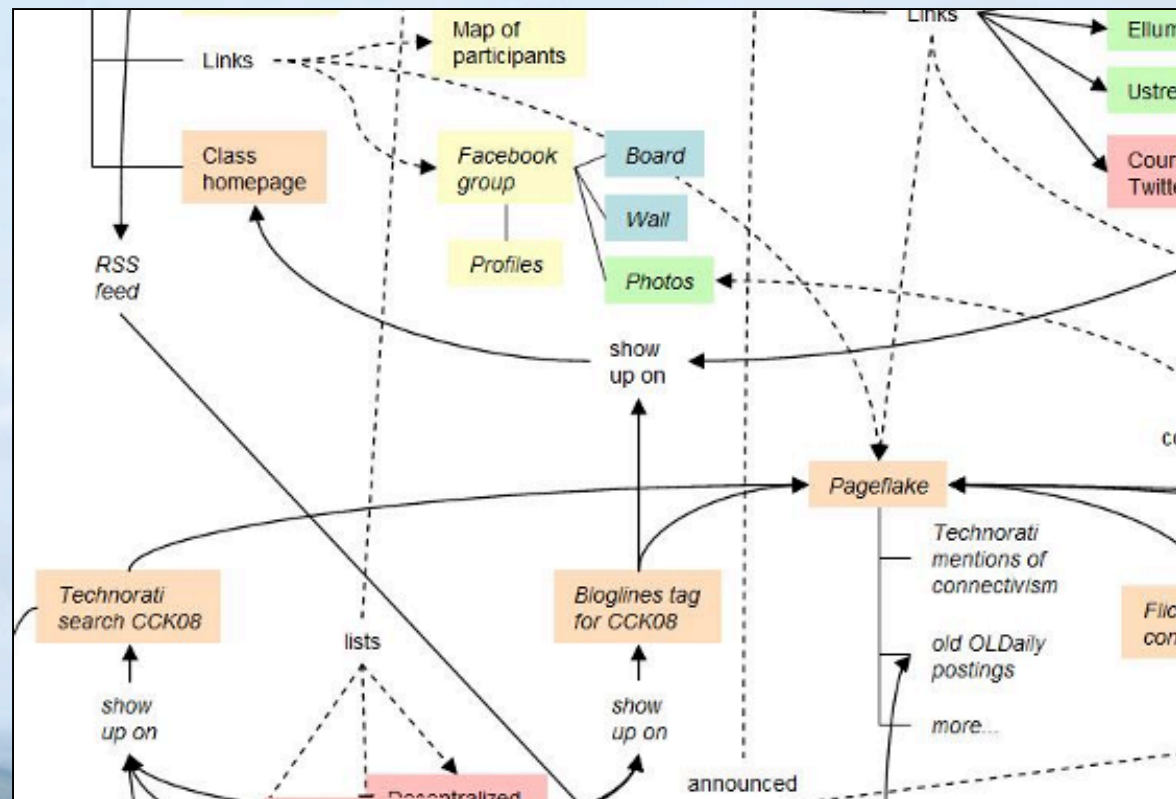
- ✧ People have multiple 'home pages' - blogs, Twitter, YouTube, Flickr...



Current

# Connectivism Course

✧ Model: open, distributed online course



Current



# Connectivism Course

✧ 2200 students participated in fall 2008



Current

# Connectivism Course

✧ Participants essentially *created* a network

**CONNECTIVISM & CONNECTIVE KNOWLEDGE**  
a rather large open online course...

[HOME](#)   
 [THE DAILY](#)   
 [WIKI](#)   
 [ABOUT](#)   
 [AGGREGATIONS](#)   
 [READINGS](#)   
 [SIGNING UP](#)

### List feeds

[ADMIN]

