

# The Connective Learning Environment

A scenic view of a park with a pond, trees, and a statue. The background shows a large tree on the left and a statue of a man on a pedestal on the right. The foreground is a pond reflecting the scene.

Stephen Downes

Tele-Task Symposium

Potsdam, October 8, 2012

# Rethinking the Learner

experimenting  
inquis

getting excited about new stuff

has to be engaged collaborator

analyzing

playing

a sponge

What is it?

Explorer

someone who acquires knowledge ar  
Someone who wants to know

absorbing

making connections

building memories

Not worried about failure



Transparency  
A smart person

Listening

Facilitator

Examples

students  
Parents

Tutors and Professors

teachers

partner

knowledge sharing

learning about learning:  
meta-learning

A life-long inquiry

connecting

Who Does It?

Everyone

Students are learners but also teachers

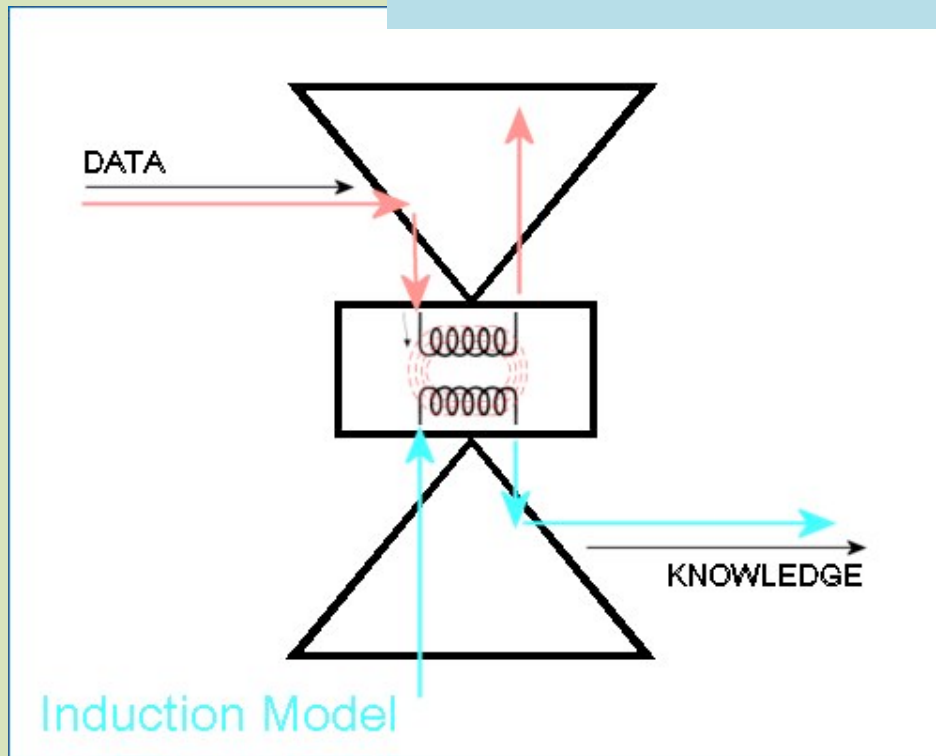
those who are engaged

asking more questions than finding answers

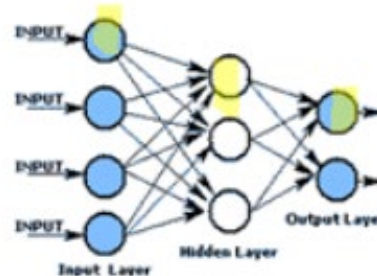
It Takes a Whole Village to  
Raise a Child

Image: [http://www.freeprintablecoloringpages.net/showcover/School/Sad\\_Student](http://www.freeprintablecoloringpages.net/showcover/School/Sad_Student)

# How People Learn



Input →



→ Output

perceiving → sensing, feeling, thinking, deciding → behaving

# The First MOOC: CCK08



The screenshot shows the 'Connectivism 2008' wiki page on the Learning Technology Centre (LTC) website. The page title is 'Connectivism 2008' and it includes a welcome message: 'Welcome to the Connectivism and Connective Knowledge Online Course support wiki.' It also lists conference tags as 'CCK08' and provides information about language availability and a Facebook group. A 'Contents' section lists 20 items, including a pre-week 1, 19 weeks of content, and a short paper 1. The left sidebar contains navigation links, in-links, and a search box.



2008: CCK08  
Stephen Downes, George Siemens  
The First Massive Open Online Course (MOOC)

[http://ltc.umanitoba.ca/wiki/Connectivism\\_2008](http://ltc.umanitoba.ca/wiki/Connectivism_2008)

# How to Participate in CCK08

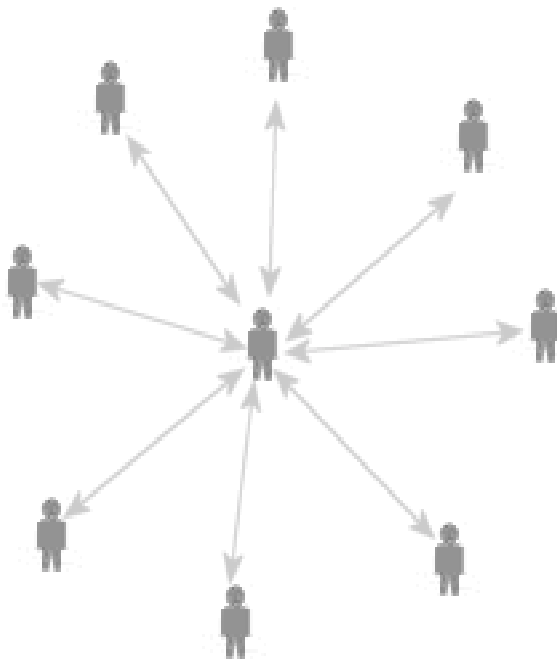
The screenshot displays a virtual meeting environment. On the left, a 'Participants' list includes names like Stephen, Abdullah, Amanda, and others. Below it is a 'Chat' window with a message from Tracy Parish (@hamtra) about a Twitter list. At the bottom left, there is an 'Audio' control for George Siemens. The main area shows a 'PowerPoint Presentation' with a 'Follow Moderator' checkbox. The presentation content consists of three mind maps:

- What??**: A central node with arrows pointing to Posts, Explanations, Visualizations, Answers, Tutorials, and Spaces.
- With what??**: A central node with arrows pointing to Second Life, Blog, Facebook group, Moodle, ManyEyes, NodeXL, and 'Your space, your language'. The word 'Create' is circled in red above this map.
- Interact**: A central node with arrows pointing to Moodle, Sub-networks/clusters, Blogs, Groups, SL, Quora, Diigo, Delicious, and Elluminate Sessions.
- Track**: A central node with arrows pointing to Netvibes, Google Alerts, The Daily, Your RSS reader, and Moodle.

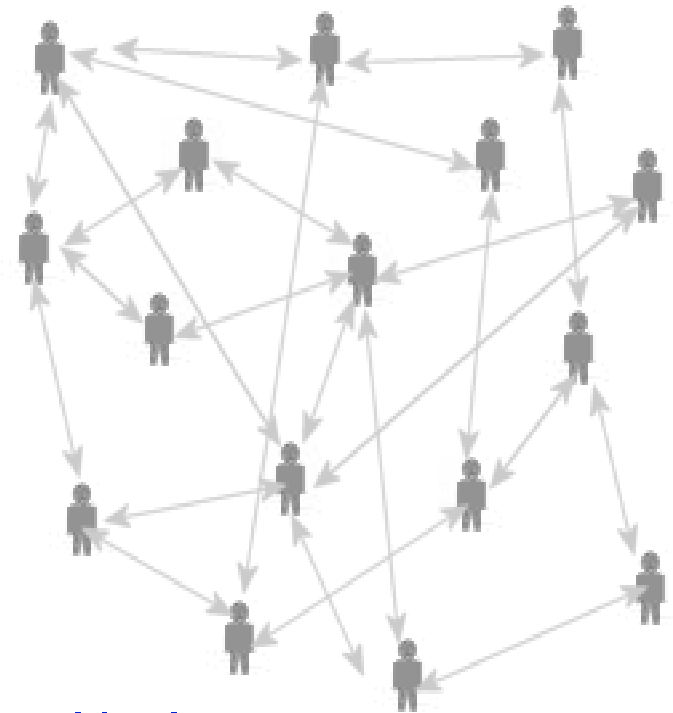
The bottom of the interface shows a timeline at 11:01 and a duration of 'In session for 1 hour, 46 minutes.'

