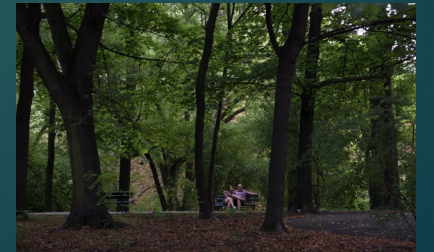
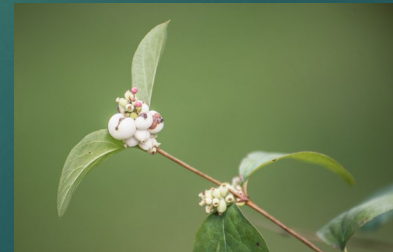


# Topics in Connectivism

STEPHEN DOWNES  
WARSAW, POLAND  
AUGUST 28, 2017



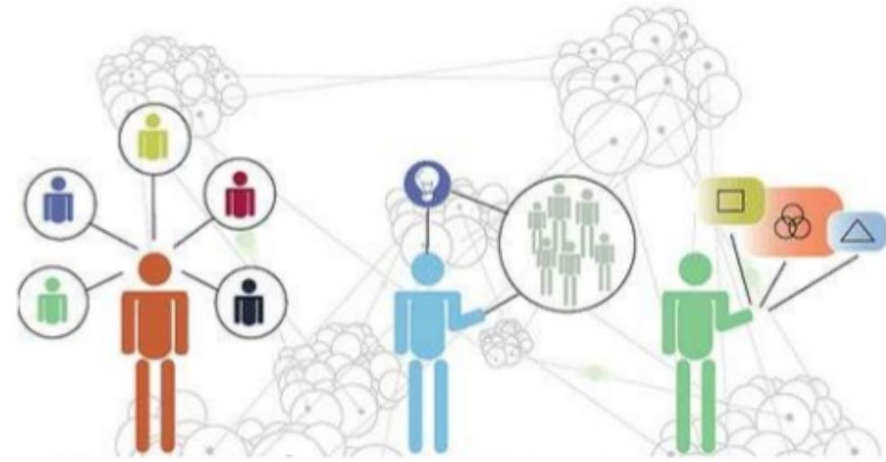
# Open Networks



# CURRENT WORK

---

- Elearning Landscape – TBA
- Future of eLearning – TBA
- Canada School of Public Service - <http://www.cspc-efpc.gc.ca/index-eng.aspx>
- CASS - <https://www.adlnet.gov/introducing-the-next-big-thing-cass/>
- MOOCs – yes, still – [http://www.federica.eu/c/connectivism\\_and\\_learning](http://www.federica.eu/c/connectivism_and_learning) <http://candl.mooc.ca>
- MOOC Aggregation Engine – <http://www.mooc.ca>
- Personal Learning Environments – gRSShopper in a Box – <http://grasshopper.downes.ca>
- Connectivism - <https://www.slideshare.net/CatherineFarrant/connectivist-learning-theory>



# MOOCS

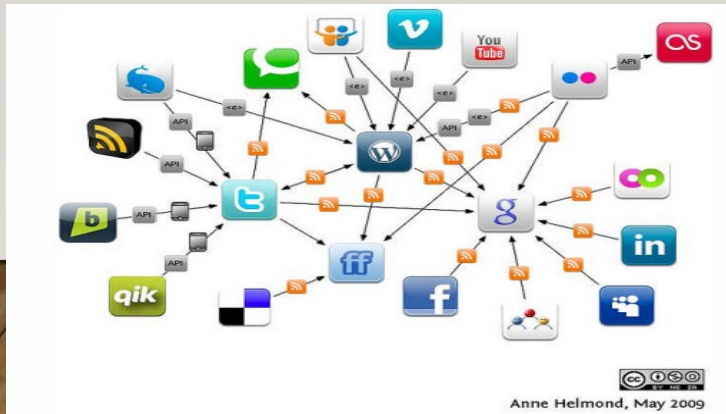
- True History of the MOOC -  
<https://sites.google.com/site/themoocguide/home>
- cMOOC and xMOOC -  
<http://www.tonybates.ca/2014/10/13/comparing-xmoocs-and-cmoocs-philosophy-and-practice/>
- FutureLearn -  
<https://www.futurelearn.com/>
- Personal Learning-  
<http://www.downes.ca/presentation/380>



# DISTRIBUTED SOCIAL NETWORKS

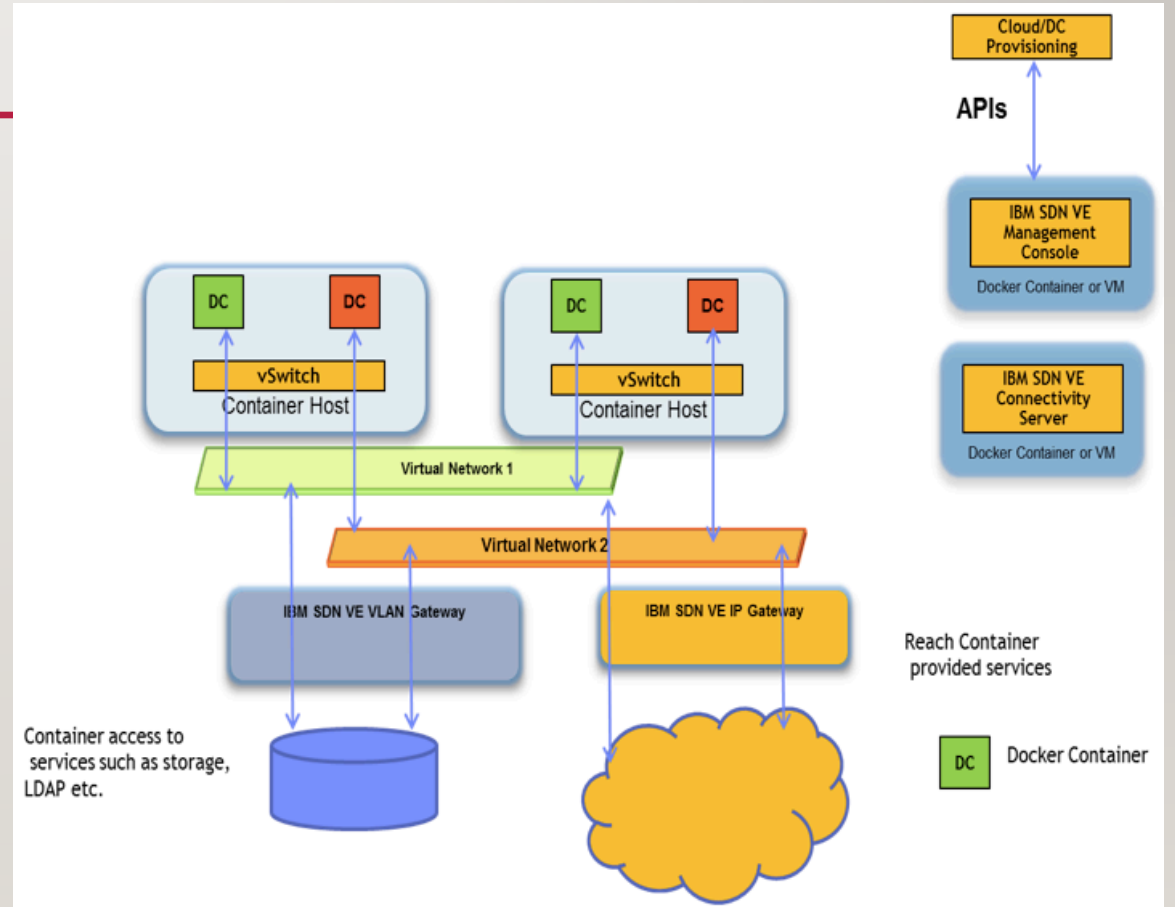
---

- Opera Unite - <http://mashable.com/2009/06/15/opera-unite/>
- Mozilla OS - <https://www.npmjs.com/package/fxos-web-server>
- Diaspora - <https://www.joindiaspora.com/>
- Solid - "social linked data" - <https://solid.mit.edu/>
- Keybase - <https://keybase.io/>
- InterPlanetary File System (IPFS) - <https://ipfs.io/>



# CLOUD INFRASTRUCTURES

- Environments: [VMWare Fusion](#), [VirtualBox](#)
- Provisioners: [Docker](#), [Vagrant](#)
- Configuration: Chef, Puppet
- Providers: [AWS](#), [MS Server](#)
- Services: [MS Cognitive](#), [Wolfram Alpha](#), [Segment](#)
- Serverless CMS - <http://www.downes.ca/post/66459>



# IMMERSIVE REALITY

---

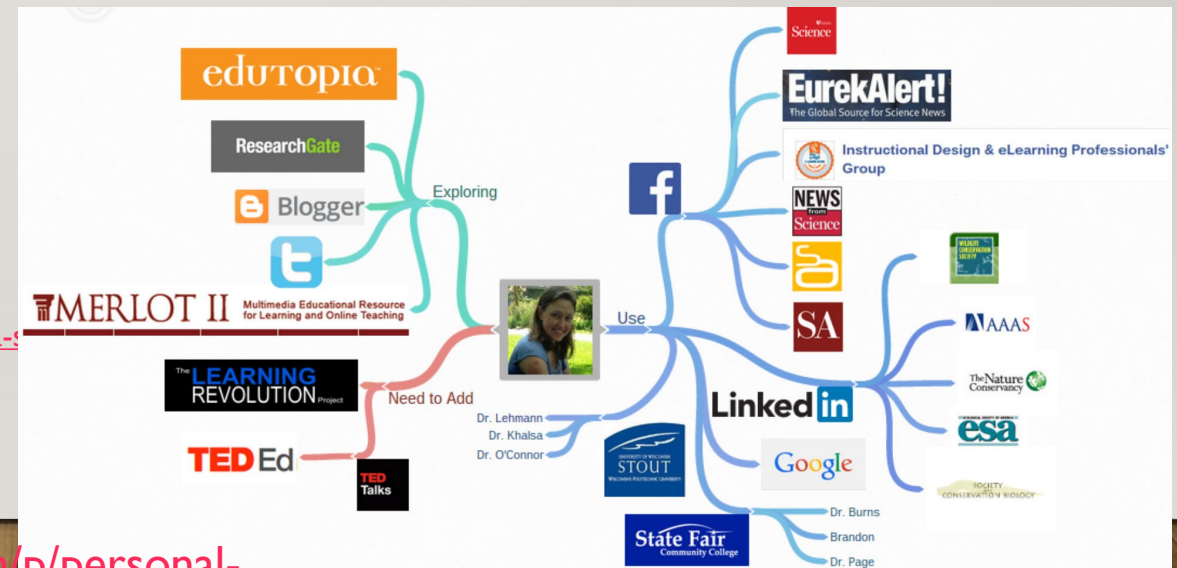


- What is 'Immersive' – a VR helmet?
- Key element of immersion: belief
  - (authentic) applications that matter
  - social presence (cognitive presence, teaching presence) - [https://www.mnsu.edu/its/academic/isalt\\_social\\_presence\\_theory.pdf](https://www.mnsu.edu/its/academic/isalt_social_presence_theory.pdf)
  - multi-modality – cognitive + kinesthetic, etc. - <https://www.slideshare.net/jtholden/the-learning-styles-revelation-research-from-cognitive-science>
- Games and Gamification?