<p>[New] [List] Author</p> <p>[New] [List] Box</p> <p>[New] [List] Cite</p> <p>[New] [List] Event</p> <p>[New] [List] Feed</p> <p>[New] [List] File</p> <p>[New] [List] Journal</p> <p>[New] [List] Link</p> <p>[New] [List] Optlist</p> <p>[New] [List] Mapping</p> <p>[New] [List] Page</p> <p>[New] [List] Person</p> <p>[New] [List] Post</p> <p>[New] [List] Presentation</p> <p>[New] [List] Publication</p> <p>[New] [List] Project</p> <p>[New] [List] Task</p> <p>[New] [List] Template</p> <p>[New] [List] Theme</p> <p>[New] [List] Topic</p> <p>[New] [List] View</p>	<p>Listing 0 to 1000 of 106 feeds</p> <p>[Harvest][Retire] Links: <a href="#">ActionsFLE en formation</a> (category)</p> <p>[Approve] Links: <a href="#">Aggregator Blog</a> (category)</p> <p>[Approve] Links: <a href="#">Al d'Áa</a> (category)</p> <p>[Approve] Links: <a href="#">Alvin's Educational Technology Blog</a> (category)</p> <p>[Approve] Links: <a href="#">An Education and Technology Blog</a> (category)</p> <p>[Approve] Links: <a href="#">An Oxonian's Learning Journey</a> (category)</p> <p>[Approve] Links: <a href="#">Beespace</a> (category)</p> <p>[Approve] Links: <a href="#">blog.puntopanto.it, bloggers she wrote</a> (category)</p> <p>[Approve] Links: <a href="#">Bradley Shoebottom Blog</a> (category)</p> <p>[Approve] Links: <a href="#">Brett Powell CCK</a> (category)</p> <p>[Approve] Links: <a href="#">Buthaina-Connect08</a> (category)</p> <p>[Approve] Links: <a href="#">CCK-No8</a> (category)</p> <p>[Approve] Links: <a href="#">cck08 - learning</a> (category)</p> <p>[Approve] Links: <a href="#">CCK08-viplay Baxi</a> (category)</p> <p>[Approve] Links: <a href="#">Classroomblogging.com</a> (category)</p> <p>[Approve] Links: <a href="#">Coalesce</a> (category)</p> <p>[Approve] Links: <a href="#">Concetta Gottlieb's Blog</a> (category)</p> <p>[Approve] Links: <a href="#">Connecting Online</a> (category)</p> <p>[Approve] Links: <a href="#">Connective Knowledge Weblog</a> (category)</p> <p>[Approve] Links: <a href="#">Connectivism &amp; Connective Knowledge</a> (edubloggers)</p> <p>[Approve] Links: <a href="#">Connectivism and Connective Knowledge</a> (category)</p> <p>[Approve] Links: <a href="#">Connectivism by the Nile</a> (category)</p>
---	---