# MOOC Design Logic

In Education...

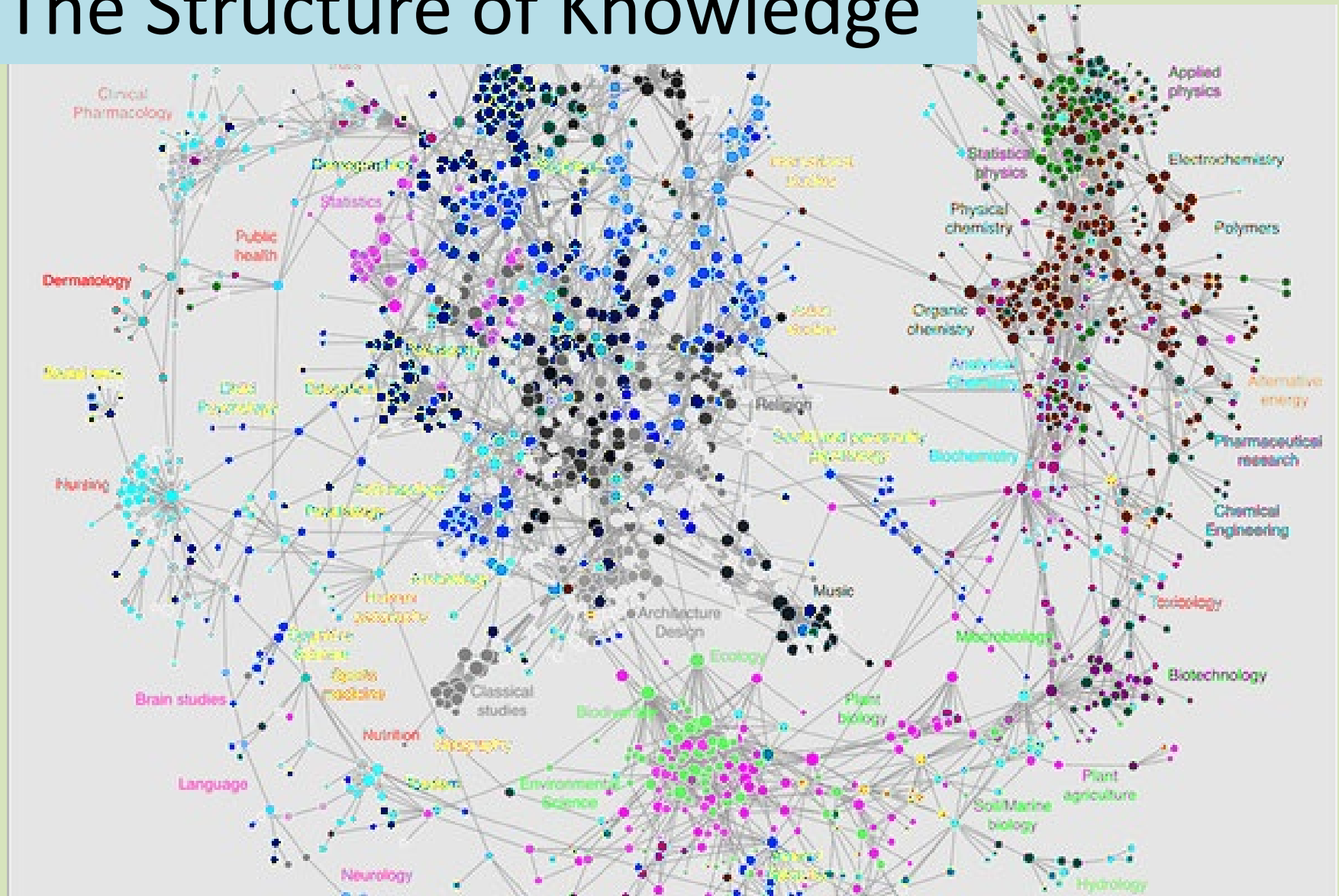


this does not scale



this does

# The Structure of Knowledge



Xcode File Edit View Navigate Editor Product Window Help

admin.cgi

admin.cgi > No Selection

```

28
29
30
31 # Forbid agents
32
33 if ($ENV{'HTTP_USER_AGENT'} =~ /bot|slurp|spider/) {
34     print "Content-type: text/html; charset=utf-8\n";
35     print "HTTP/1.1 403 Forbidden\n\n";
36     print "403 Forbidden\n";
37     exit;
38 }
39
40
41 # Initialize gRSShopper Library
42
43 use FindBin qw($Bin);
44 require "$Bin/grsshopper.pl";
45 our ($query,$vars) = &load_modules();
46
47
48 use File::Basename;
49 use File::stat;

```



Location Absolute Path

New site - sftp://downes@174.132.255.254 - FileZilla

Host: Username: Password: Port: Quickconnect

Status: Directory listing successful  
 Status: Retrieving directory listing...  
 Command: cd "/var/www/cgi-bin"  
 Response: New directory is: "/var/www/cgi-bin"  
 Command: ls  
 Status: Listing directory /var/www/cgi-bin  
 Status: Directory listing successful

Local site: /Users/stephendownes/Documents/ Remote site: /var/www/cgi-bin

Filename	Filesize	Filetype
..		Directory
...		Directory
.parallels-vm-directory		Directory
2011_10_28 - Providence_data		Directory
Aspyr		Directory
Content		Directory
HDRtist Pro		Directory
Microsoft User Data		Directory
My Flip Video Library		Directory
Parallels		Directory
RDC Connections		Directory
autonomy_data		Directory
brussels_data		Directory
change_25Oct2011_data		Directory
nyc_data		Directory
video		Directory
xml		Directory
admin.cgi	97,794	cgi-file
archive.cgi	5,447	cgi-file
backup.sh	747	sh-file
cchat.cgi	22,533	cgi-file
cck11.sql	681,116	sql-file
common.pl	82,272	Perl Script
course.cgi	28,400	cgi-file
easyrss.cgi	2,973	cgi-file
easyrss.txt	2,973	ASCII Text
easyrss_file.tsv	330	Tab Separated Values
easyrssa.cgi	2,973	cgi-file
edurss02.cgi	5,842	cgi-file
feedparser.cgi	28,751	cgi-file
grsshopper.pl	1,244	Perl Script

28 files and 15 directories. Total size: 256,648,876 bytes

33 files and 10 directories. Total size: 11,488,656 bytes

Server/Local file	Direction	Remote file	Size	Priority	Status
-------------------	-----------	-------------	------	----------	--------

Queued files Failed transfers Successful transfers

Queue: empty



The Programmer

Content-type: text/html;

# Command Line A

```

72 $vars->{cronsite} = $ARGV[0];
73 $vars->{action} = $ARGV[1];
74 if ($vars->{action} eq "pub") {
75     $vars->{preview} = $ARGV[2];

```

<http://grsshopper.downes.ca/>



# Ed Radio



The screenshot shows the Ed Radio website. At the top left is a photo of Stephen Downes. Below it is a section for 'My eBooks' featuring 'Free Learning' by Stephen Downes. The main content area is titled 'Ed Radio' and includes a list of show notes for October 4, 2012, with links to various live recordings. There are also instructions on how to listen to the radio from a computer or mobile device, and a small audio player interface at the bottom.

## Ed Radio

Welcome to Ed Radio, the home of all things educational and technology. Hosted by Stephen Downes, Ed Radio plays clips from live conferences, interviews, videos and more. Ed Radio is web radio, meaning you can listen to it over the internet.