# PERSONAL LEARNING ENVIRONMENTS

- Resource Repository Network (Aggregation) - [http://ec.europa.eu/ipg/standards/markup/web-content-syndication/index\\_en.htm](http://ec.europa.eu/ipg/standards/markup/web-content-syndication/index_en.htm)
- Personal Cloud – Dropbox, OwnCloud, etc. <https://owncloud.org/>
- Personal Learning Record – Learning Record Store (xAPI) <https://www.adlnet.gov/ta/>
- Personal Learning Assistant
  - like Siri? Alexa?
- Distributed Intelligence – MLaaS

<https://www.slideshare.net/KarlSeiler/mlaas-machine-learning-as-a-s>

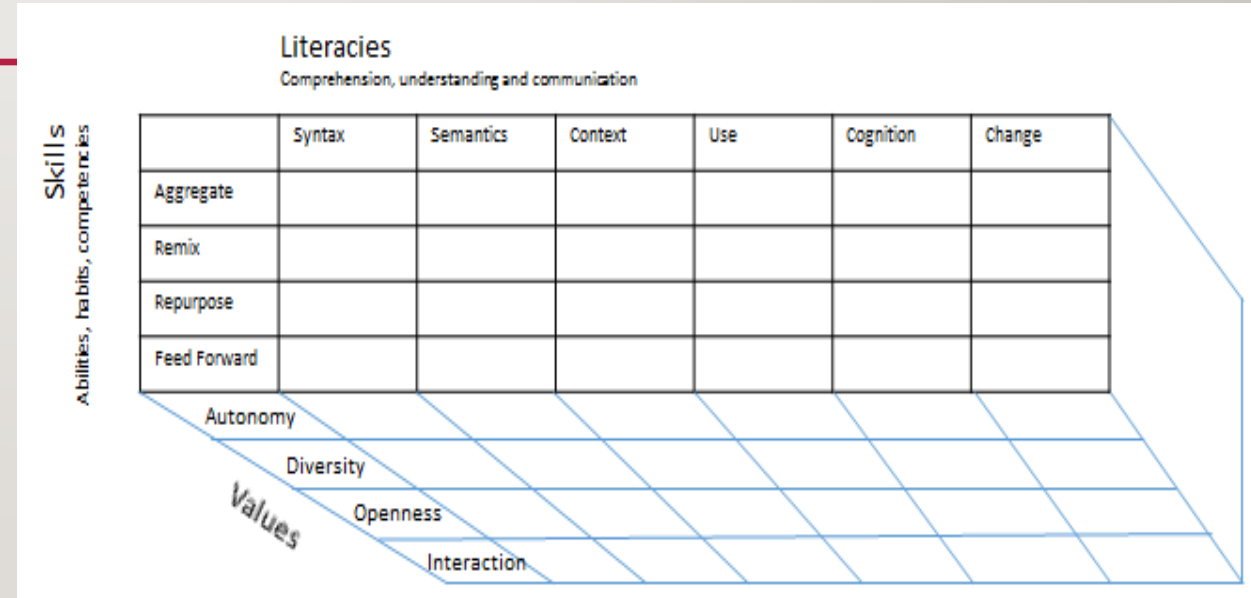


Heather Taft <http://taftportfolio.blogspot.com/p/personal-learning-environment-ple.html>



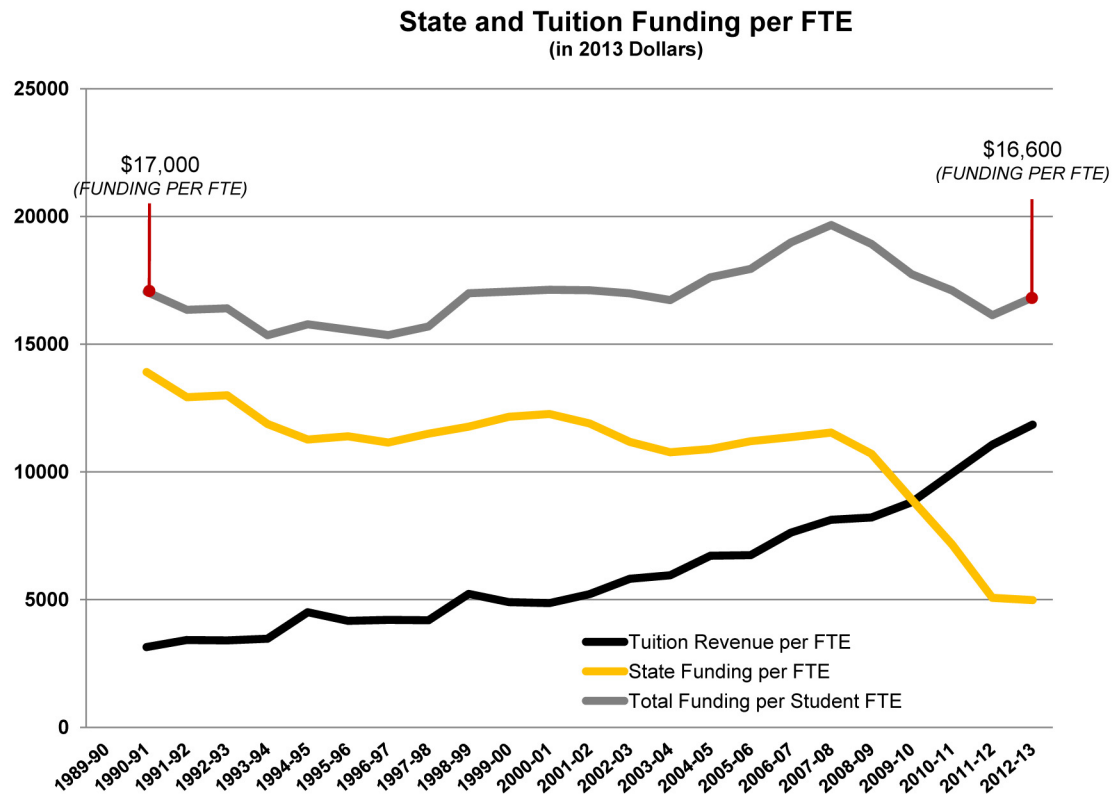
# CHALLENGES TO LEARNING PROVIDERS

- Content Knowledge Vs. Literacies
  - Not just reading and writing...
  - <http://www.downes.ca/presentation/369>
- Employment skills Vs. Education
- Courses Vs. Performance Support
- Authority Vs. the Wisdom of Crowds
  - Autonomy, Diversity, Openness, Interactivity
  - Social Proof? [https://en.wikipedia.org/wiki/Social\\_proof](https://en.wikipedia.org/wiki/Social_proof)
- Credentials Vs. Learning Vs. Connections - <http://er.educause.edu/articles/2015/3/credentialing-in-higher-education-current-challenges-and-innovative-trends>