Current

# *gRSShopper*

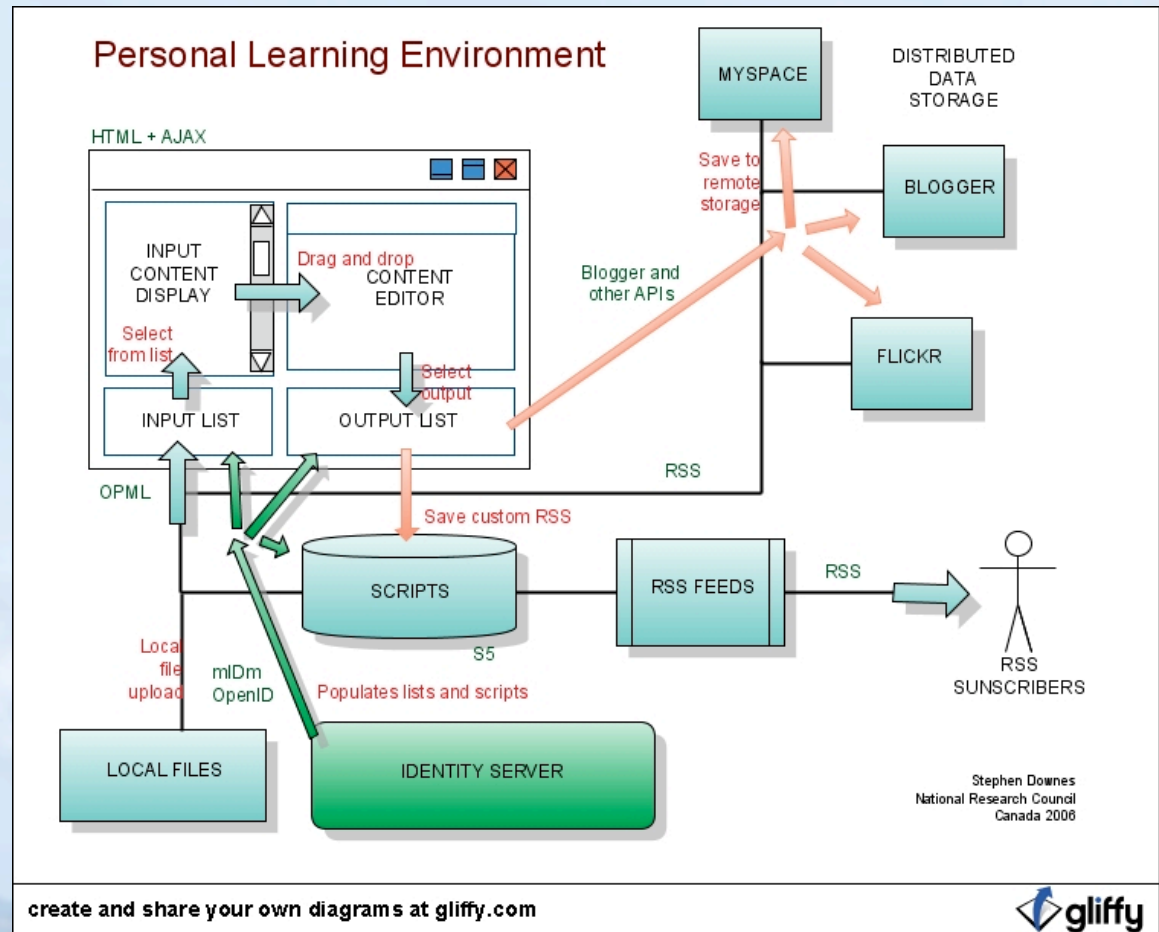
✧ Software support for CCK08, OLDaily



Current

# gRSShopper

✧ Prototype  
Personal  
Learning  
Environment  
as a centre for  
learning



Current

# gRSShopper

✧ Also useful as a teaching platform

## Connectivism & Connective Knowledge

[\[Home\]](#) [\[The Daily\]](#) [\[Wiki\]](#) [\[About\]](#) [\[Aggregations\]](#) [\[Readings\]](#)

### *The Daily*

September 9, 2008

#### Highlighted Resources

##### [Time Change for Wednesday Session](#)

Important: We've made a change to our Wednesday (in our part of the world) schedule. The illuminate session will be held at 11:00 am CST (see [conversion here](#)). The event will be held in illuminate ([link here](#)). Sorry about this last minute change. If the time doesn't work for those in Australia and Asia, please let me know ([gziemens@elearnspace.org](mailto:gziemens@elearnspace.org)) and we can try and arrange a smaller discussion group at a different time). CCK08, , September 9, 2008 [\[Link\]](#) [\[Tags: none\]](#) [\[Comment\]](#)

##### [Connections, Learning, and Ptolomeus \(CCK08-W1\)](#)

Nice post on the question of whether we 'grow' or 'build' new learning. Diego Leal cites John Medina's book *Brain Rules* (I'll have to get that one) on learning: "No defined structure, no progressive storage. Just the creation and recreation of connections between neurons. So, the process seems to be closer to something growing out (or expanding?) than to something being built." Here's the [Brain Rules](#) website, if you want to have a look. [Diego Leal](#), [.Edu.Co.Blog](#), September 9, 2008 [\[Link\]](#) [\[Tags: none\]](#) [\[Comment\]](#)