### Ed Radio Show Notes, October 4, 2012

Ed Radio - more concerts - October 4, 2012:

- [Jackie DeShannon & Ry Cooder](#) Ash Grove (Los Angeles, CA), 1963
- [The Smiths](#) - Paseo De Camoens in Madrid, Spain, May 18, 1985, from YouTube
- [Franz Ferdinand](#) Live At Glastonbury Festival (Full Concert), 26 July 2009, YouTube
- [The Corrs](#) - Unplugged, YouTube

From your computer, listen to Ed Radio using:

- [Winamp](#)
- [Windows Media Player](#)
- [Real Player](#)
- [Quick Time](#)

Or, from your mobile device, use an audio player such as [Radiobox](#) - click 'Favorites' and 'Add a custom URL', then enter: <http://208.82.115.69:8009/stream>

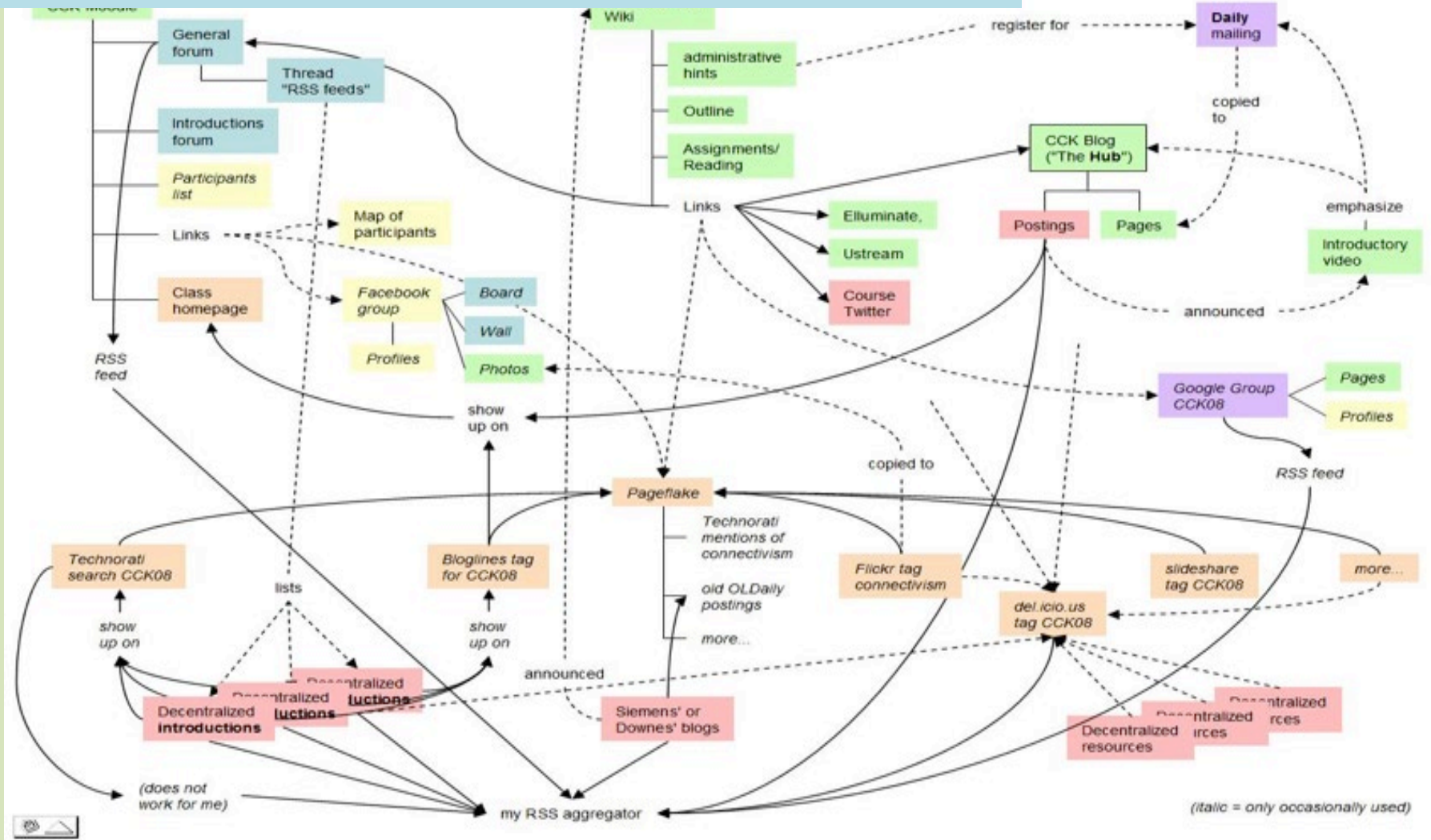
Or, use the player below:

Ed Radio

Current song: [Pink Floyd - Comfortably Numb](#)  
Stream title: Ed Radio Live  
Bit rate: 64  
Current listeners: 0  
Maximum listeners: 100

Learning the lecture recording make for horrible radio

# The Structure of a MOOC



# Course Design Principle

Aggregate

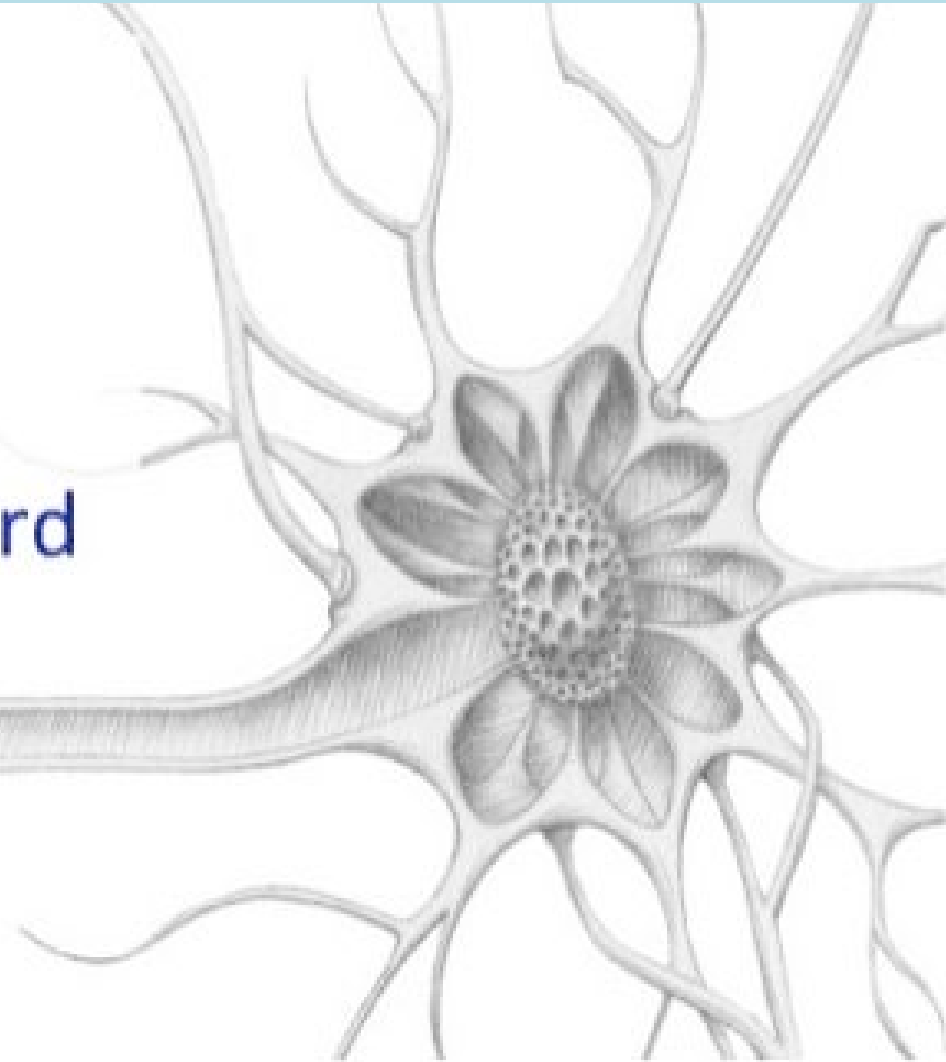
Remix

Repurpose

Feed Forward



ARRFF



# Feed Harvesting

Listing 0 to 1000 of 14 feeds

- [Analyze][Harvest][Retire] [Edit] [Delete] Links: A french point of view for edfuture (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: All The Young (edu)Punks (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Ben Harwood (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Blogue de Florian Meyer (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: creative becoming (category)
- [Approve] [Edit] [Delete] Links: Current/Future State of Education | Content (Student)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Educational Technology and Change Journal (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Learner Weblog (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Lifelong Learner » CFHE12 (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: Mox Box (category)
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: OPENBLOCK (Public) F
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: RJ Hogue Consulting (S
- [Analyze][Approve] [Edit] [Delete] Links: Science of the Invisible (categ
- [Analyze][Harvest][Retire] [Edit] [Delete] Links: This is my feed title (cat

YOU ARE LOGGED IN AS ADMIN [OPTIONS] [LOGOUT]

General Harvester Users Newsletters Database Meetings Logs Permissions Viewer

## Harvester

On this page you can manage and operate your harvester. To turn on automated harvesting, set 'Enable Harvester' to 'yes' (requires cron). The harvester will process one feed every 'Harvester Interval' minutes. To add, manage and delete content sources, create, edit and delete feeds (see the menu at left) or use the OPML options below.