# CHALLENGES TO EDUCATIONAL INSTITUTIONS

## BURDEN SHIFTED TO STUDENTS AND FAMILIES

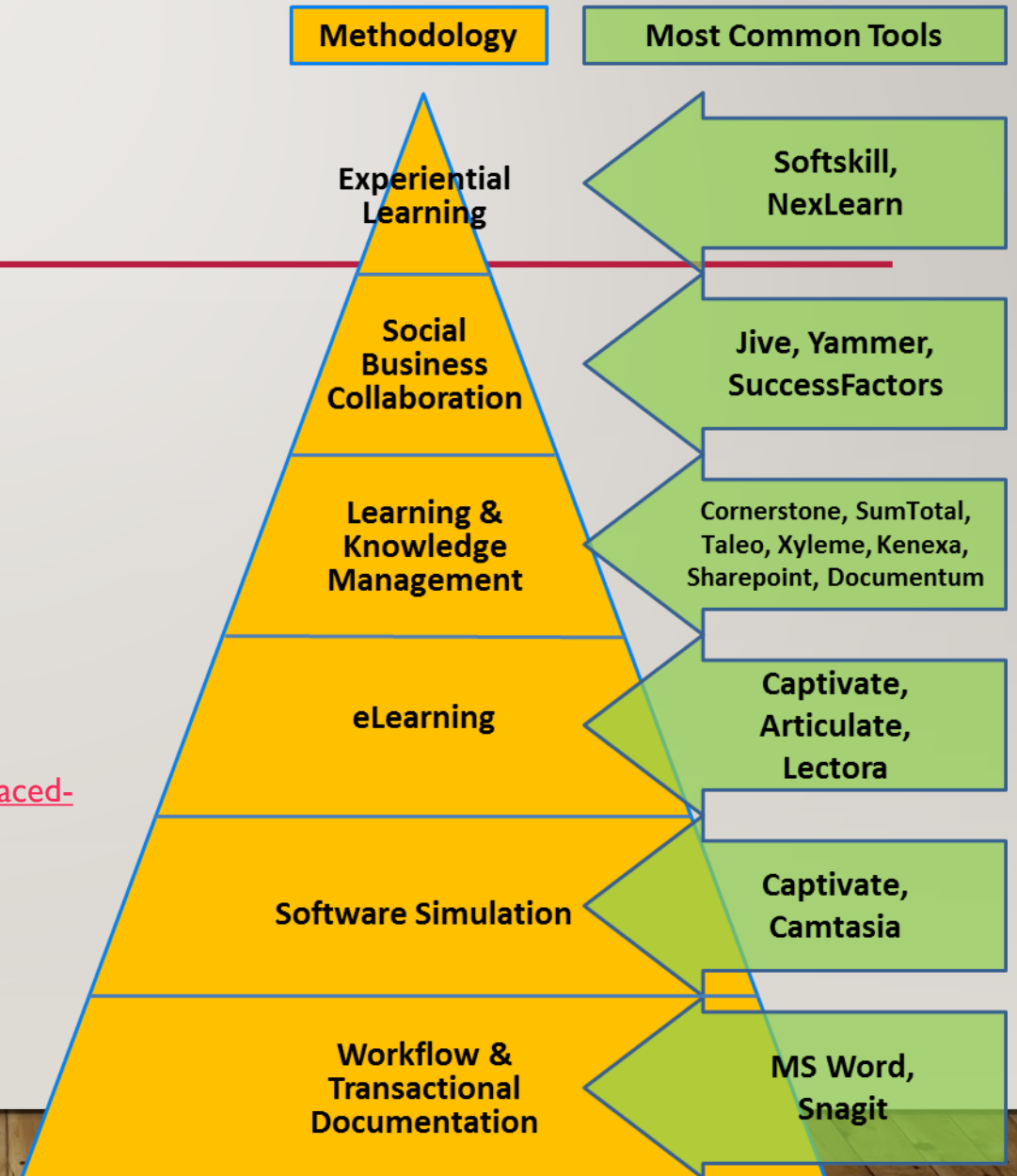


- Public Education Vs. Private Sector
- Funding: Tuition, Grants, Research....?
- Enterprise Vs. Distributed?
- Federated Vs. Open? (Social signon Vs. Single Signon Vs. ??)
- Transcripts Vs. Blockchain Vs. ??

<http://blockgeeks.com/guides/what-is-blockchain-technology/>

# MOVING FORWARD

- Competencies? Vs. Capabilities  
<http://www.downes.ca/post/64879>
- Badges? Vs. Evidence <https://openbadges.org/>
- Classes Vs. Performance Support <http://www.nrc-cnrc.gc.ca/eng/solutions/collaborative/lps.html>
- Microlearning? Vs. Spaced Learning -  
<https://www.td.org/Publications/Blogs/Science-of-Learning-Blog/2015/01/Spaced-Learning-an-Approach-to-Minimize-the-Forgetting-Curve>
- Course Libraries? Vs. Subscription-based Learning -  
<http://www.downes.ca/news/OLDaily.htm>



# Personal Learning



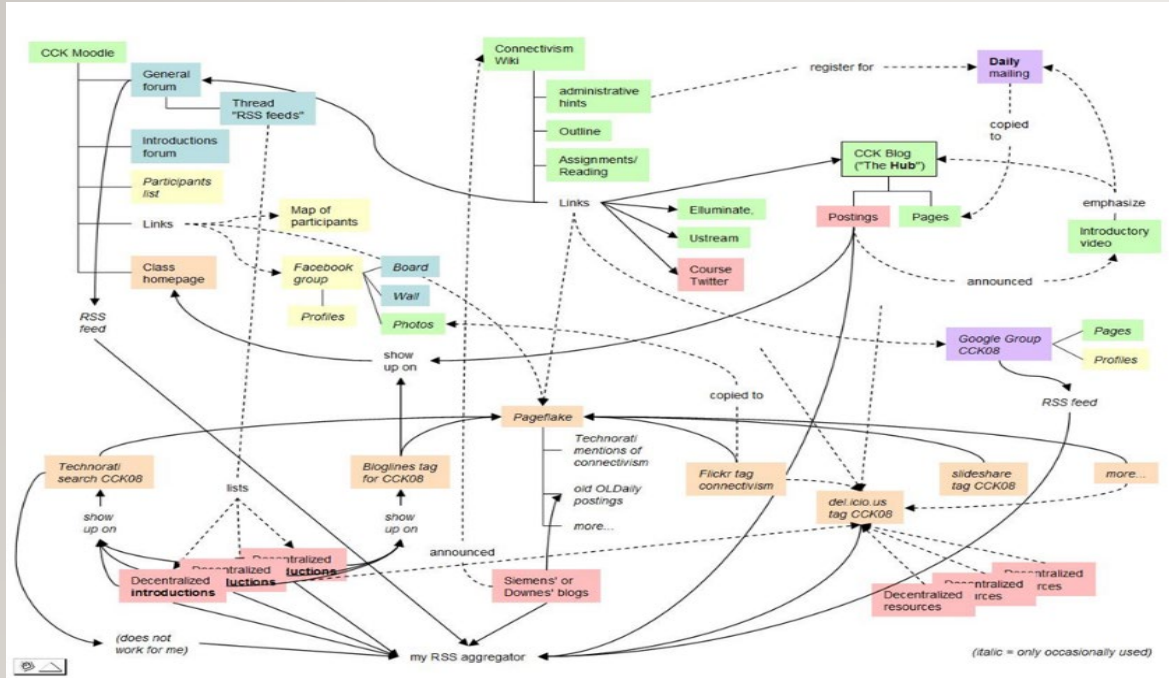
# NEW LEARNING PARADIGMS

<u>Path</u>	<u>Field</u>
Course	Curriculum (as in 'mapping')
Sequence / Prerequisite	Core / periphery / foundation
Movement / covered	Inquiry / Discovery / Gaps
Threshold / Levels	Coverage / Construction
Positioning – first / last	Grouping / Clustering
Objective / target	Serendipity / emergence
Leading / Led	Centred

Carrie Paechter, Metaphors of Space in Educational Theory and Practice

<http://www.tandfonline.com/doi/pdf/10.1080/14681369400200202>

# THE CONNECTIVIST MOOC (CMOOC) DESIGN

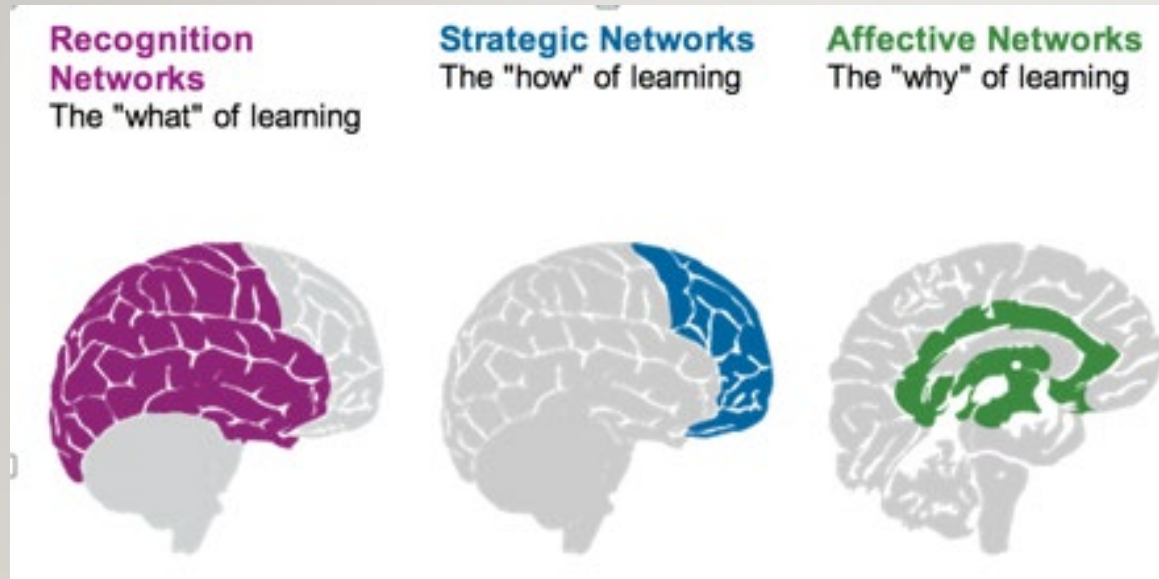


A MOOC is a Web, not a Website



- Instead of seeing a course as a series of contents to be presented, a course is a **network of participants** who find and exchange resources with each other
- An initial structure is developed and 'seeded' with existing **OERs**
  - Participants **encouraged** to use their own sites to create or share resources
  - A mechanism (gRSShopper) is employed to **connect them**

# PERSONALIZATION

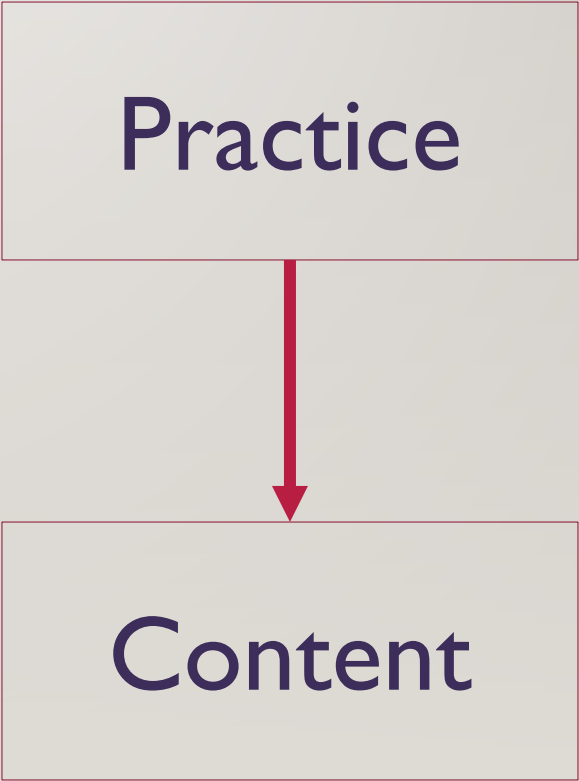
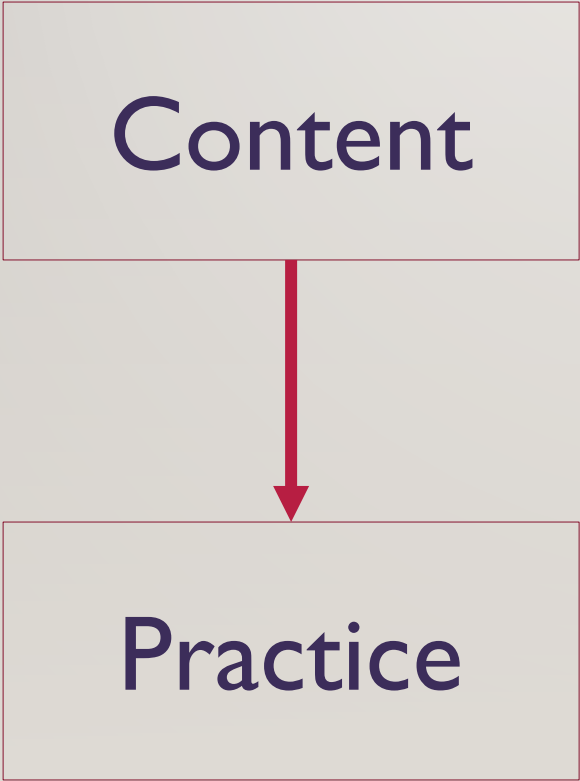


