

# Decentralized Learning

The model, pioneered in such events as the Connectivism and Connective Knowledge course, revolves around the idea that there is no 'core' content which must be learned, but rather, a body of loosely related materials that different people explore in different ways in order to satisfy their own personal learning needs.

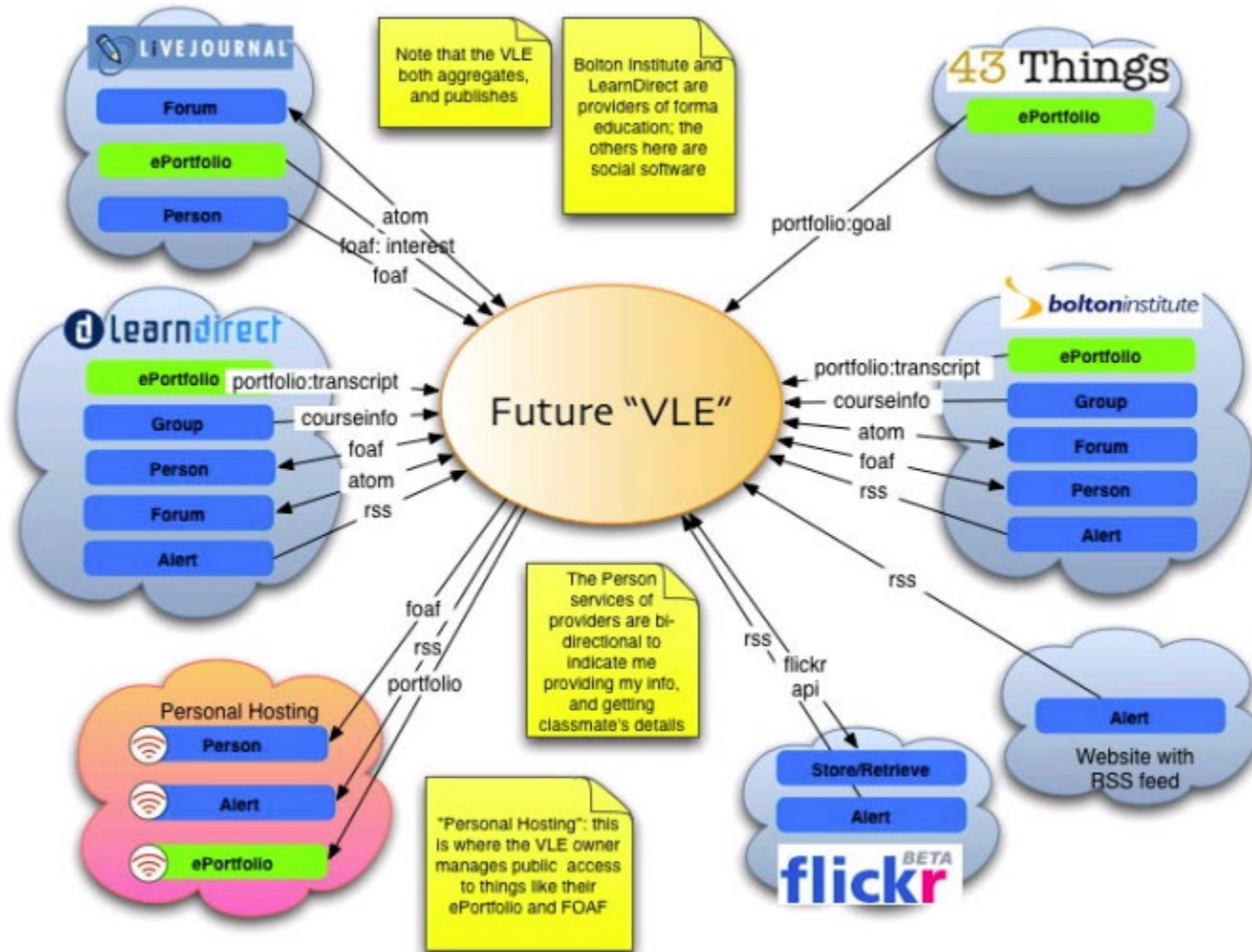
# Decentralized Learning

- Physical Organization
- Epistemology
- Pedagogy
- Success Factors

# Physical Organization

- The idea that a learning environment is distributed across a number of different sources
- The role of the student is to connect these sources and draw from them learning resources as needed

# Physical Model



# Personal Learning Environment

- Best thought of as an ecology in which learning takes place
- Is represented with the student thought of as being at the centre
- But is in fact a mesh or a web of interconnected students

# PLEX – Example of an Early PLE

The screenshot displays the Plex application interface, which is divided into several panes. At the top, there is a menu bar with 'File', 'Edit', 'Tools', 'Window', and 'Help'. Below the menu bar is a toolbar with various icons for file operations and navigation.