Current

## ✧ Content aggregation and organization

**[ADMIN]**

[New] [List] Author  
[New] [List] Box  
[New] [List] Cite  
[New] [List] Event  
[New] [List] Feed  
[New] [List] File  
[New] [List] Journal  
[New] [List] Link  
[New] [List] Optlist  
[New] [List] Mapping  
[New] [List] Page  
[New] [List] Person  
[New] [List] Post  
[New] [List] Presentation  
[New] [List] Publication  
[New] [List] Project  
[New] [List] Task  
[New] [List] Template  
[New] [List] Theme  
[New] [List] Topic  
[New] [List] View

**title:A Day In The Life -> journal**

A *mapping* is a way to direct where you want harvested data to be stored. The mapping source is always a feed, while the mapping destination is always a database table.

**Source**

Either...

<input type="radio"/> Specific Feed:	ACRLog	[Help]
<input type="radio"/> Feed Type	Atom	[Help]
<input type="radio"/> Feed Fields	title	[Help]
<input checked="" type="radio"/> Value Pair	title:A Day In The Life	[Help]

**Destination**

Select a destination table: journal

link

**Map Table Elements**

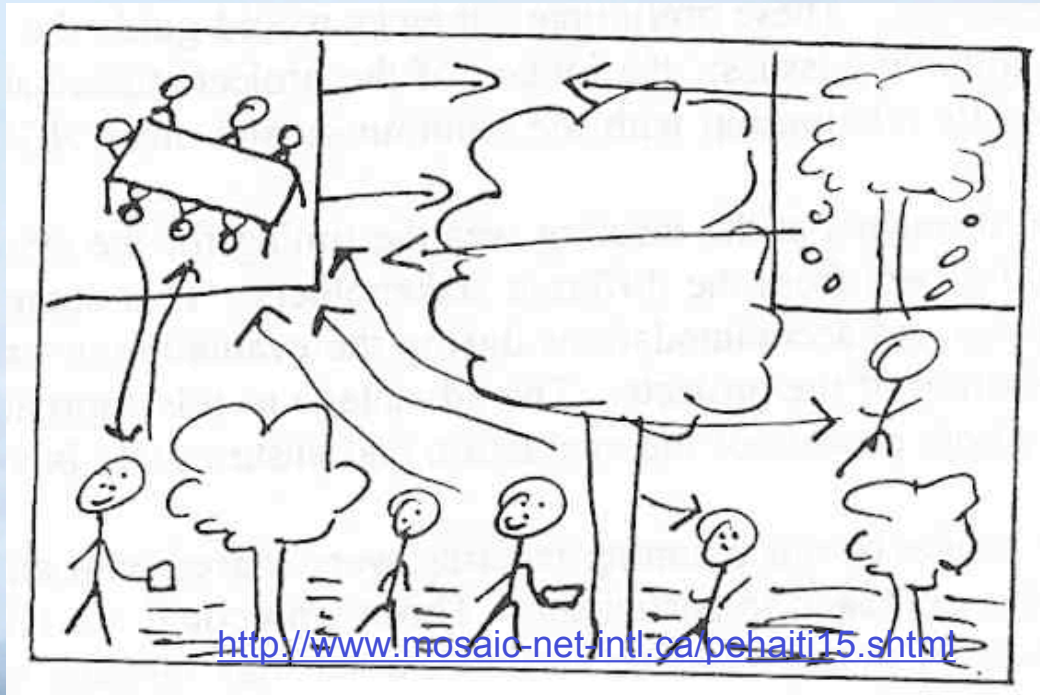
Source	Destination: journal
hits	---
cites	---

Done

Current

# Notes on Evaluation

- ✧ Evaluation of competence, contribution, and not memory



Current

# Notes on Evaluation

## ✧ Distributed Evaluation

Freie Universität Berlin

Home | Contact | Imprint

dc distributed campus

Portal

Tandem

Partner

Internship

Login

Details

Registration

Technical Requirements

Changelog

Username

Password

Login

No registered user yet? Then check out our demo version!

campus culture

intercultural awareness

personal experience

German language

academic work

everyday life

Don't miss our intro!