- What we learn
- How we Learn
- Why we learn

- **Rules-Based Events** (like notifications)
- **User Models**
- **Adaptive Learning**

# TWO APPROACHES...

---





# TWO APPROACHES...

Defines an ideal state

Content



Practice

TEST

Person tests you

Defines a desired state

Practice



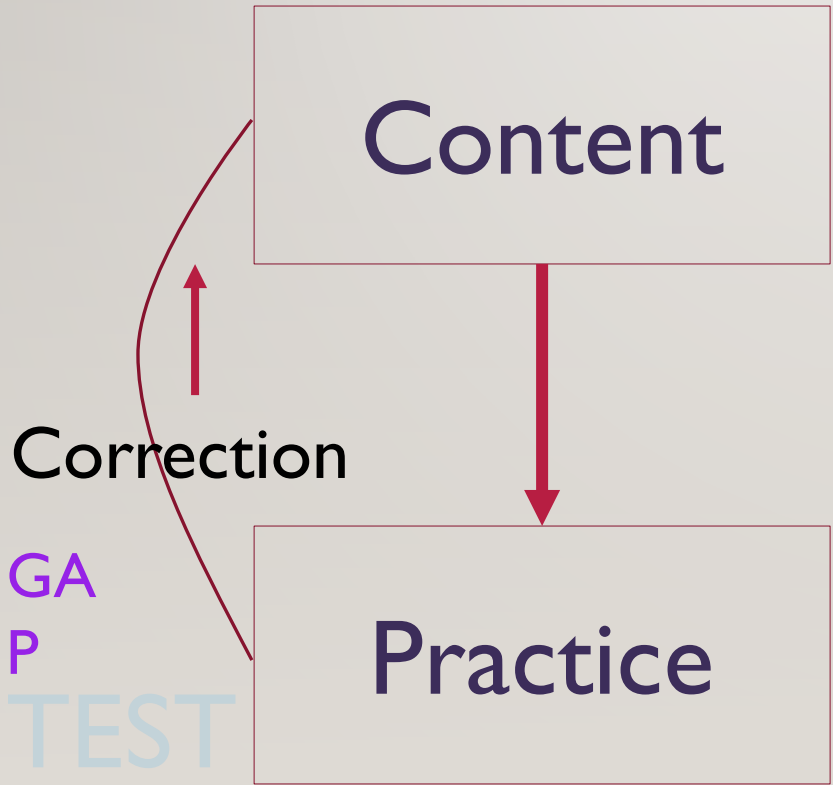
Content

TRY

Person helps you

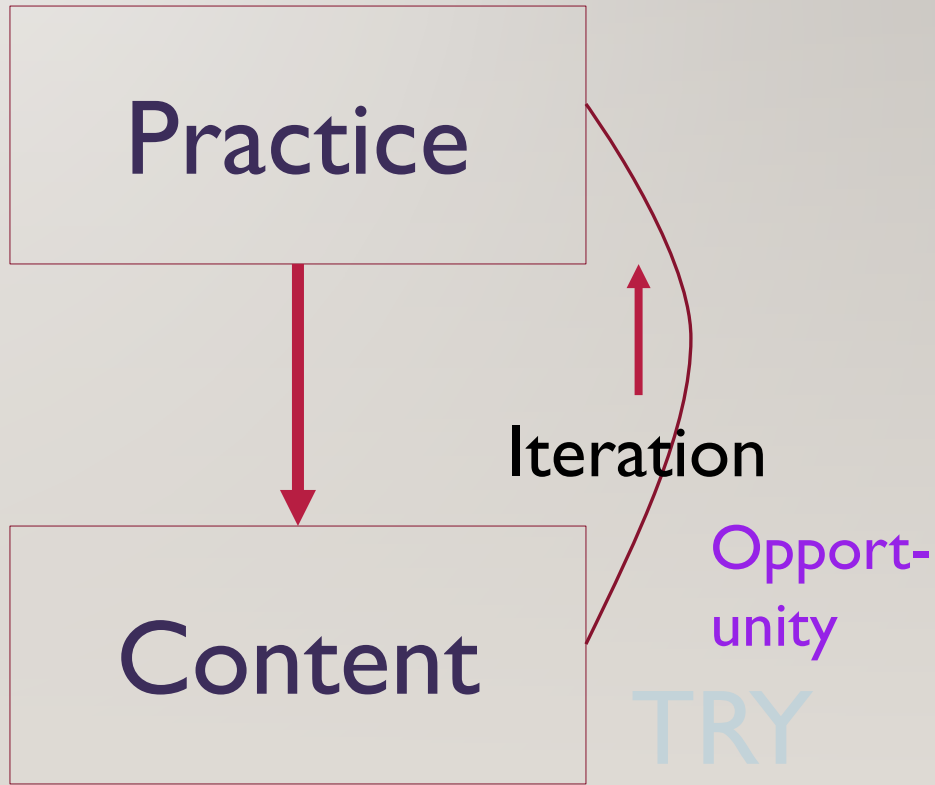
# TWO APPROACHES...