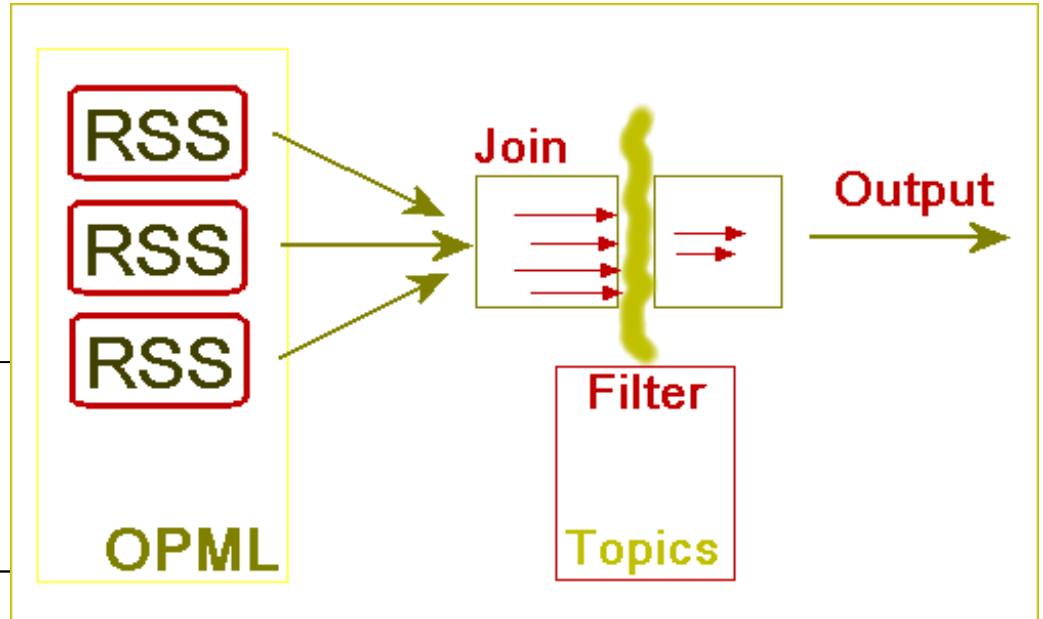
The main interface is divided into three main sections:

- Opportunities Explorer:** Located in the top-left pane, it shows a tree view of opportunities. The 'learn three chord rock guitar' opportunity is selected and highlighted.
- Opportunity Viewer:** Located in the bottom-left pane, it displays details for the selected opportunity. The title is 'learn three chord rock guitar', and the number of registered people is 1. The provider is '43 Things' and the location is 'http://www.43things.com/thing:'. There is a 'Browse' button next to the location field.
- Search Results:** Located in the top-right pane, it shows a list of search results for the query 'learn three chord rock guitar'. The results are displayed in a table with columns for Title, Provider, and Location. The first result is 'Leran to play the guitar like no one has ev...' from '43 Things' at 'http://www.4:'. The second result is 'learn to play acoustic guitar, also get a gu...' from '43 Things' at 'http://www.4:'. The third result is 'Learn to play the guitar guitar properly an...' from '43 Things' at 'http://www.4:'. The fourth result is 'meet Mcfly and just chill out with them an...' from '43 Things' at 'http://www.4:'. The fifth result is 'Create a music room downstairs, with a dr...' from '43 Things' at 'http://www.4:'. The sixth result is 'i wat to keep playing guitar and play infr...' from '43 Things' at 'http://www.4:'. The seventh result is 'i want to learn to play the guitar and then...' from '43 Things' at 'http://www.4:'. The eighth result is 'Sing and play bass guitar at the same tim...' from '43 Things' at 'http://www.4:'. There is a 'Find It!' button and a 'Filter results by:' field above the table.

At the bottom of the interface, there is a browser window showing the details of the selected opportunity. The address bar shows 'http://www.43things.com/things/view/161919'. The browser content shows a navigation bar with 'Home', 'Zeitgeist', and 'Log In' links, a search bar with a 'GO' button, and a green banner that says '1 person wants to do this...'. There is a 'Details' tab and a 'Search Results' tab at the bottom of the browser window.

[learn three chord rock guitar]

# Aggregation and Remixing



## MyGlu

By Stephen Downes

[About](#)

Force: 1

Harvesting <http://del.icio.us/rss/Downes>  
Feedfile is: myglu/feedcache/del.icio.us\_rss\_Downes  
No content. Harvesting from source.  
URL: <http://del.icio.us/rss/Downes>  
Parsing Feed=HASH(0x9f0f10c)

Harvesting <http://www.downes.ca/news/OLDaily.xml>  
Feedfile is: myglu/feedcache/www.downes.ca\_news\_OLDaily.xml  
No content. Harvesting from source.  
URL: <http://www.downes.ca/news/OLDaily.xml>  
Parsing Feed=HASH(0x9f0ef8c)

<http://www.downes.ca/mygluframe.htm>



# Feed Forward

The screenshot shows the FeedForward application window. It is divided into three main sections:

- Search Results:** A table with columns 'Title' and 'Date Published'. The table lists various articles, all dated '3 hours ago'. The article 'SWORD Implementations' is highlighted in blue. Below the table, there is a link to 'SWORD Implementations' and a snippet of text: ', Stephen's Web ~ OLDaily, Nov 30, 2007 6:47:05 PM'. Below this is a larger text preview for the 'SWORD Implementations' article, starting with 'SWORD has released its main technical outputs: "a profile of APP (Atom Publishing Protocol) which implementers can use to create SWORD deposit clients or SWORD interfaces into repositories; and test implementations of the SWORD interface in DSpace, EPrints, IntraLibrary and Fedora; two demonstration clients which can be used to deposit into the implementations; and code for use with DSpace, Fedora, EPrints and the demonstration client." Cool. Julie Allinson, UKOLN, November 30, 2007 [Tags: Content Syndication, Learning Object Repositories] [Link] [Comment]'. At the bottom of this section is a 'Links' field.
- Text Preview:** A vertical list of search results. The top item is 'test (5)'. Other items include 'another one (3)', 'and yet another testing context (3)', 'packaging test (2)', 'testing the atom support (9)', 'link testing (4)', 'another link test (10)', and 'Untitled (14)'. The 'link testing (4)' item is highlighted in blue.
- Feeds:** A vertical list of feeds, each with an icon and a red arrow pointing down. The feeds are: 'Make It Sol', 'SWORD-ePrints', 'SWORD-Intralibrary', 'My del.icio.us bookmarks', 'Just a Testing Weblog', 'Simpy bookmarks', and 'Magnolia'.

At the bottom of the window, there are navigation controls including a search bar, a list icon, a magnifying glass icon, and a slider.

# Connective Knowledge

- The knowledge created and shared by an interconnecting community of learners
- Knowledge is distributed
- Knowledge is created by conversation and interaction

# Role of the Learner

- Participates and engages in a community
- Participation is guided by personal interest and motivation
- (Not staged, akin to Lave & Wenger, no hierarchy of interaction, akin to Salmon, Carr)

# The Connectivism Course

- A good example of such a learning network
- There was no 'right' way to interact
  - No set of processes to master or undertake
  - No specific body of knowledge to assimilate
- The connectivist course is an example of open sharing

# Connectivism

“At its heart, connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks.”

*What Connectivism Is*

<http://halfanhour.blogspot.com/2007/02/what-connectivism-is.html>

# Course Components

- The Wiki...



The screenshot shows a web page for the 'Connectivism' wiki. At the top right, there is a 'Log in / create account' link. Below this are navigation tabs for 'page', 'discussion', 'view source', and 'history'. The main heading is 'Connectivism'. Below the heading, there is a welcome message: 'Welcome to the **Connectivism and Connective Knowledge Online Course** support wiki.' This is followed by 'Conference tags: CCK08'. A paragraph states: 'This page is also available in: [Spanish](#), [Portuguese](#), [Italian](#), [Hungarian](#), and [Chinese](#) (Simplified Character Version). See also [this short post](#) on making surfing in China easier].' Another paragraph says: 'This course also has a Facebook group at [CCK08](#).' Below this is a 'Contents [hide]' section with a numbered list of 11 items: 1 Please enter your email address here if you'd like to be involved (either for free participation or to enroll for cre...; 2 Course blog is available here; 3 Course Details; 4 Weekly Activities; 5 Learner Assignments and Evaluation; 6 Course Links; 7 Pre-week 1; 8 Week 1: What is Connectivism? (September 8-14); 9 Week 2: Rethinking epistemology: Connective knowledge (September 15-21); 10 Week 3: Properties of Networks (September 22-28); 11 Week 4: History of networked learning (September 29-October 5).

**LTC**  
Learning Technologies Centre

Log in / create account

page discussion view source history

## Connectivism

Welcome to the **Connectivism and Connective Knowledge Online Course** support wiki.

Conference tags: CCK08

This page is also available in: [Spanish](#), [Portuguese](#), [Italian](#), [Hungarian](#), and [Chinese](#) (Simplified Character Version). See also [this short post](#) on making surfing in China easier].

This course also has a Facebook group at [CCK08](#).

**Contents [hide]**

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**navigation**

- [Main Page](#)
- [Recent changes](#)
- [Random page](#)
- [sandbox](#)
- [Help](#)

**ltc links**

- [LTC Website](#)
- [Activities](#)
- [Workshops and Resources](#)
- [Teaching with Technology](#)

**um projects**

- [Educational Psychology](#)

<http://ltc.umanitoba.ca/wiki/Connectivism>

# Course Components

- Course Moodle Forum

The screenshot shows a Moodle course page for 'Connectivism and Connective Knowledge'. The page is titled 'Connectivism and Connective Knowledge' and indicates that the user is currently using guest access. The course is part of the 'CCK08' series. The page is divided into several sections:

- Bloglines:** A list of recent forum posts, including one about reading the Moodle forum and another about connecting to the forum.
- Topic outline:** A list of course topics, including 'Introductions', 'Google Map of participants', 'General Forum', 'Connectivas Spanish pageflakes site', 'Connectivism English Pageflakes site', and 'Week 1: What is connectivism'. The first topic, 'What is Connectivism?', is currently selected.
- Calendar:** A calendar for September 2008, showing global events (green) and course events (orange). The 9th of September is highlighted.
- Connectivism Course Blog:** A blog post titled 'Comparing Connectivism' by Bill Kerr, discussing different theories of learning.