Let the President of the FU Berlin welcome you!

Check out your German!

How does the German university system work!

Follow us, explore Berlin!

[http://www.cedis.fu-berlin.de/projekte/media\\_projekte/dc\\_bild.jpg](http://www.cedis.fu-berlin.de/projekte/media_projekte/dc_bild.jpg)

top

Current



NRC-CNRC

Institute for  
Information  
Technology



# 3. *Future*

Future

# *Serialized Feeds*

- ✧ Purpose - to simplify content submission to distributed courses



Future

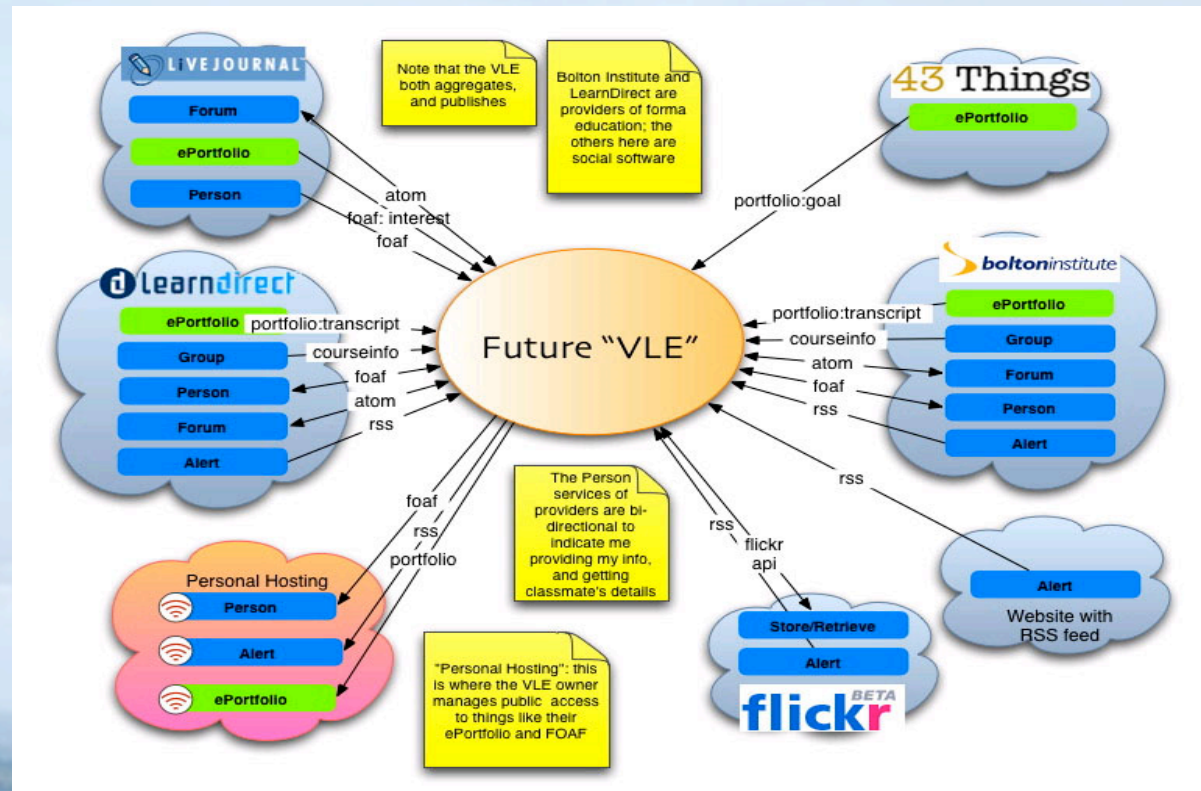
# *Serialized Feeds*

- ✧ Method: predefined and times content releases into email and RSS content stream