Defines an ideal state



Person tests you

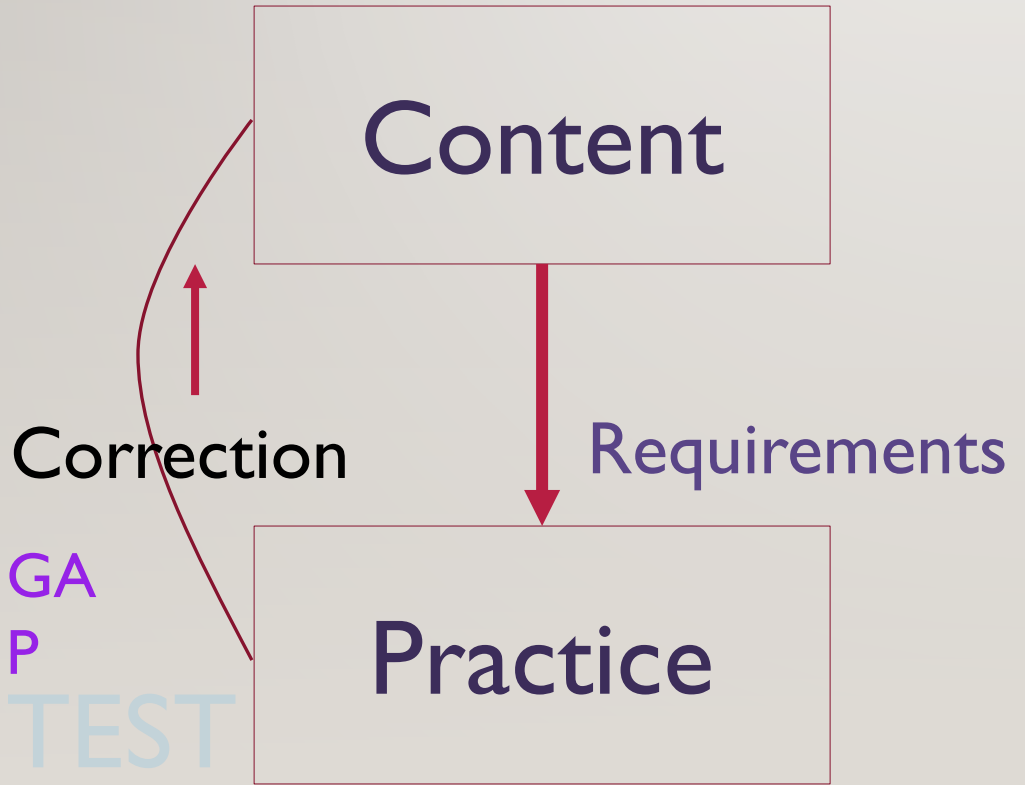
Defines a desired state



Person helps you

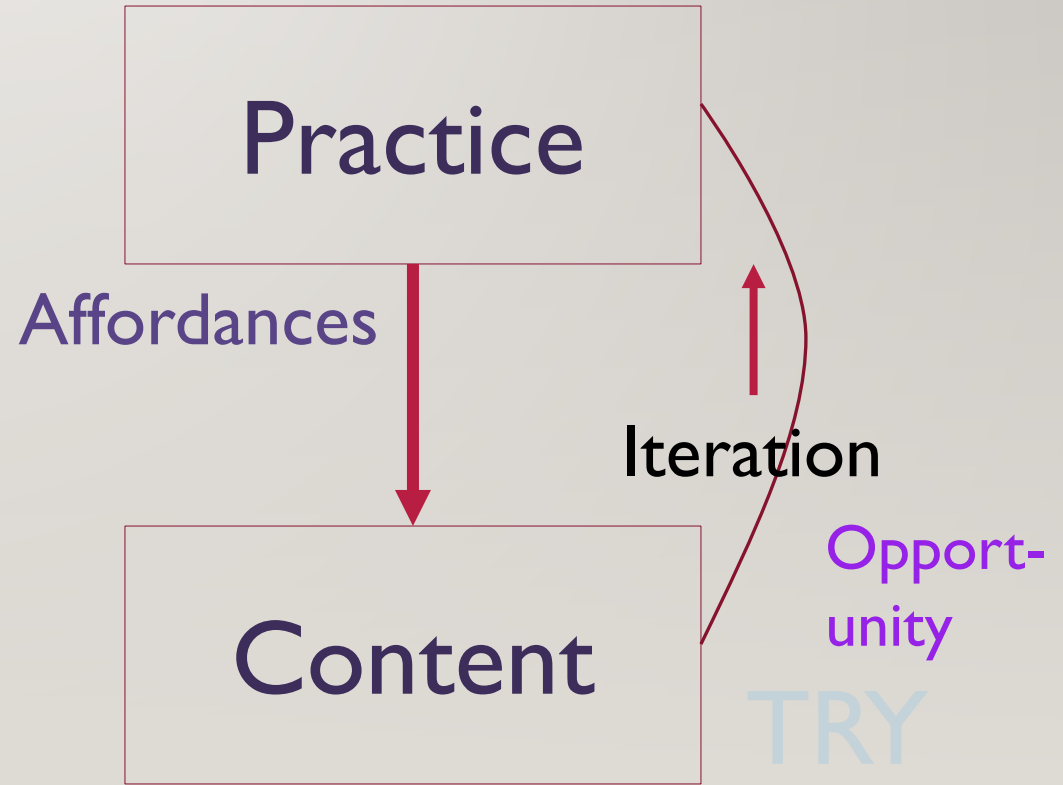
# LIBRARY ENVIRONMENT

Defines an ideal state



Person tests you

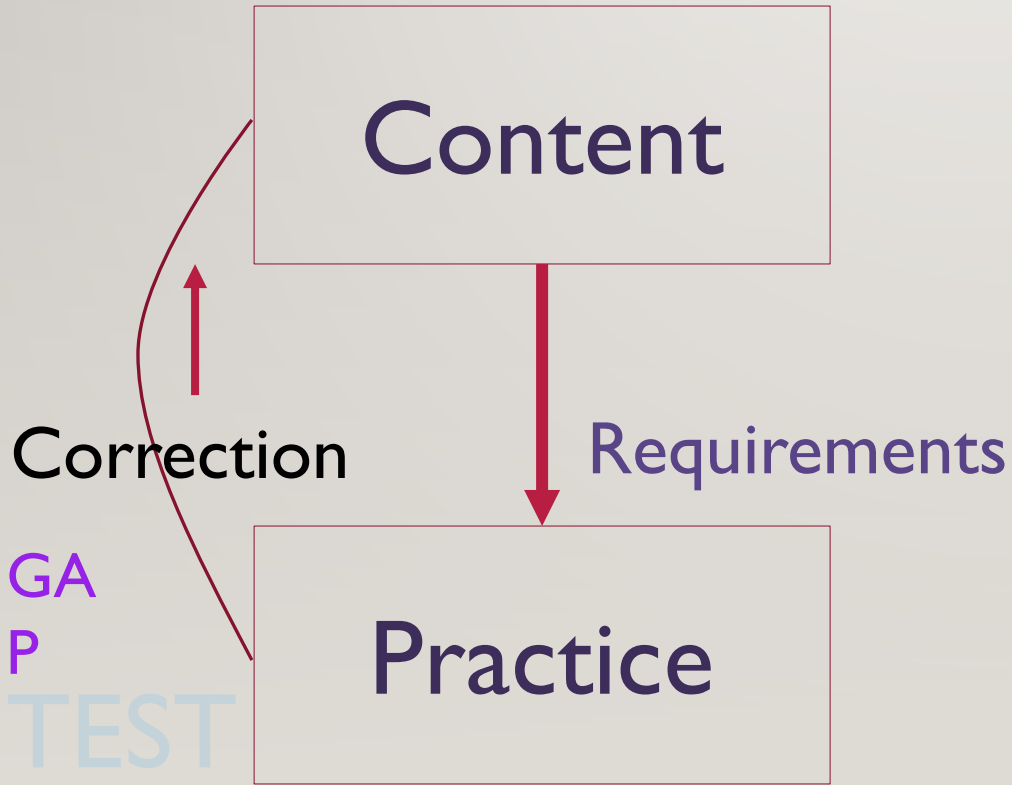
Defines a desired state



Person helps you

PERSONALIZED  
WE DO FOR YOU  
FOR YOURSELF

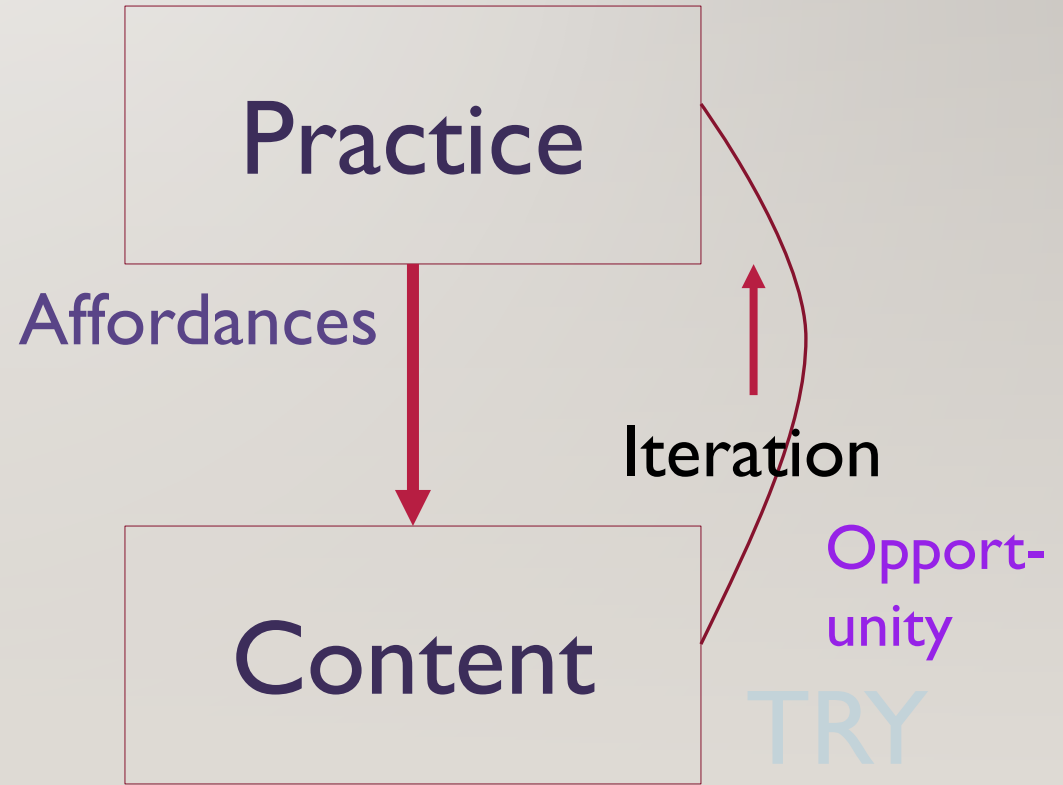
Defines an ideal state



Person tests you

PERSONAL  
YOU DO

Defines a desired state

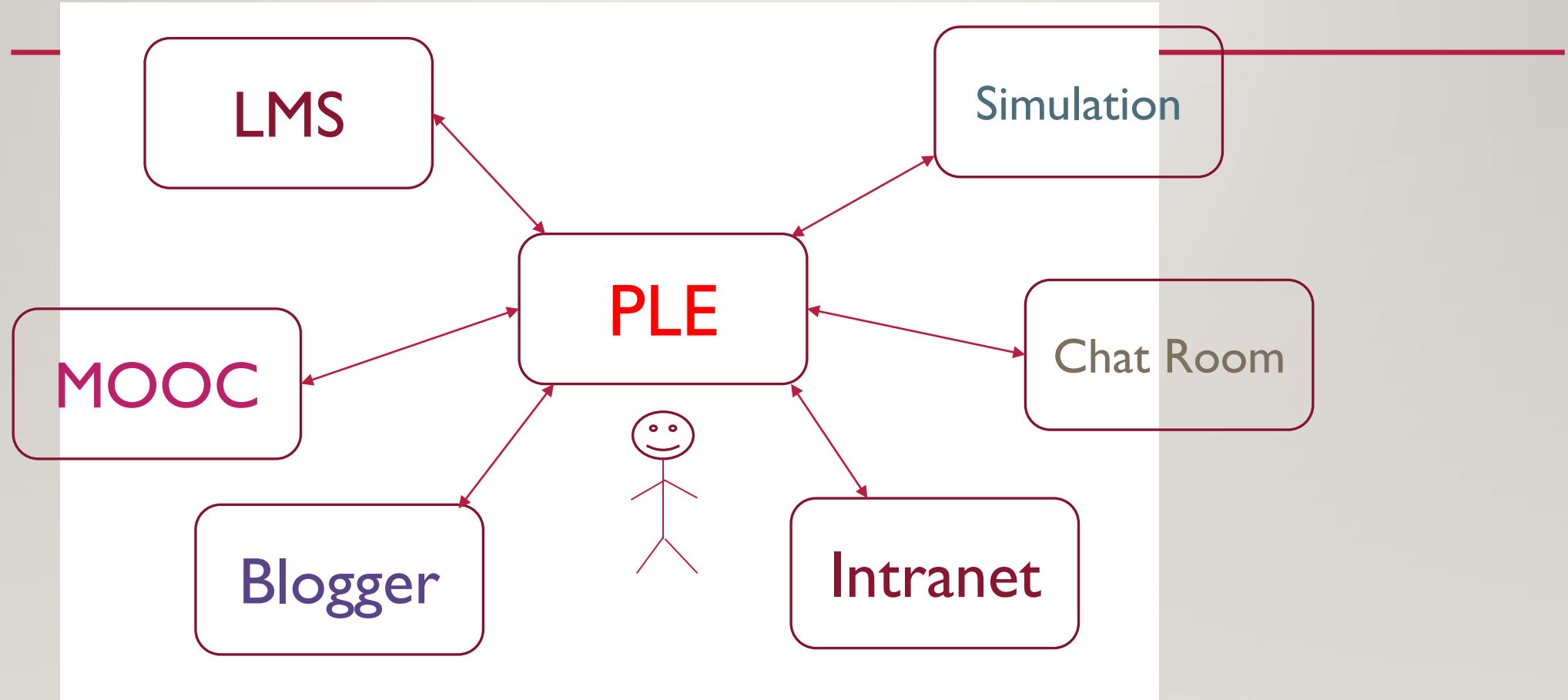


Person helps you

# The Personal Learning Environment



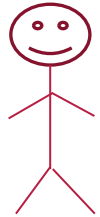