<http://lrc.umantoba.ca/moodle/course/view.php?id=20>





# Connectivism as Engagement

- There is no curriculum, no theory, no body of knowledge
  - (or, more accurately, the curriculum is the McGuffin)
- The product is not the knowledge, it is the *learner*
- It's not that there's nothing to learn, it's that it's *complex* and needs to be navigated...



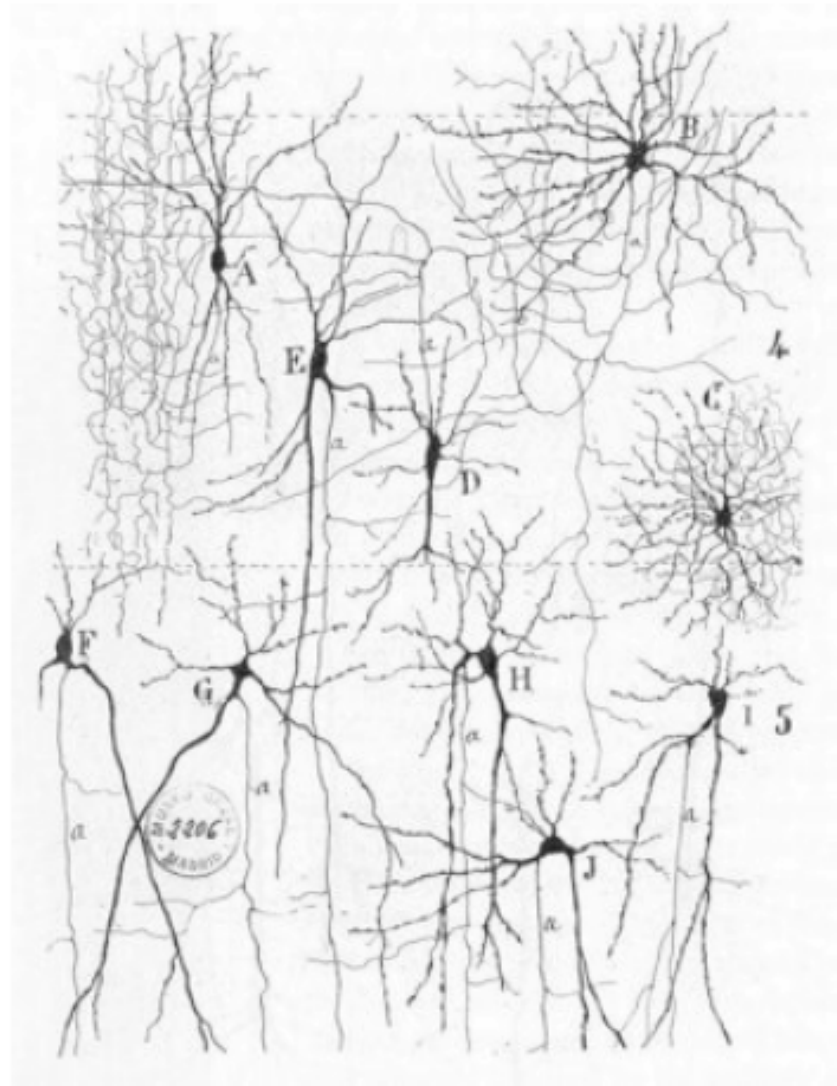
active engagement, not passive observation...

- a bit like ANT, but no presumption of commonality, translation...
- a bit like action research, but no presumption of a community of practice