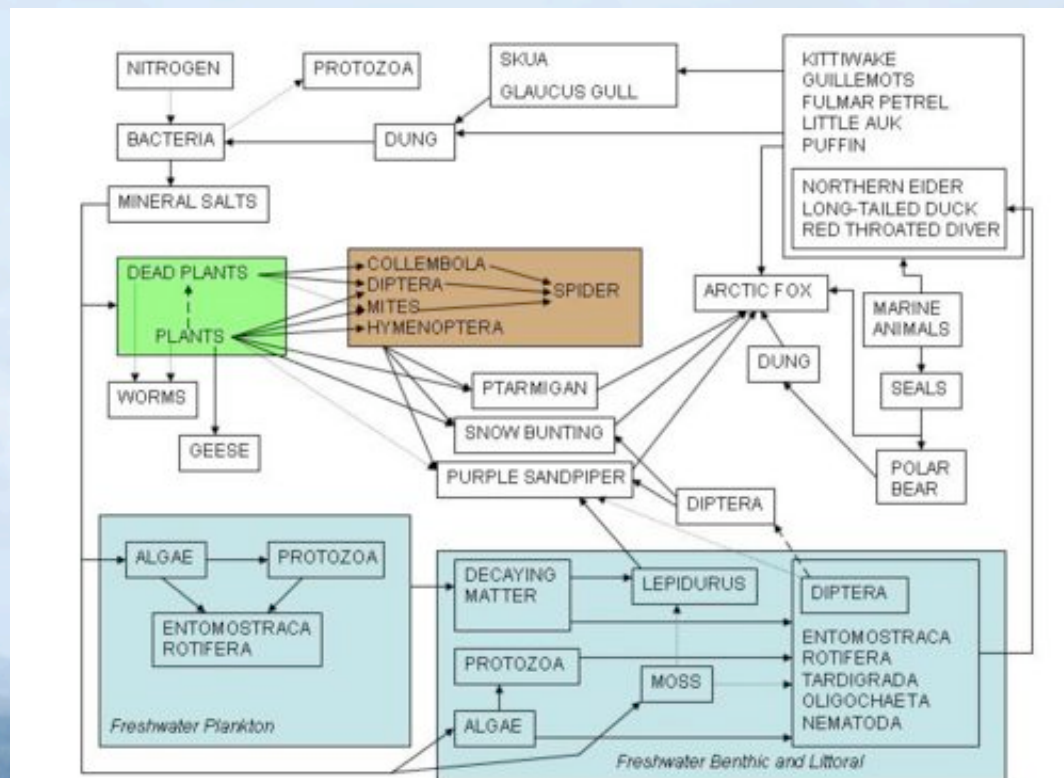
Future

## ✧ Upcoming NRC development project



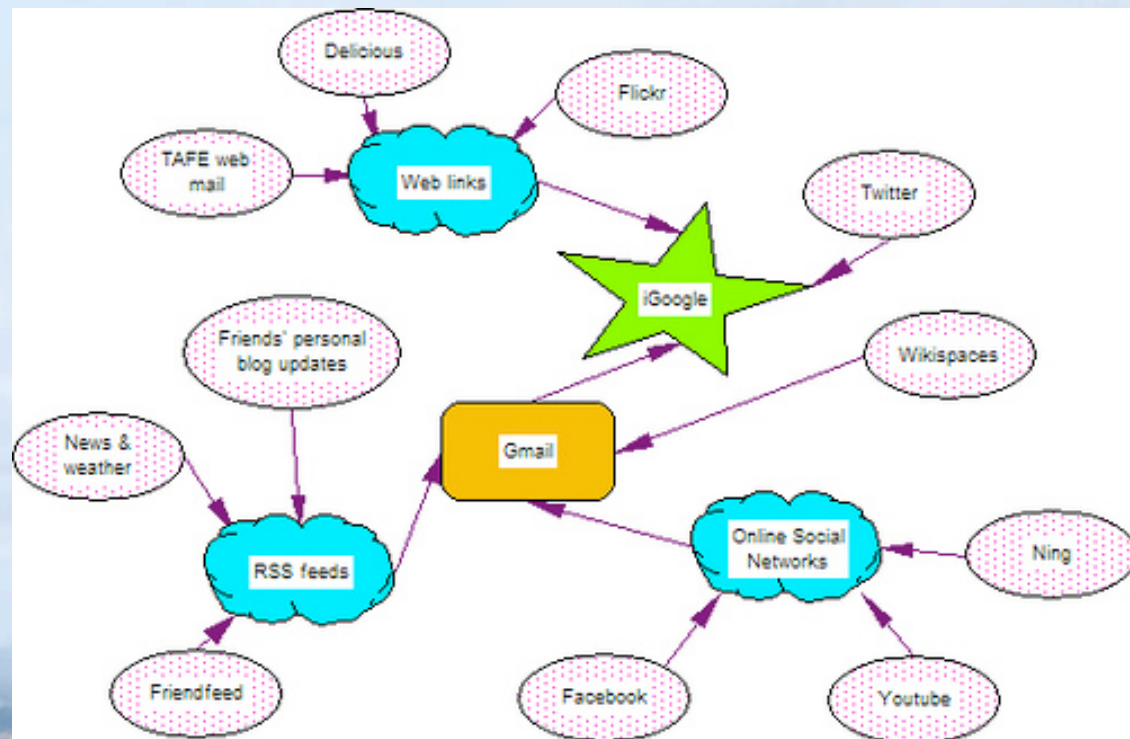
Future

- Major stages: aggregate, remix, repurpose, feed forward