# OVERVIEW OF THE CONCEPT OF PLES



Access to many services in one personal environment

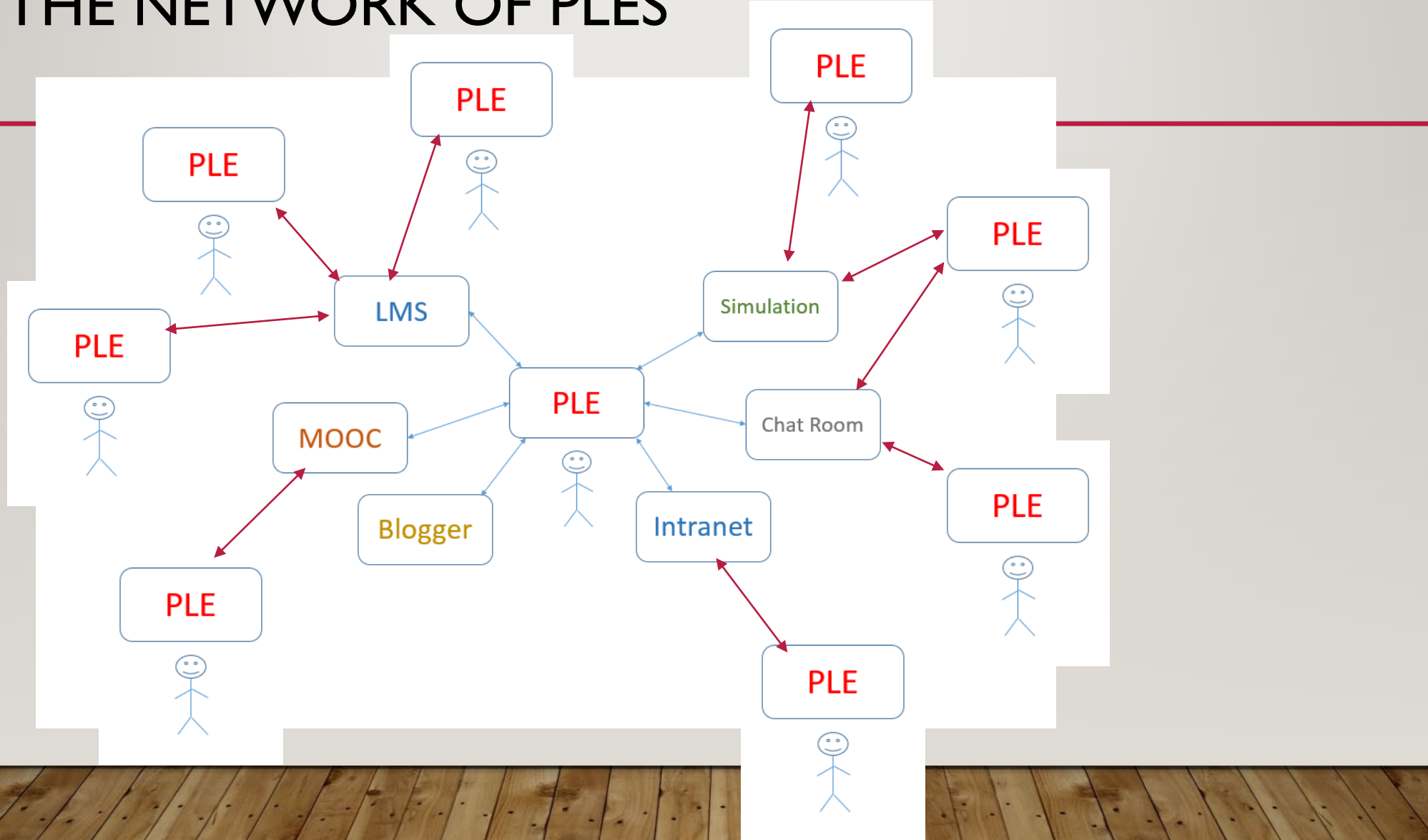
# PROPERTIES OF THE PLE...

PLE



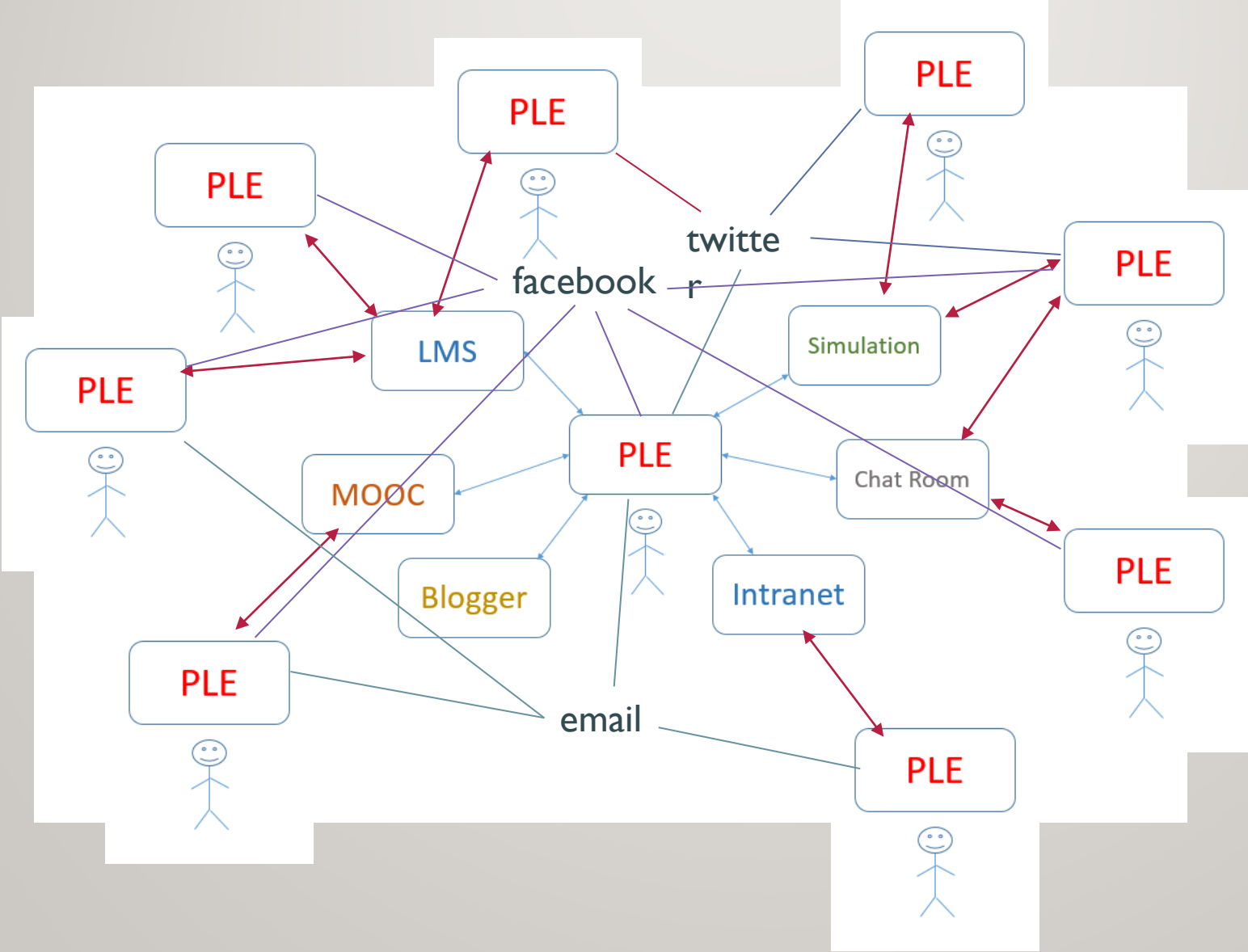
- What information should it record?
- Who owns the data? How private is it?
- What should it *do*?
- What would a person do with it?
- Where, exactly, is a PLE located?

# THE NETWORK OF PLES



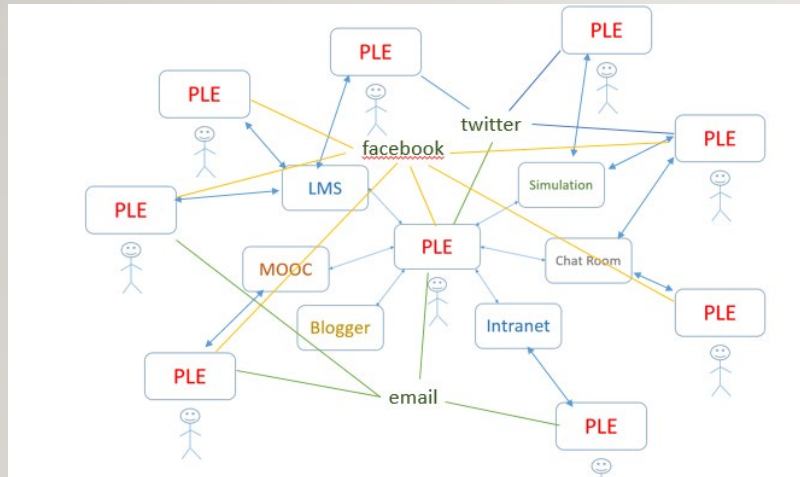


# THE SOCIAL NETWORK OF PLES



# PROPERTIES OF THE NETWORK...

---



- How do people find each other? Services?
- How do they communicate? What do they share?
- How does a single PLE work with services?
- Do we need centralized registries?