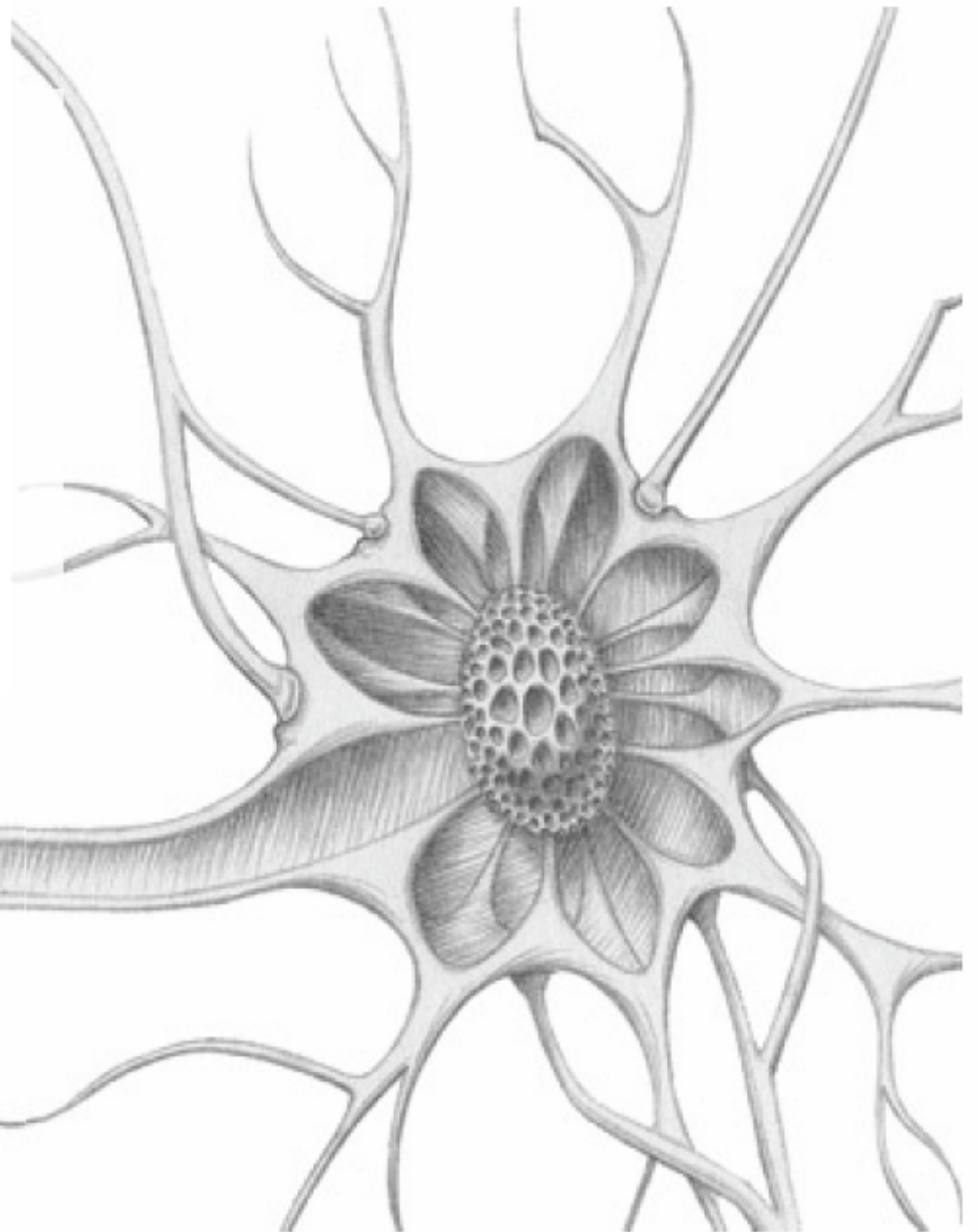
[http://carbon.cudenver.edu/~mryder/itc\\_data/ant\\_dff.html](http://carbon.cudenver.edu/~mryder/itc_data/ant_dff.html)

<http://www.emtech.net/actionresearch.htm>

- Teachers are nodes, students are nodes
- Both teaching and learning consists of sending and receiving communications to other nodes



Aggregate  
Remix  
Repurpose  
Feed Forward

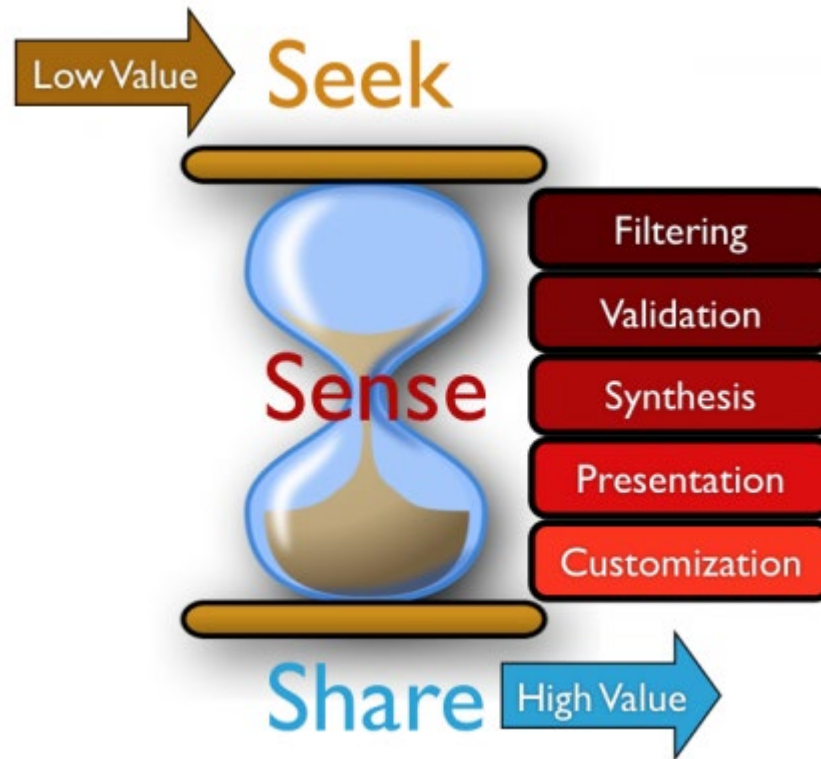


ARRFF

# Epistemology

- Contrast between knowledge *transmission* and knowledge *production*
- The distributed model draws on learner-centered and constructivists models

# Knowledge Production



<http://www.jarche.com/2010/03/sense-making/>

# Knowledge Production As...

## Mining

- data is like a raw material that is searched for and retrieved. It can be filtered, assessed and remixed
- You add value by creating more and more refined metals, alloys, compounds and materials out of what was there



# Knowledge Production As...

## Construction

- data is like a raw material, but you work with it with your hands, and create something new
  - add value to it by giving it form and function.
- Knowledge construction gives you the ability to create abstractions, to treat raw materials as signs and symbols