### Enable Harvester

Enable Harvester:

Harvester Interval:

### Operate Harvester

- Harvest Next In Queue
- Harvest Feed:
- Harvest URL:
- Harvest File:

YOU ARE LOGGED IN AS ADMIN [OPTION]

General Harvester Users Newsletters Database Meetings Logs Permissions View

### Edit Feed

[\[VIEW FEED\]](#) [\[LIST ALL FEEDS\]](#) [\[CREATE NEW FEED\]](#) [H]

Title:

Link:

Html:

Baseurl:

Feed Category:

Genre:

Feed Type:

Class:

# Viewing and Posting

## List links

Find:  Sort:

Listing 0 to 100 of 80 links

- [Edit] [Delete] text/html An Open Online Course on the Current and Future State of Higher Education.
- [Edit] [Delete] text/html Madness vs. method (0 hits)
- [Edit] [Delete] text/html Following the sun (0 hits)
- [Edit] [Delete] text/html Walking the talk – creative praxis
- [Edit] [Delete] text/html It's like a jungle ... metaphors for
- [Edit] [Delete] text/html A forest ... more metaphor wrapped
- [Edit] [Delete] text/html The guru of praxis ... (0 hits)
- [Edit] [Delete] text/html Threshold concepts, liminality, and
- [Edit] [Delete] text/html From trees to rhizomes, a line of
- [Edit] [Delete] text/html back to the future – ePortfolios
- [Edit] [Delete] text/html Cultivating my digital garden (0 hits)
- [Edit] [Delete] text/html Presenting with the iPad – Part 1
- [Edit] [Delete] text/html How I'm going to participate in
- [Edit] [Delete] text/html How I use my iPad (0 hits)
- [Edit] [Delete] text/html My Mobile Device List (0 hits)
- [Edit] [Delete] text/html Setting up your personal iPad for
- [Edit] [Delete] text/html Workflows – Annotating PDFs with
- [Edit] [Delete] text/html Using iAnnotate to mark student
- [Edit] [Delete] text/html Using Siri to take notes on my

You are logged in as **admin** [Op]

### Viewer

Displaying resource number 80 of 80

<< < > >>

Status: Fresh [POST] [EDIT]

## An Open Online Course on the Current and Future State of Higher Education.

Source: [Lifelong Learner » CFHE12](#), by Claudia Scholz. Claudia's Personal Learning Portfolio and Journal  
Date: October 8, 2012

I am far too busy to sign up for another MOOC! Nevertheless, I've added myself to the open online course on the Current and Future State of Higher Education. Part of the reason is that the topics are things that I might want to blog about anyway, and the course is a way of structuring and [...] Direct Link: [http://claudiascholz.wordpress.com/2012/10/05/cfshe\\_1/](http://claudiascholz.wordpress.com/2012/10/05/cfshe_1/)

**Comment**

[Post Comment]

**Tag:**

**Feed:**   
A french point of view for edfut  
All The Young (edu)Punks  
Ben Harwood  
Blogue de Florian Meyer

**Category:**

[SUBMIT]

# Mixing and Publishing

## Publishing Options

Publish to:

Archive page?  [\[View Page Archive\]](#)

Autopublish?  How often?

Note that pages are also autopublished and archived when sent as newsletters.

## Newsletter Options

Enable newsletter subscriptions?

Auto-send newsletters turned on?

Autosubscribe to this newsletter?

Weekdays	Days of Month	Time
<input type="text" value="Sunday"/> <input type="text" value="Monday"/> <input type="text" value="Tuesday"/> <input type="text" value="Wednesday"/> <input type="text" value="Thursday"/>	<input type="text" value="01"/> <input type="text" value="02"/> <input type="text" value="03"/> <input type="text" value="04"/> <input type="text" value="05"/>	<input type="text" value="9"/> : <input type="text" value="00"/>

When should the newsletter be published and sent? Select more than one weekday or date as desired

## Description

```
<h2>Discussion Posts</h2>
<p style="font: 400 12pt/16pt Verdana,Arial, sans-serif; color: #000040;">Discussion posts will be available here.
</p>
```

```
<h2>Delicious Links</h2>
```

```
<p style="font: 400 12pt/16pt Verdana,Arial, sans-serif; color: #000040;">Links from the shared bookmarking site delicious.
<a href="http://www.delicious.com/tag/cck11">Add your own bookmarks</a> and be sure to tag them as CCK11.</p>
```

```
<keyword db=link;expires=24;truncate=500;format=email;feedid=2637;all;sort=crdate DESC>
```

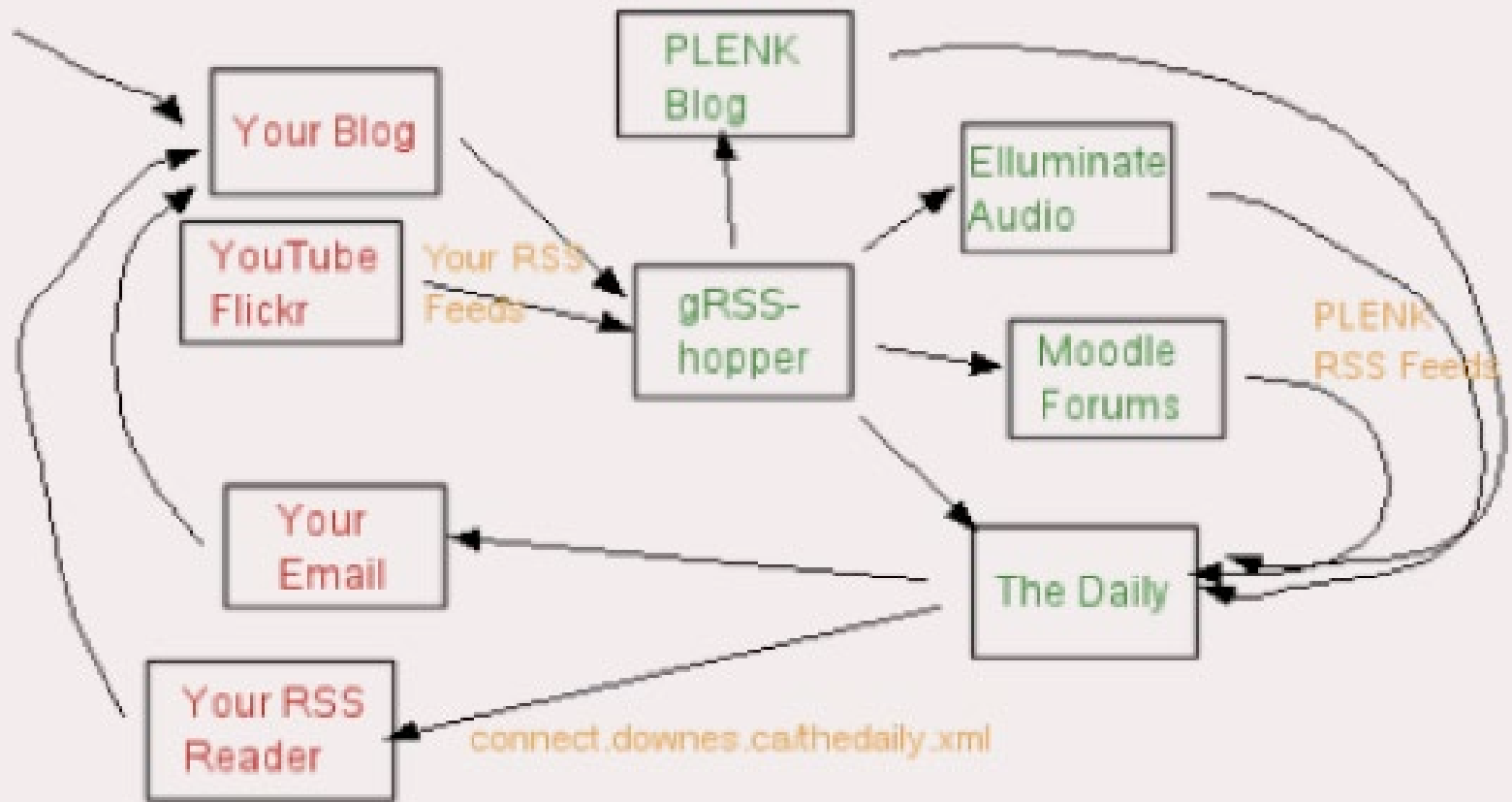
```
<keyword db=link;expires=24;truncate=500;format=email;feedid=2641;all;sort=crdate DESC>
```

```
<h2>Twitter Posts</h2>
```

```
<p style="font: 400 10pt/12pt Verdana,Arial, sans-serif;color:#000040;">
<keyword db=link;type=twitter;format=twitter;sort=crdate DESC;expires=24>
</p>
</div>
```



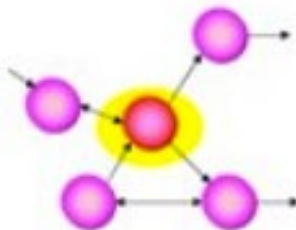
# Course Content Network



# Unstable Networks

- Cascade Phenomena – what causes them?  
What are the consequences?