# WHY A PERSONAL LEARNING ENVIRONMENT?

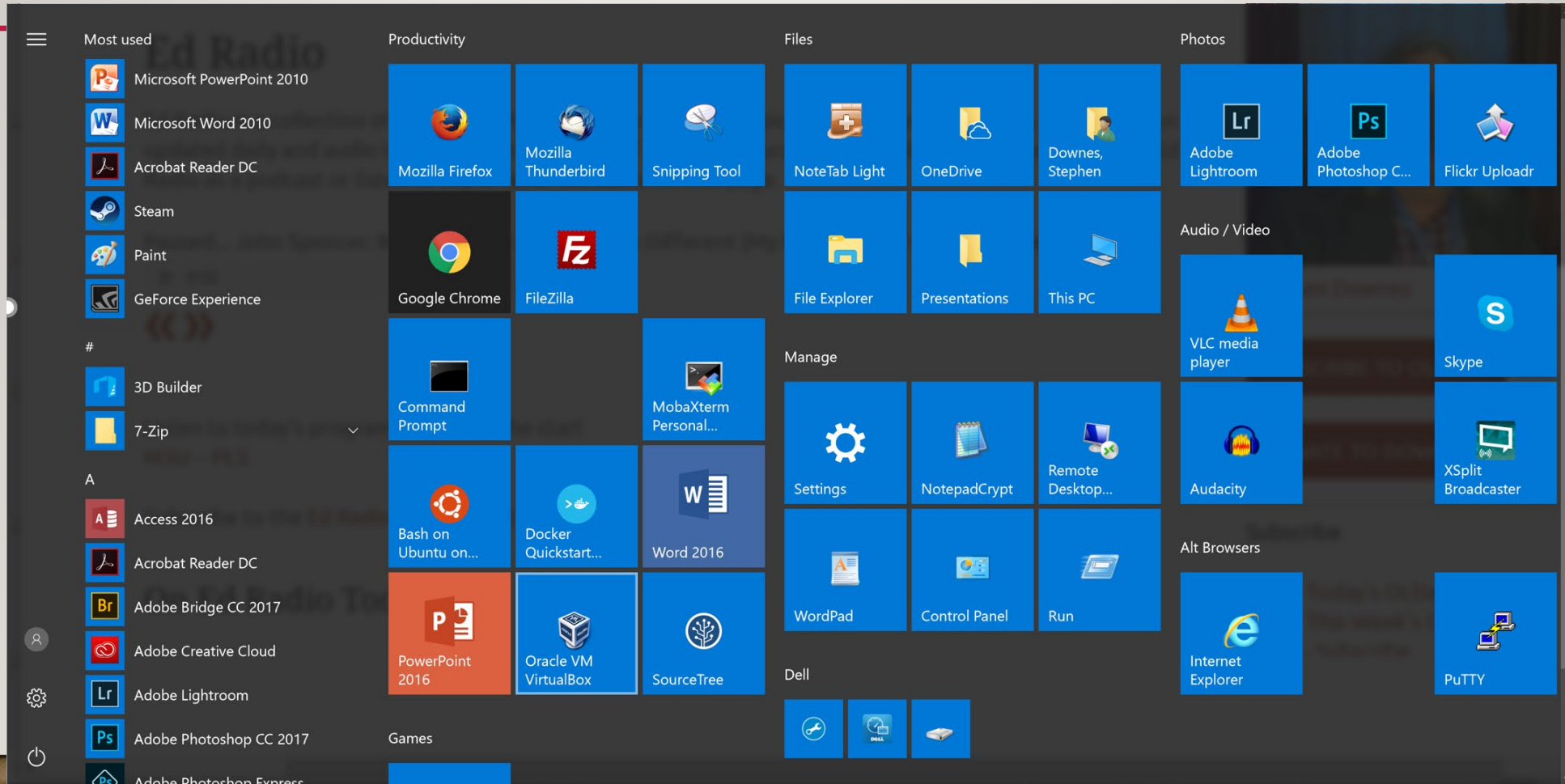
- What is the *value proposition* for a PLE?
- 
- Note: value isn't what you can *do*, it's how you benefit
  - This is usually stated in financial terms (earn more, cost less)
  - Can also be stated in terms of quality: faster, bigger, better
  - And can be non-financial goods: satisfaction, happiness, memories



Education is  
not a search  
problem



# MAKING

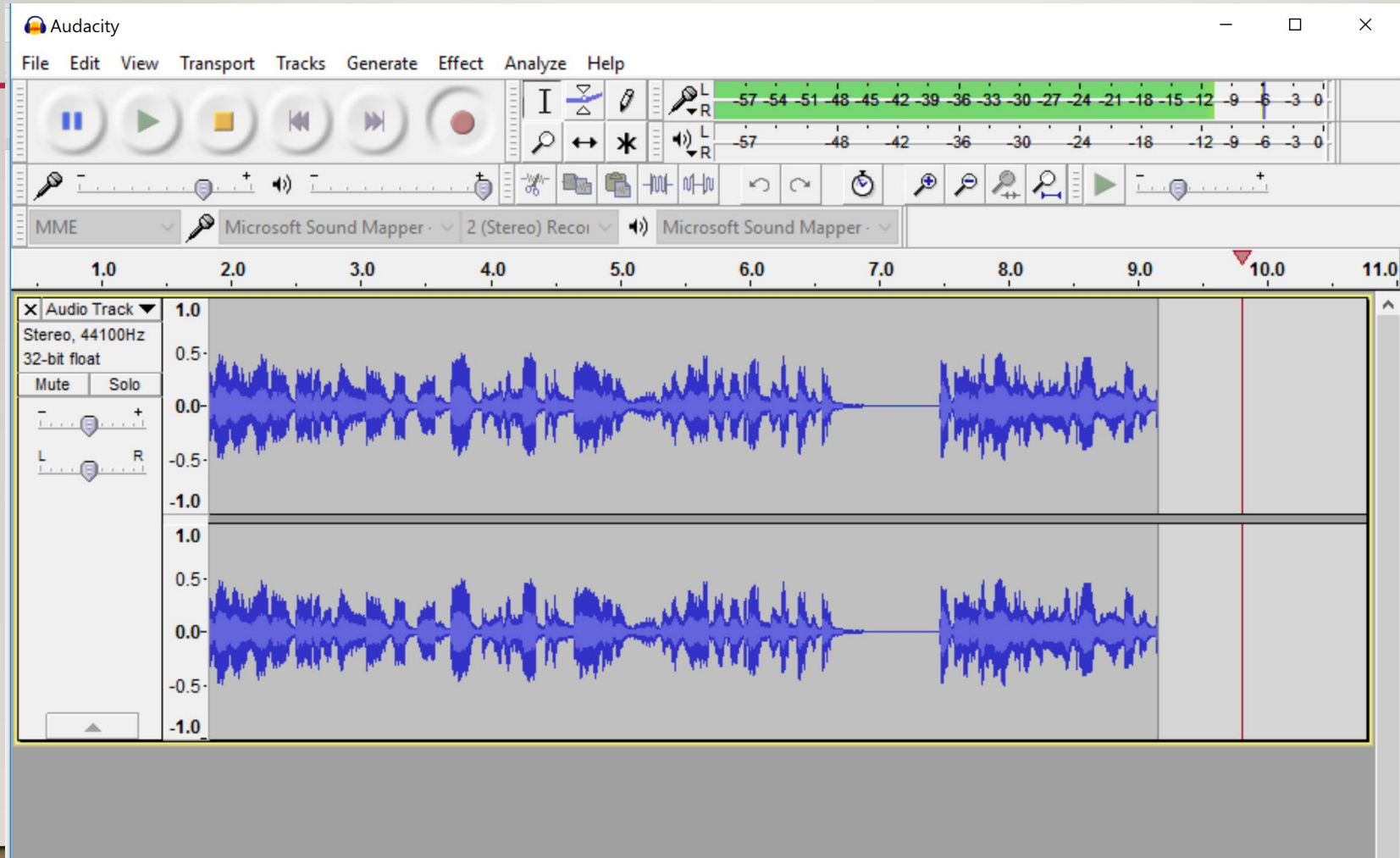


# MAKING



<https://lightroom.adobe.com/>

# MAKING



<http://www.audacityteam.org/download/>

# MAKING

The screenshot shows the Google Docs interface. At the top, the title bar reads "LTSC Monthly Meeting - 13 June 2017". Below this is a search bar and navigation icons. The main area displays a list of documents, categorized by time periods: "Previous 7 days", "Previous 30 days", and "Earlier".

Document Name	Owner	Last Opened
LTSC Monthly Meeting - 9 May 2017	Avron Barr	9 May 2017
Previous 30 days		
The Future of Teaching and Learning in the Digital Age	me	3 May 2017
CCGN Open Education Platform (CC Summit, 2017)	Cable Green	25 Apr 2017
Platform Discussions at CC Summit	Kelsey Wiens	24 Apr 2017
xAPI Profiles Orientation Document	Aaron Silvers	21 Apr 2017
Intro to Phil : Plan of action	Hugh McGuire	20 Apr 2017
Earlier		
Future of Teaching and Learning	me	1 Apr 2017
CSPS Technology Integration Projects Business Case	me	31 Mar 2017
Feature Requirements Template	Geoff Graham	29 Mar 2017
Blank ChangeED Charter	dave cormier	20 Mar 2017

On the right side, a document preview is visible. It contains the following text:

EDT

<https://join.me/avronbarr>

your screen) to set up audio (dial-in or VOIP).  
no's here.  
window.

convenience of members who cannot attend at  
meeting are [here](#).

and during the meeting: <https://goo.gl/Plg056>

[https://ordings.join.me/2\\_DnzLrr8E-el23POiilw](https://ordings.join.me/2_DnzLrr8E-el23POiilw)

<https://docs.google.com/>



# MAKING

Home / Projects: Active Open Textbook Projects / [PHIL] Introduction to Philosophy [lead: Christina Hendricks]

Log in to post

[PHIL] INTRODUCTION TO PHILOSOPHY [LEAD: CHRISTINA HENDRICKS, UBC]

- 
**General Project / Book Info & Discussion**  
 6 months ago · hugh 170 POSTS
- 
**Project Leads Discussion**  
 21 days ago · zoe 7 POSTS
- 
**Ethics [section ed: George Matthews]**  
 2 months ago · hugh 28 POSTS
- 
**Aesthetics [section ed: W. Scott Clifton]**  
 2 months ago · hugh 18 POSTS
- 
**This topic is deleted!**  
 2 months ago · hugh 1 POSTS

Open  
**Textbook**  
Library

Discover the difference you can make.