# Knowledge Production As...

## Growing

- data is like a raw material that serves as a nutrient or growth medium
- The raw material nourishes and contributes to the growth of the organism, which in turn creates something new and unexpected



# Different Emphases

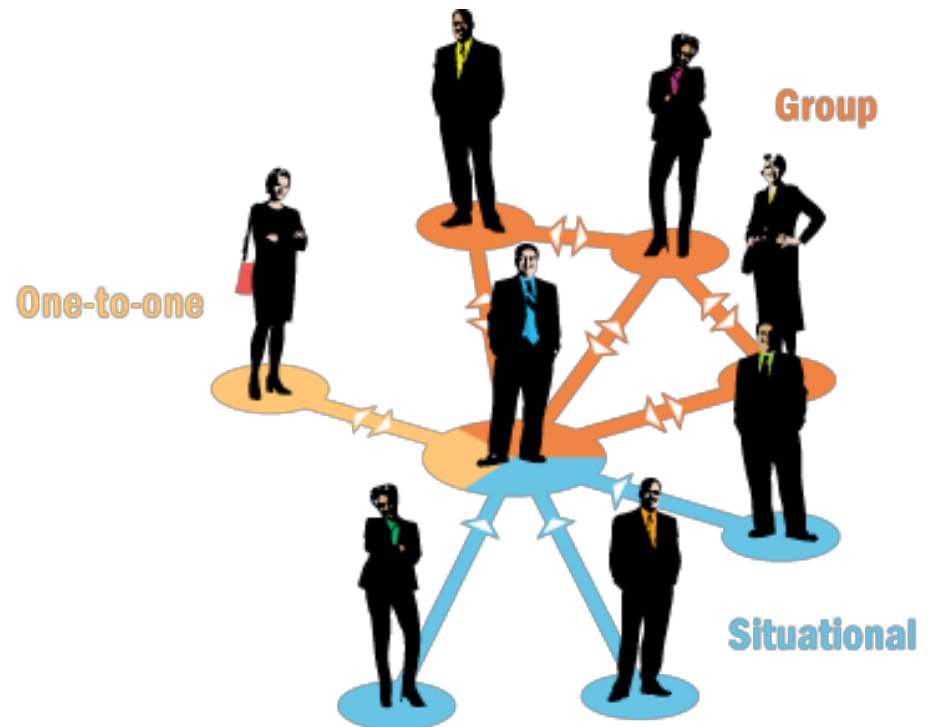
- Mining – accuracy and purity
- Construction – sameness and identity
- Growth – creation and creativity

Each depends in some way on the other

- Filtering requires a sense of purpose
- Constructing depends on being able to create
- Growth requires filtering and selection

# Pedagogy

- The next step in such a discussion is usually to describe a theory of social learning, depicting learning as an external process (or set of processes)



# Some Forms of Social Learning

- Behaviourism / Instructivism
- Interaction & Interaction Theory (Moore)
- Social Constructivism (Vygotsky)
- Problem-Based Learning (Johnsson)



# Aspects of Social Learning

- Externally-Based Definitions
  - Learning objectives, Body of Knowledge
- Externally-Based Processes
  - Learning activities, Processes and conversations
  - Interaction and communication
- External Systems
  - Classes, networks, groups, collaboration
- External Evaluation

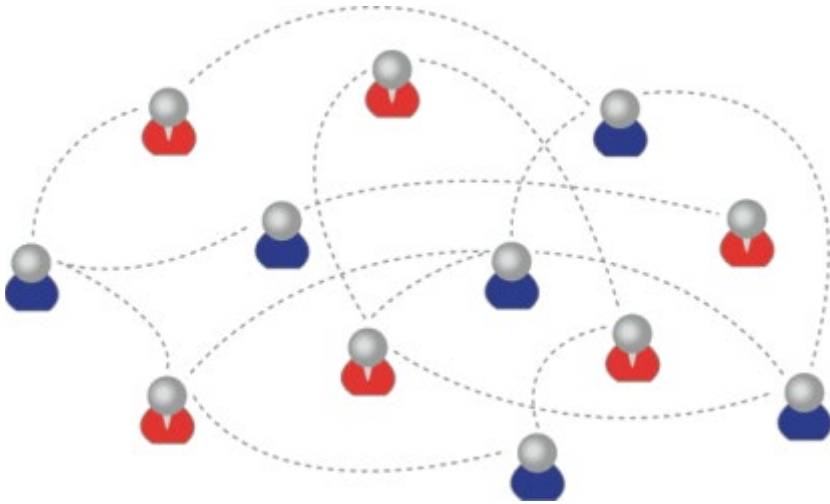
# If Knowledge is Growth, Then...