A Node Feature Analysis



•Centrality Analysis

- Degree
- Betweenness
- Closeness
- k-core

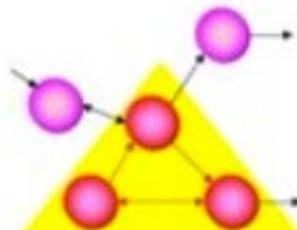
...

•Node Removing test

- Shortest path length
- Articulation points

...

B Structural Properties

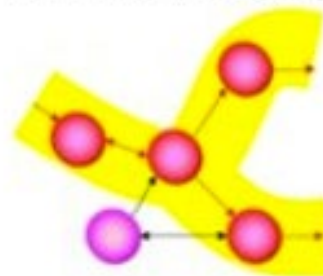


• Structural Feature

- Network density
- Clustering index
- Shortest path length
- k-cycle

....

C Characteristics of Pathways



•Pathway Analysis

- k-shortest path
- Equal length path

...

•Network Similarity Analysis

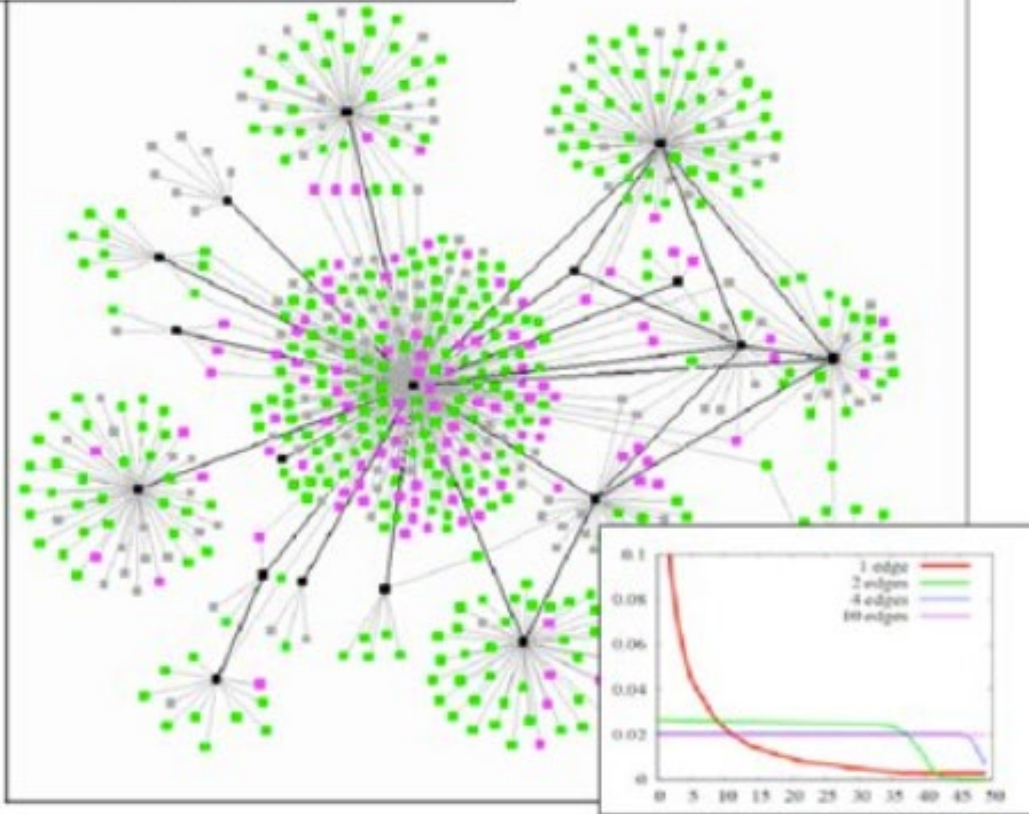
- Cosine correlation

...