Future

- ✧ Creates a learning *network* and not merely a management system



# *A World of Objects*

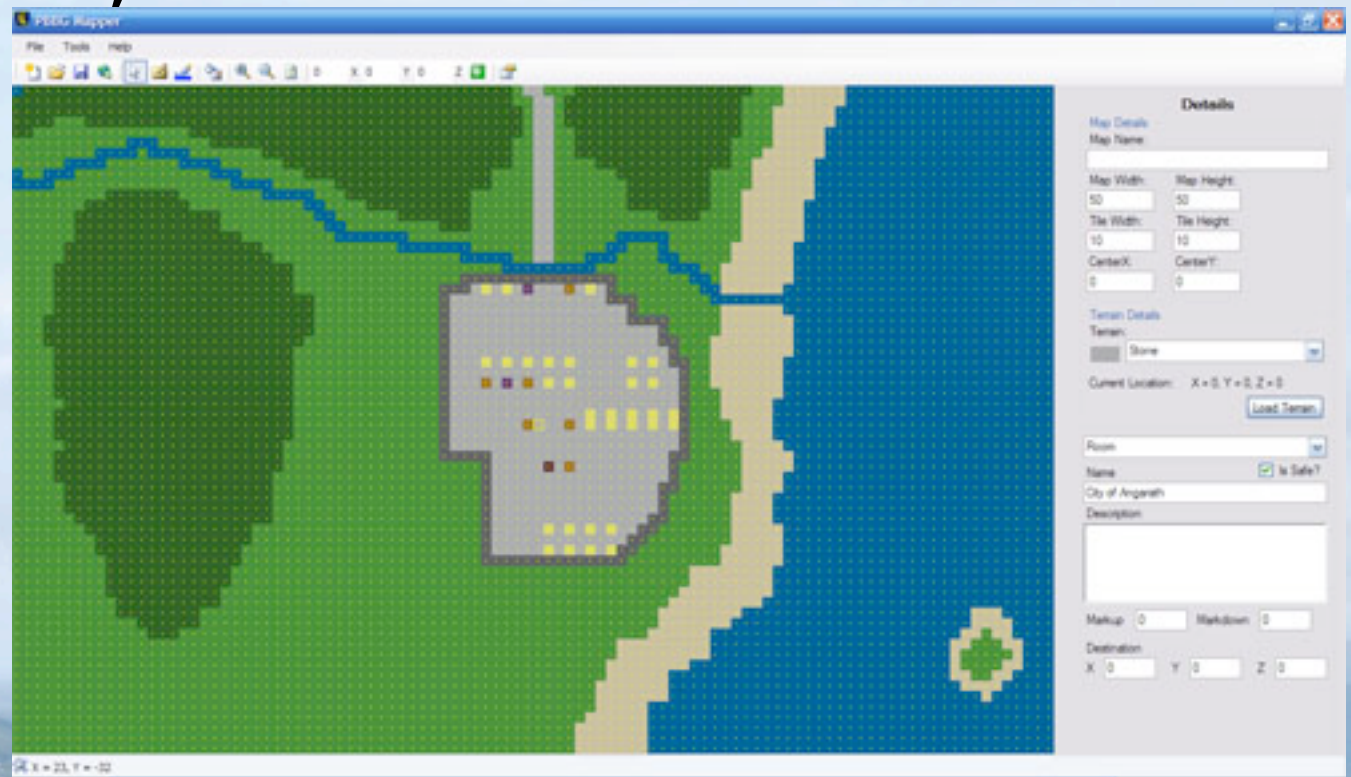
- ✧ The point where PLEs and Envrionments meet