Social knowledge is *not* personal knowledge

- Personal Knowledge management = Learning
- Social Knowledge Management = Research

The product of the educational system is not a *social* outcome (knowledge, skill, problem, community) but a *personal* outcome

# Personal Knowledge



We are using one of these

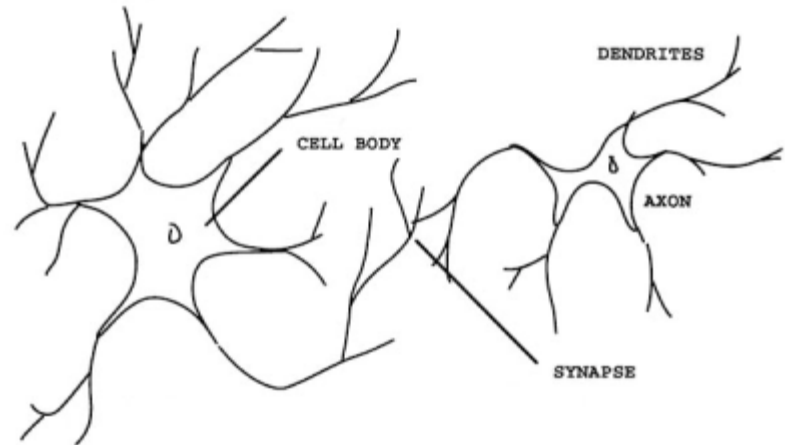


Figure 1. Biological Neuron

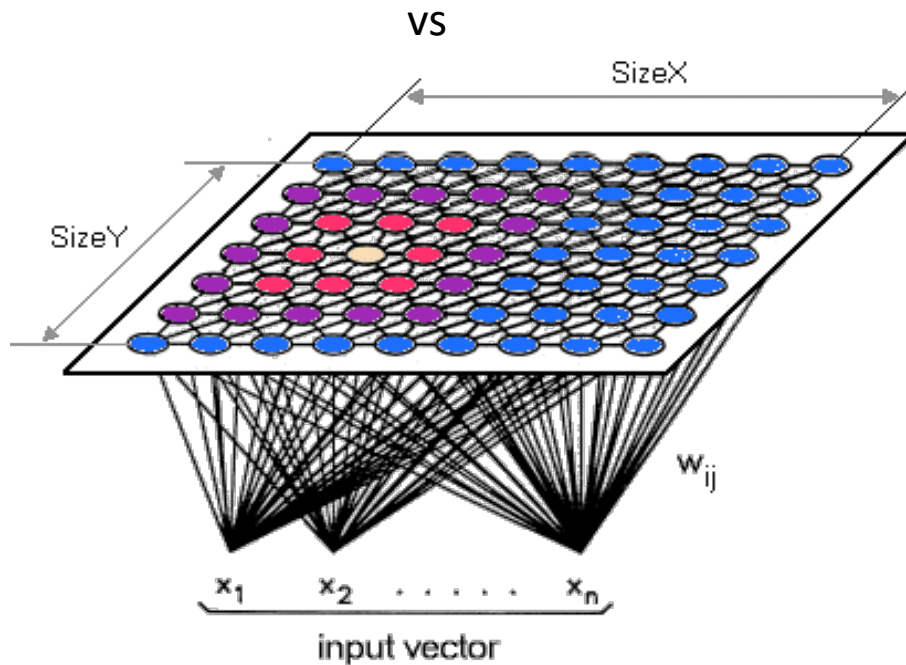
To create one of these

Personal knowledge consists of *neural* connections, not social connections

# Learning Outcomes

## Simple vs complex – text vs network

“Paris is the capital of France”





# Learning Outcomes (2)

It's the difference between:

- 'Knowing' that 'Paris is the capital of France' or even some sort of 'knowing how' (these are *external* definitions of this knowledge) and
- What it *feels like* to have geographical knowledge; what it *feels like* to be a speaker of a language

Learning a discipline is a *total state* and not a collection of specific states

# Learning Outcomes (3)

- Learning a discipline is a *total state* and not a collection of specific states
- It is obtained through *immersion* in an environment rather than acquisition of particular entities
- It is expressed functionally (can you perform 'as a geographer'?) rather than cognitively (can you state 'geography facts' or do 'geography tasks'?)

# Learning Outcomes (4)

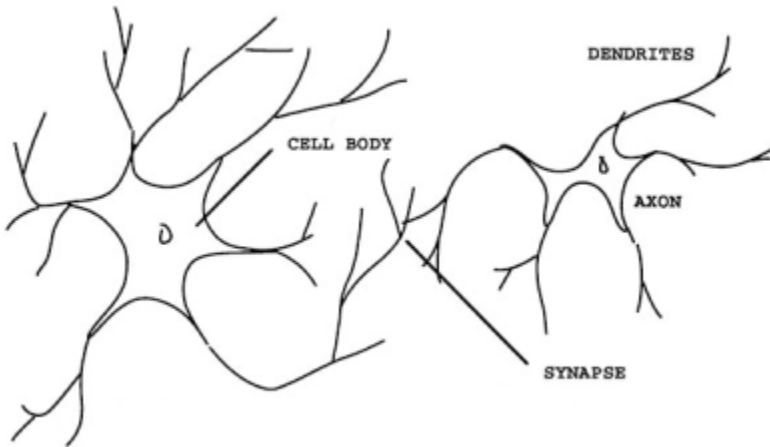
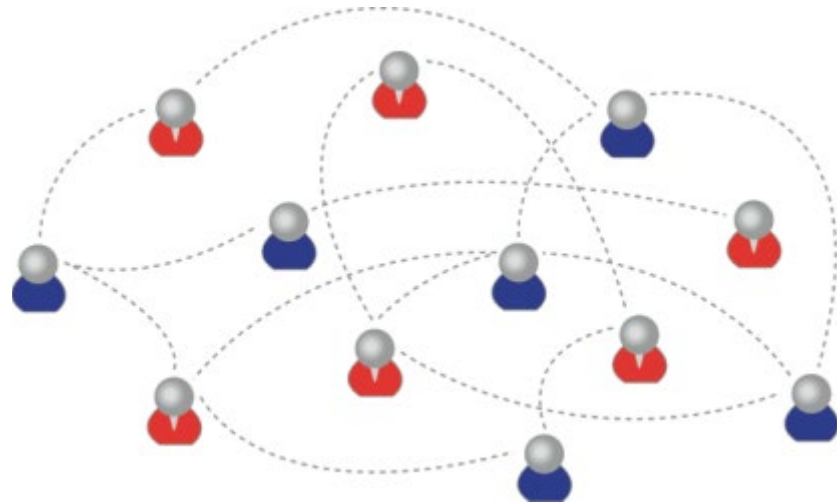