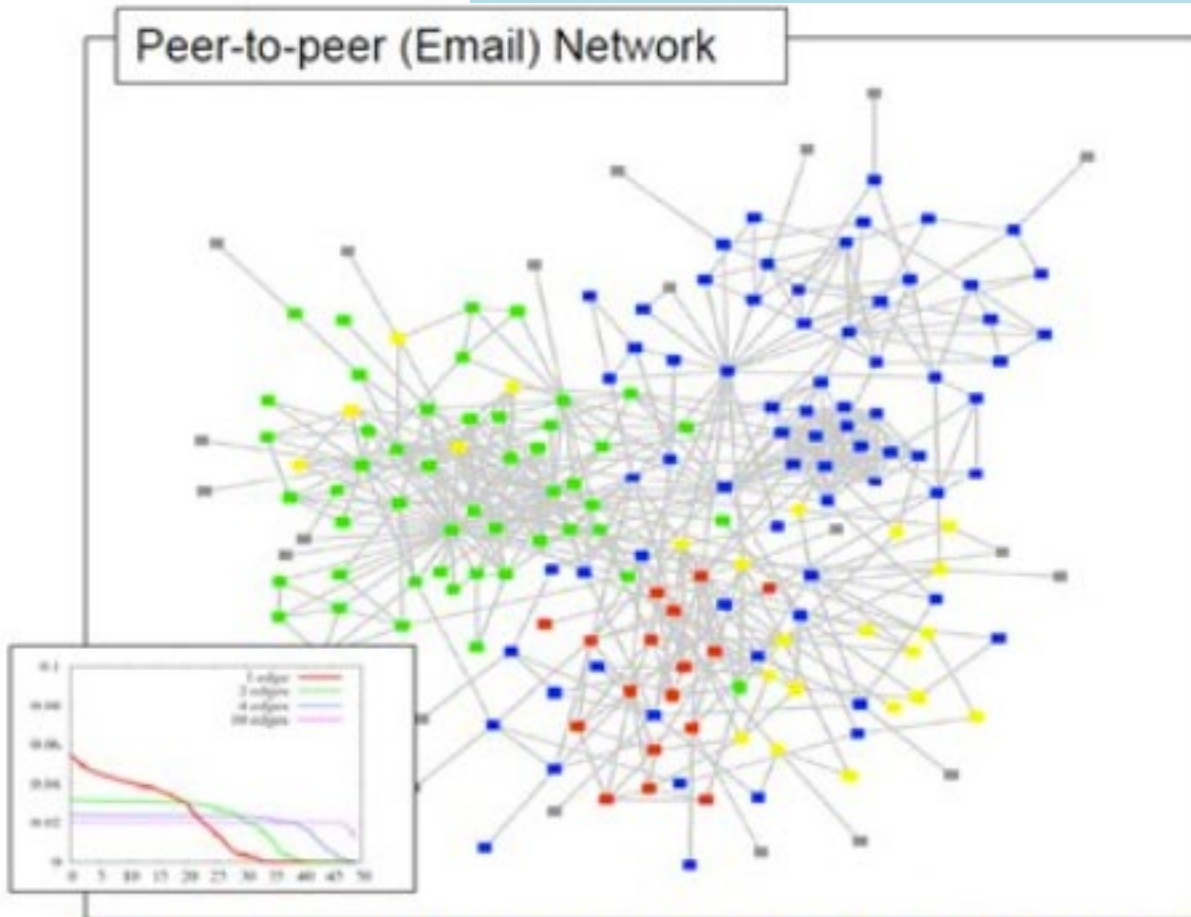
# Unstable Networks

Traditional social network



Central  
Influence  
Power Law  
Viral  
Hierarchy

# Stable Networks

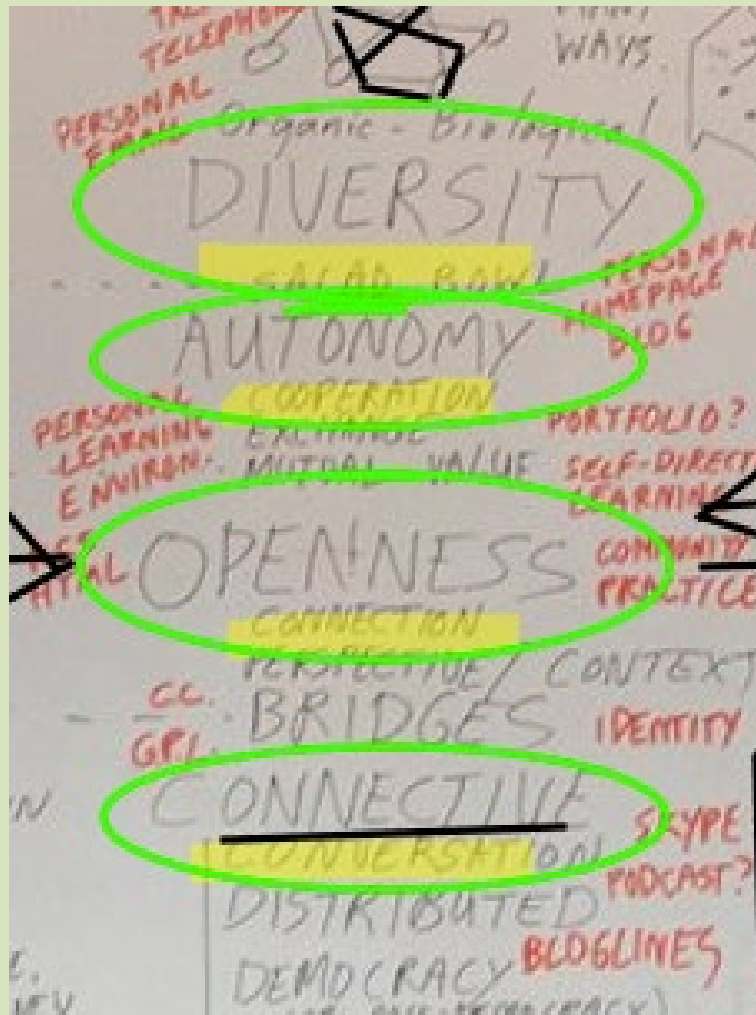


Distributed  
Discussion  
Balanced  
Reflective  
Democracy

<http://www.daniel-lemire.com/fr/abstracts/DIVERSITY2008.html>

<http://www.mailchimp.com/blog/using-email-to-uncover-hidden-social-networks/>

# The Semantic Principle



b 2.0, E-learning 2.0 and the New Learning 4 years ago

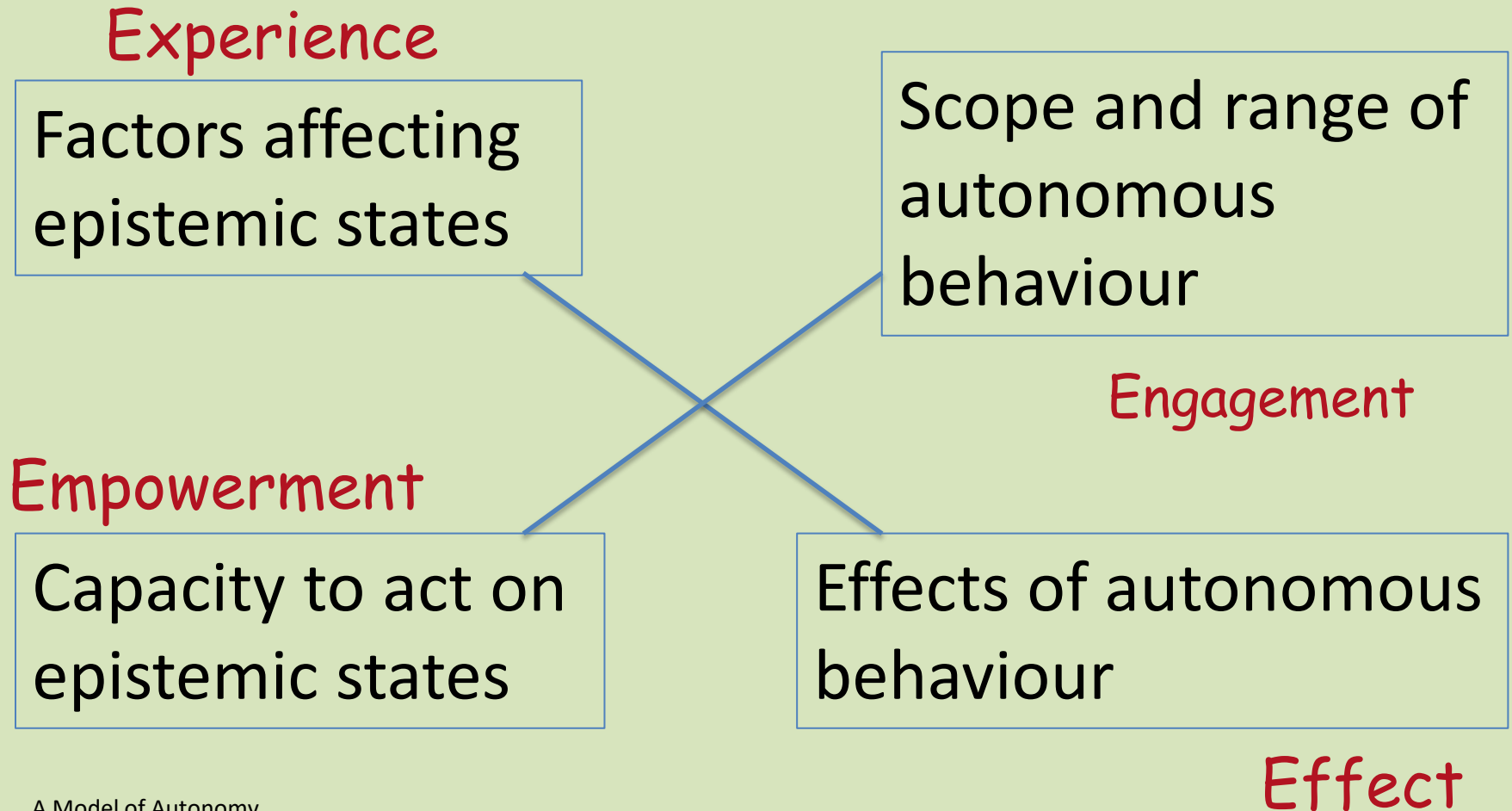
Email Favored x Download Embed Zipcast More...

## The Semantic Principle

- Groups require unity, networks require diversity
- Groups require coherence, networks require autonomy
- Groups require privacy or segregation, networks require openness
- Groups require focus of voice, networks require interaction

<http://www.downes.ca/cgi-bin/page.cgi?post=35839>

# 4-factor Model of Autonomy



# Connectivism and Effect (1)



1. While at the same time emphasizing the personal, maximize effect range and impact  
Connectivist courses support massive participation and growing impactful engagement in community

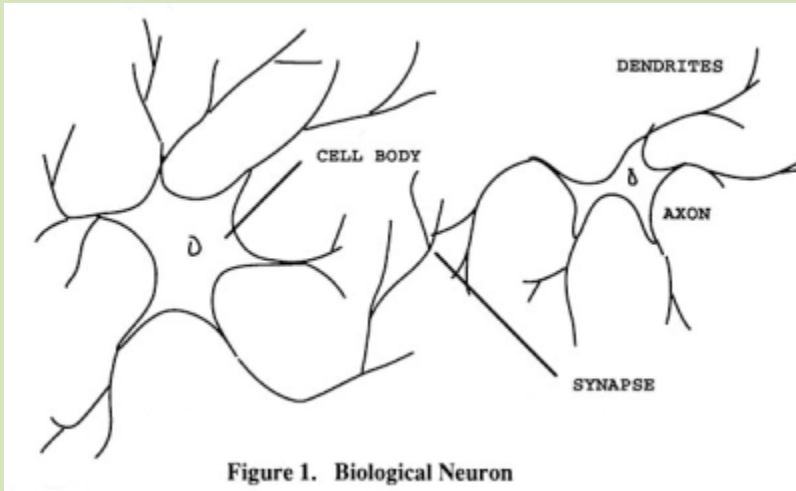
# Connectivism and Effect (2)



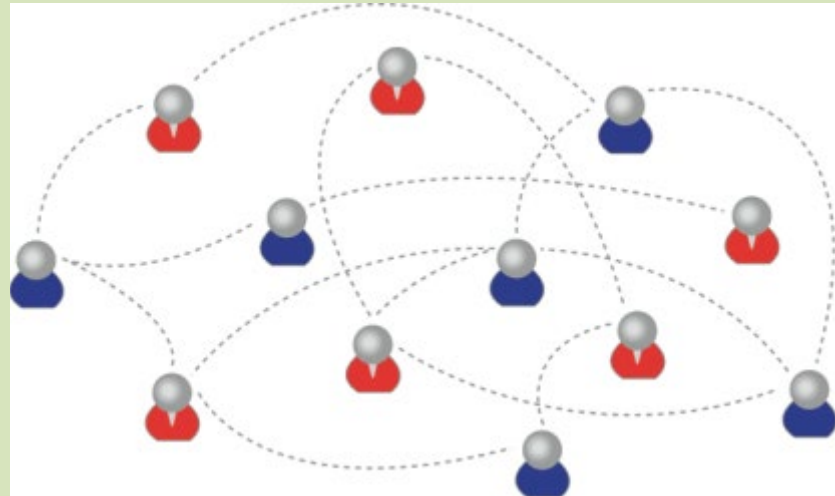
1. Recognize and support the potential for improvements both social and personal