Future

# *A World of Objects*

- ✧ The original idea from mudlibs - object orientation, inheritance



Future



# State Based Learning Design

- ✧ The old theory - learning objects just static content, organized as though it were a book or manual

<http://www.irrodl.org/index.php/irrodl/article/viewArticle/609/1166>

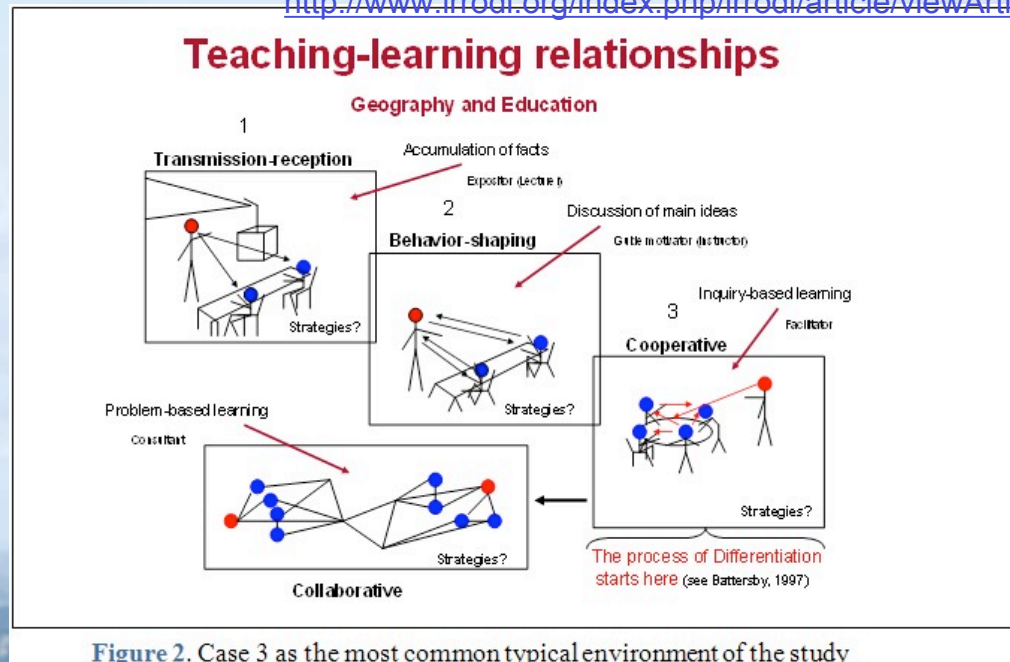


Figure 2. Case 3 as the most common typical environment of the study

Future

# *State Based Learning Design*

- ✧ The new theory - learning objects are  
(a) words in a conversation (b) entities  
in an environment



<http://www.simskill.com/assets/screenGrabs.jpg>

**Future**

**NRC-CNRC**

*Institute for  
Information  
Technology*

✧ Stephen Downes

✧ <http://www.downes.ca>



**Author**