Figure 1. Biological Neuron

We recognize this



By performance in this

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

# Success Factors

- What sort of decentralized network will best support learning-as-growth?



# Diversity

- You need a mixture of materials – you cannot grow organically from carbon alone, or water alone



# Openness

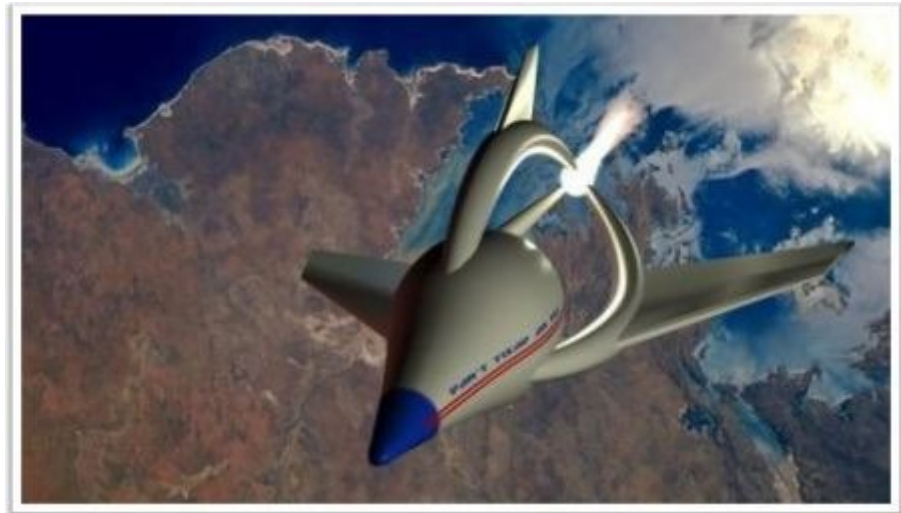
- Closed systems become stagnant
- Raw materials are depleted
- The system becomes clogged with the 'creative product' of its members





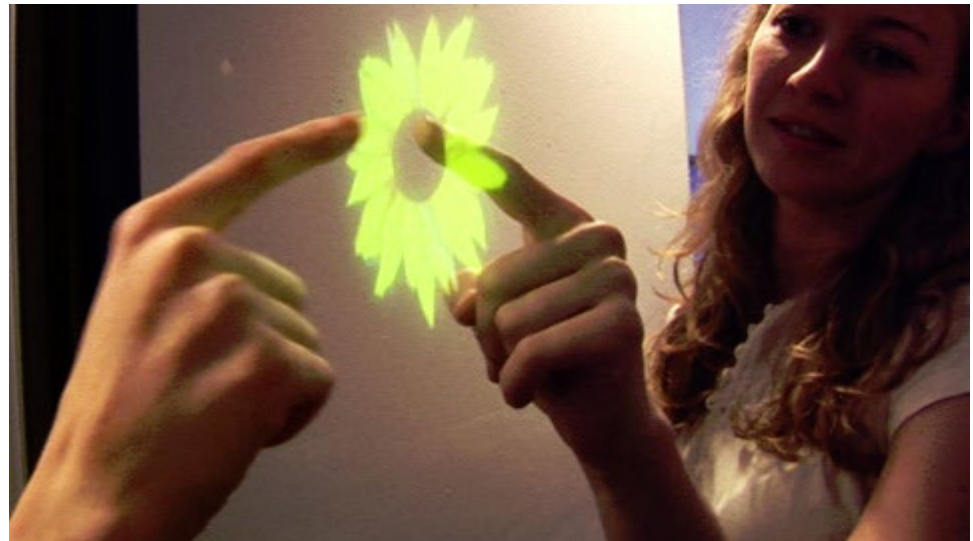
# Autonomy

- The simple cloning of entities does not allow for progress or development
- Each individual entity must manage its own growth in its own way



# Interactivity

- A system cannot grow unless its parts interact – flowers need bees, cows need grain, beavers need trees
- Growth is created not by accumulation but by *flow*, by constant activation and interaction





# Stephen Downes



<http://www.downes.ca>