The impact of connectivist courses is measured by one's engagement and improvement in the wider knowledge community

# Learning Outcomes



We recognize this



By performance in this

There are not specific bits of knowledge or competencies, but rather, personal capacities  
(more on this later)

# 2010: Stephen Downes, Rita Kop Critical Literacies & PLENK 2010



## PLENK2010

Personal Learning Environments  
Networks and Knowledge 2010

home discussion wiki the daily blog live sessions recordings about

YOU ARE NOT LOGGED IN. [\[LOGIN\]](#) [\[REGISTER\]](#)

### Schedule

WEEK OF...  
12TH SEPTEMBER 2010  
[A TOUR OF PLES AND PLNs](#)

19TH SEPTEMBER 2010  
[CONTRASTING PLES WITH LMSs](#)

26TH SEPTEMBER 2010  
[THE NEXT/EXTENDED WEB](#)

3RD OCTOBER 2010  
[PLE/PLN AND LEARNING THEORIES](#)

10TH OCTOBER 2010  
[EVALUATING LEARNING IN PLE/Ns](#)

17TH OCTOBER 2010  
[USING PLES SUCCESSFULLY](#)

24TH OCTOBER 2010  
[PLE/Ns TOOLS](#)

### Welcome to the Course



SEE! I CAN PLENK, TOO!

If you would like to register for PLENK2010 there's still time to register.  
[Click here to Register](#)

PLENK 2010 involved a significant research effort

<http://connect.downes.ca/>



# PLENK Analytics



Rita Kop

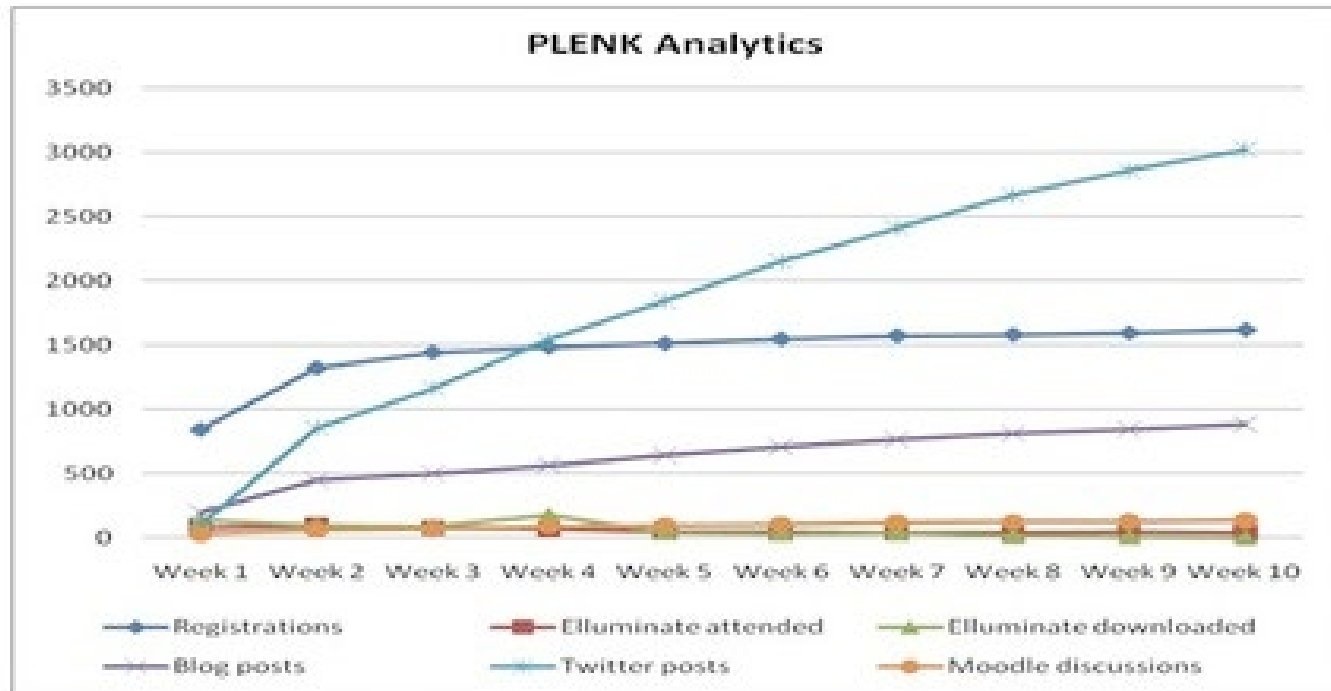


Chart 2. PLENK participation rates.

Supporting ongoing MOOC participation

<http://www.irrodl.org/index.php/irrodl/article/view/882>

# Critical Literacies

A frame for understanding new media  
Morris, Derrida and a little Lao Tzu

Syntax	Cognition
Semantics	Context
Pragmatics	Change



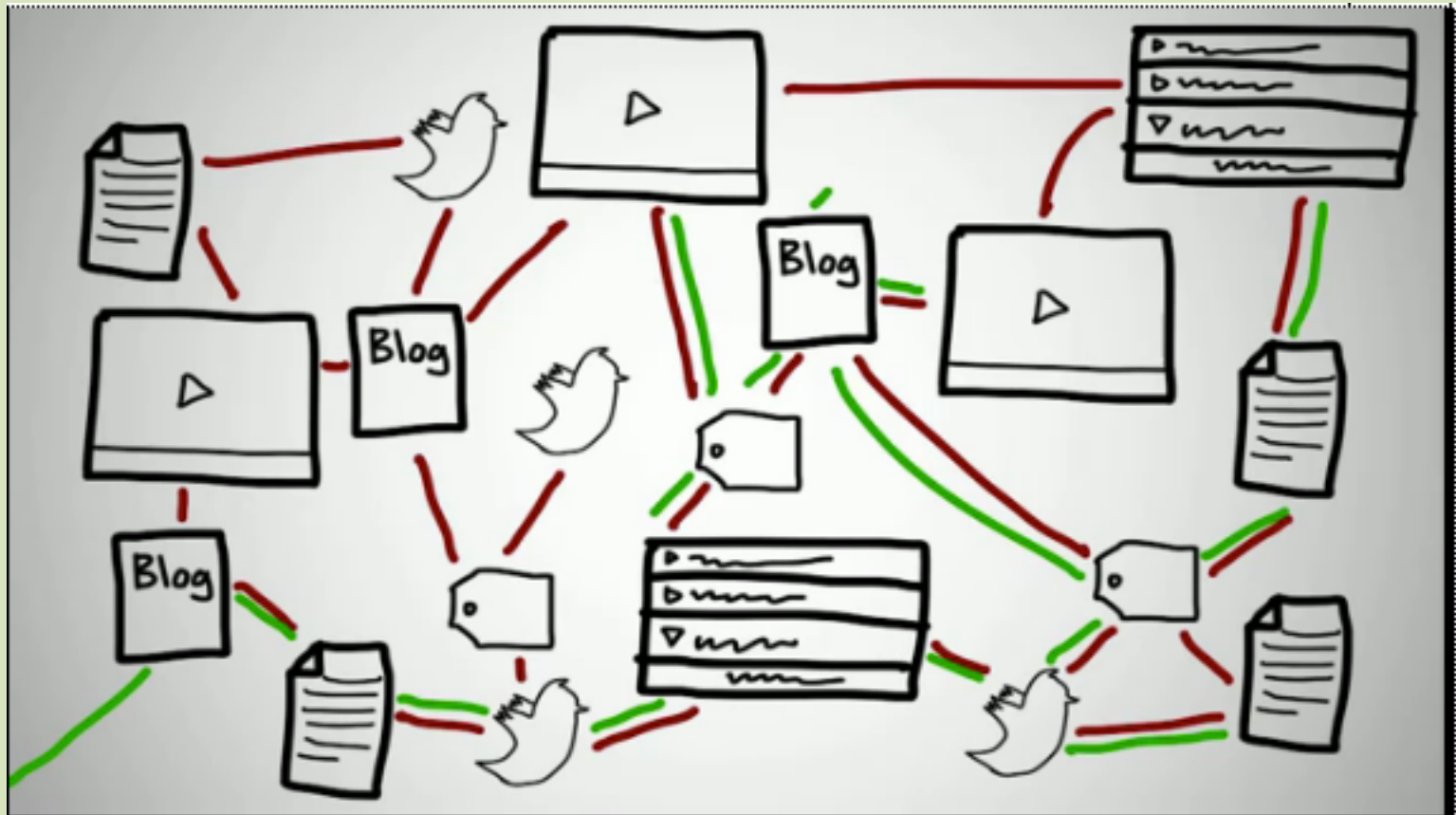
Understanding how we use artifacts to  
*communicate* in online and other learning  
networks

<http://www.downes.ca/presentation/232>

# 2011: Year of the MOOC



# Connectivism & Connective Knowledge



CCK11: How to Learn in a MOOC

<http://www.youtube.com/watch?v=eW3gMGqcZQc>

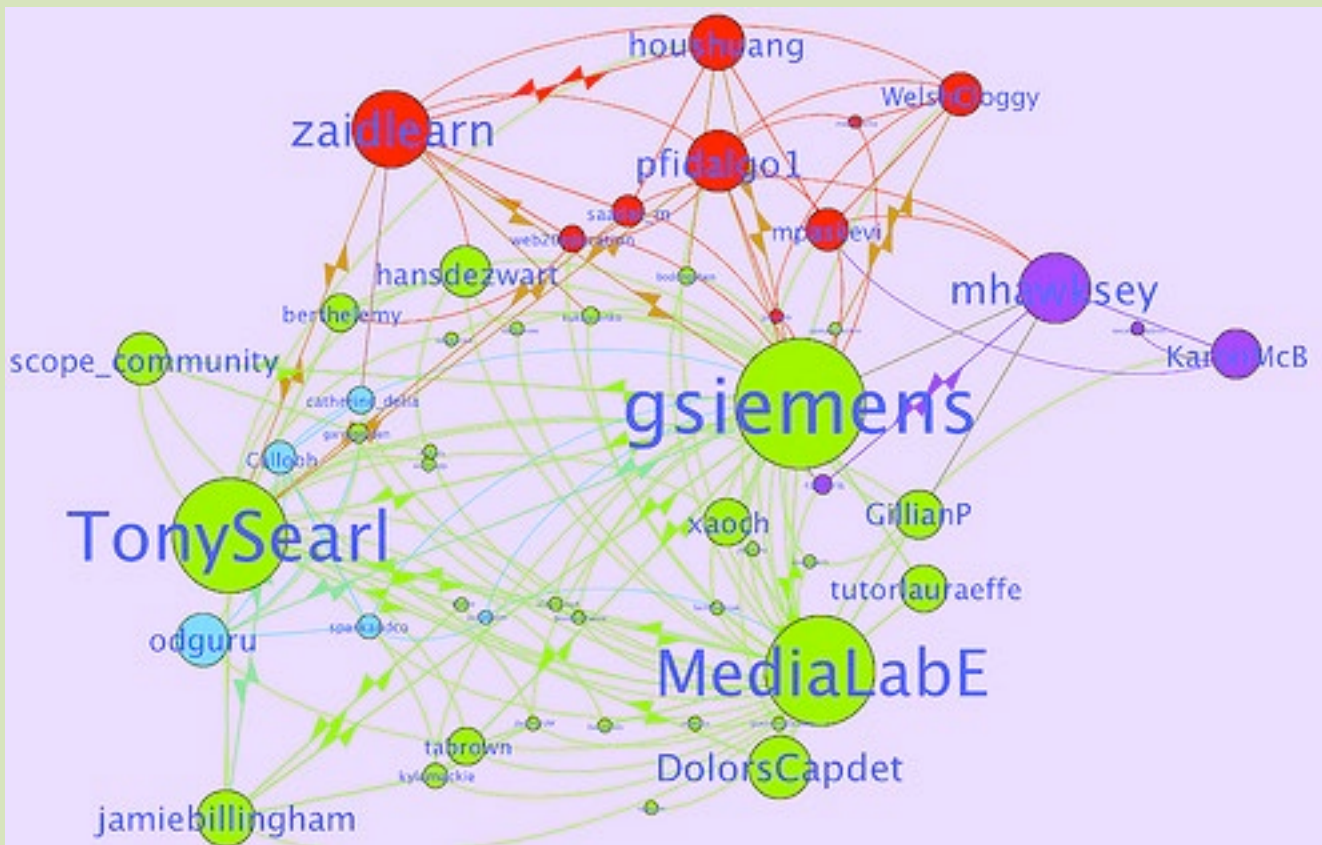
# How to be Successful in a MOOC



Dave Cormier

<http://www.youtube.com/watch?v=r8avYQ5ZqM0>

# Learning Analytics



LAK11: How to measure success in a MOOC

<http://scope.bccampus.ca/course/view.php?id=365>

# MobiMOOC



- ALL CATEGORIES
- VIA MOBIMOOC TEXT MESSAGE
- TWITTER #MOBIMOOC
- VIA MOBIMOOC CALL
- VIA MOBIMOOC EMAIL
- VIA CROWDMAP WEBSITE
- PROJECT: GGATIN (MANITOBA, CA)
- VIA SMARTPHONE APP
- PROJECT: SEAN ABAJIAN FIELD TESTS MLEARNING (LOS ANGELES, US)



Inge de Waard

Supporting Mobile Learning Technology

<http://mobimooc.wikispaces.com/>

# The madness and mayhem of DS106



Jim Groom

DS = Digital Storytelling

DS106 redefined activities and participation

<http://ds106.us/>



# eduMOOC

University of Illinois Springfield

A-Z Index | Search UIS

Welcome to the  
University of Illinois Springfield

At the time of an event, click the play button for the live webcast.

PLAY

UNIVERSITY OF ILLINOIS  
SPRINGFIELD

00:00 00:00

PLAY FULLSCREEN MUTE

eduMOOC  
Online Learning Today...and Tomorrow

twitter Join the conversation

Use the #edumoooc8 hash when you tweet your comments:

46

Join the Twitter Back Channel.  
(Twitter account needed. [Login](#) info requested on next screen.)

Tweet

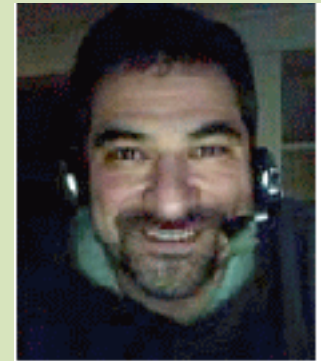
Copyright © University of Illinois Springfield

UIS Live Home Page

Large, well publicized, but not very interactive

<http://sites.google.com/site/edumoooc/>

# eduMOOC underground



Jeff  
Lebow

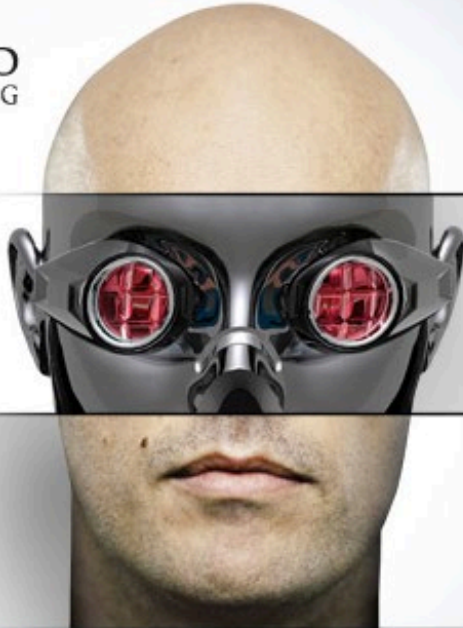
Jeff Lebow, Google+ hangout, and Livestream:  
Taking something ordinary, and making it something  
special – YOU make the MOOC

<http://www.livestream.com/jefflebow/>

# AI-Class: Redefining Massive



Oct. 10 ~ DEC. 16, 2011



INTRODUCTION TO

# Artificial Intelligence

**In partnership with the Stanford University School of Engineering.**  
You can join this online worldwide class this fall.

More than 100,000 people signed up for pre-registration

<http://www.ai-class.com/>

# Change 2011



Downes, Cormier and Siemens try again

Image: <http://steve-wheeler.blogspot.com/2011/04/running-mooc.html>

<http://change.mooc.ca>



Stephen Downes  
<http://www.downes.ca>