---

**Search the Library**

search

**Open Textbook Library**

As an instructor, you want your students to have the best textbooks possible. Unfortunately, not all students can afford the high cost of traditional textbooks.




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1.1k VIEWS

647 VIEWS

3 VIEWS

 about 13 h  
@geoslack Th' to me. I'll pl

 9 day  
@wturgeon or exampl

No one ha



<https://forum.rebus.community/category/17/phil-introduction-to-philosophy-lead-christina-hendricks-ubc>

# MAKING

## SCREEN

The image displays the XSplit Broadcaster V2 software interface. The main window shows a live broadcast of a presentation slide titled "A Model of Personal Learning (Take 2)". The slide features a man with long white hair and glasses speaking, with a smaller inset video of the same man. The interface includes a menu bar (File, Sources, Outputs, Extensions, Tools, Help), a scene list, and a control panel. The scene list shows "Scene 1" selected, with a list of sources including "Desktop region", "Text (A Model of Personal Learning (Take 2))", "Logitech HD Webcam C615", "Window region 'PowerPoint Slide Show - [2017 01 27 - Current State of Learning Technologies.pptx]'", "Logitech HD Pro Webcam C920 (1)", and "Window region 'Be-ODL Conference - YouTube - Mozilla Firefox'". The control panel shows a transition of 700ms and a scene selection grid with "Scene 1" highlighted. The top right corner of the interface displays "Elapsed Time: 02:35:05" and "ON AIR".

XSPLOT BROADCAST V2'S NEW SCREEN CAPTURE  
CAPTURE OF A SPECIFIC REGION OF A

<https://www.xsplit.com/>

# SHARING



Stephen Downes

Knowledge, Learning, Community

- Books
- Publications
- Newsletter
- Articles
- Presentations

## Ed Radio

Ed Radio is a collection of audio reports centered around the topics of education and media. The collection is updated daily and audio is drawn from a number of different sources, listed below. You can subscribe to Ed Radio as a podcast or listen to any or all of the items on this page.

Paused... John Spencer: Be Wildly and Unabashedly Different (My Hope for My Cohort as They Graduate)

▶ 0:00  ⏴ ⏵



Listen to today's programming from the start  
[M3U -- PLS](#)

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### On Ed Radio Today



Stephen Downes

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#### Subscribe


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- Web - This Week's OLWeekly
- Email - Subscribe

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

# SHARING

halfanhour.blogspot.be/2017/06/open-learning-open-networks.html

Click to go back, hold to see history



**Stephen Downes**

Stephen Downes  
From a small town in eastern Ontario. See also my main website at <http://www.downes.ca>

[VISIT PROFILE](#)

Archive ▾

Stephen's Web - OLDaily

Autonomy, technology and prediction I: some conceptual remarks - 6/19/2017 -

Khan Academy as Supplemental Instruction: A Controlled Study of a Computer-Based Mathematics Intervention - 6/17/2017 -

← **HALF AN HOUR**


A place to write, half an hour, every day, just for me.

June 07, 2017


## OPEN LEARNING, OPEN NETWORKS

Open online learning entered the mainstream with MOOCs, but while interest in open online courses represent only the first step in a broader open learning talk given March 9, 2017, at the State University describes several key innovations shaping the future of networks, cloud infrastructures and virtualized learning environments. It outlines the challenges for learning providers and educational institutions to meet them.

Preliminaries: Openness



letsmakesomeartdammit.blogspot.be



**STEPHEN DOWNES**

Stephen Downes  
From a small town in eastern Ontario. See also my main website at <http://www.downes.ca>

[VISIT PROFILE](#)

Archive ▾


Labels ▾

[Report Abuse](#)

# Let's Make Some Art, Dammit

## Adoration of the Mystic Lamb

June 19, 2017



<http://letsmakesomeartdammit.blogspot.com>

<http://halfanhour.blogspot.com>

# SHARING

The screenshot shows the SlideShare website interface. At the top, there is a navigation bar with the SlideShare logo, a search bar, and an 'Upload' button. Below the navigation bar, there are tabs for 'Home', 'Technology', 'Education', 'More Topics', 'My Clipboards', and 'For Uploaders'. The main content area is divided into two columns. The left column displays the profile of Stephen Downes, including his profile picture, a bio, and a list of interests. The right column displays a presentation titled 'Open Learning, Open Networks' by Stephen Downes, with a video player and a list of related presentations.

**SlideShare Profile: Stephen Downes**

- Profile:** Stephen Downes, 335 SlideShares, 2,045 Followers, 2 Clipboards.
- Location:** Moncton, New Brunswick, Canada
- Occupation:** Researcher
- Interests:** Technology / Software / Internet
- Website:** [www.downes.ca](http://www.downes.ca)
- Links:** <http://www.downes.ca>, [Twitter](#), [LinkedIn](#)
- Ads You May Be Interested In:**
  - Free 5s Warehouse Guide:** Thousands of warehouse managers have used 5s to improve safety & efficiency
  - Easy to Use ITSM Software:** Easy Integration with Highly

**SlideShare Presentation: Open Learning, Open Networks**

- Author:** Stephen Downes
- Event:** Open SUNY COTE 2017 Conference, Syracuse, New York, March 9, 2017
- Views:** 4,805
- Embed:** [Embed](#)
- Related Content:**
  - Presentations:** 334
  - Documents:** 1
  - Infographics:** 0
  - Videos:** 0

<https://www.slideshare.net/Downes>

# SHARING



Stephen Downes

Knowledge, Learning, Community

## Open Learning, Open Networks



SUNY Open COTE 2017, Syracuse, New York, .

Open online learning entered the mainstream with the growth and popularity of MOOCs, but while interest in open online courses has never been greater MOOCs represent only the first step in a broader open learning infrastructure. In this keynote Stephen Downes will describe several key innovations shaping the future of open learning: distributed social networks, cloud infrastructures and virtualization, immersive reality, and personal learning environments. The talk will outline the challenges this evolving model will pose to learning providers and educational institutions and recommend policies and processes to meet them. [Link to hosted video.](#)

Keynote, Mar 09, 2017.

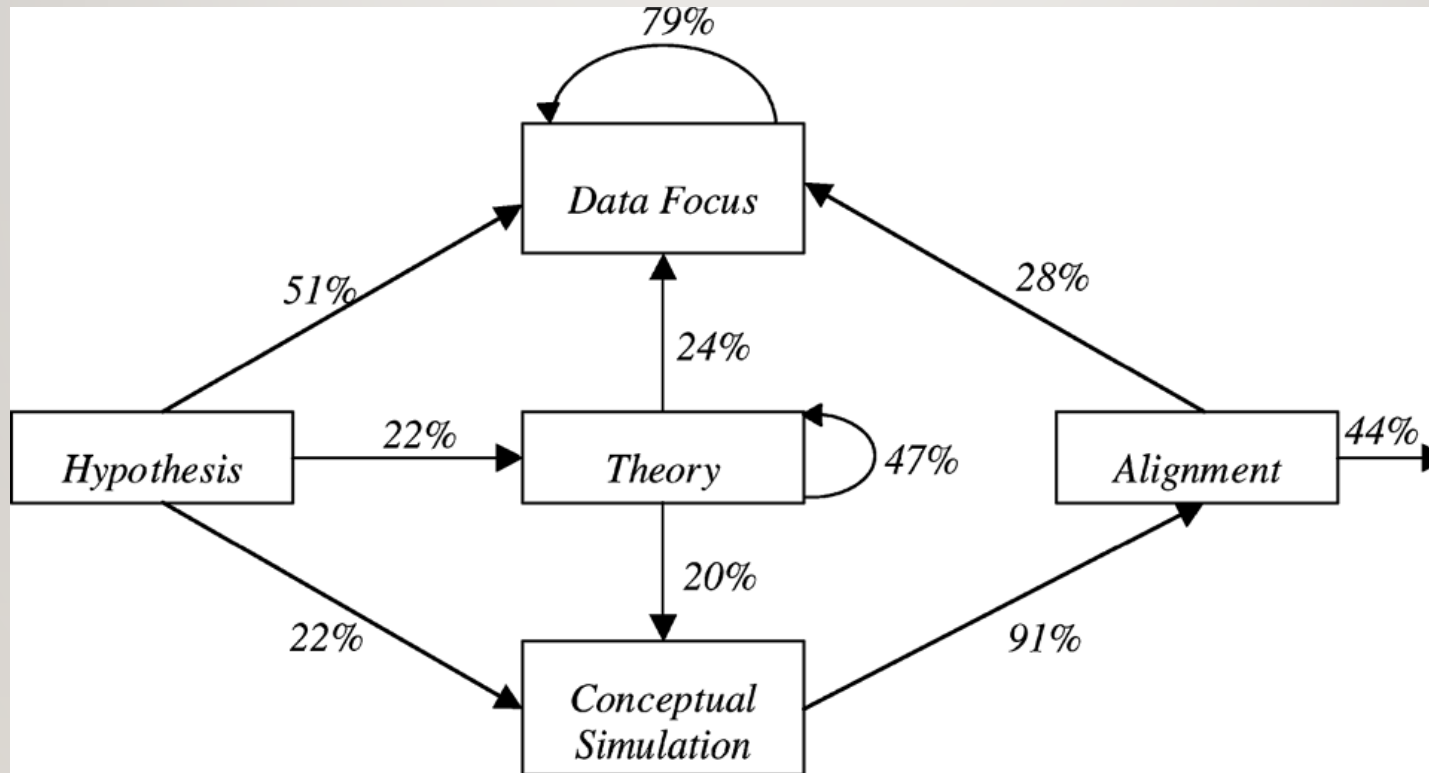
Downloads: [\[Slides\]](#) [\[Audio\]](#) [\[Conference Link\]](#)

<http://www.downes.ca/presentation/468>

# Critical Literacies



# Science as language, learning as conversation, knowledge as inference



“What if...”: The Use of Conceptual Simulations in Scientific Reasoning

<http://www.informaworld.com/smpp/1925728116-26233474/ftinterface~db=all~content=a788101161~fulltext=713240928>



The Second Thesis, Part B

This means getting beyond narrow text-based conceptions we have of media

**LEAVE BRITNEY ALONE!**



★ ★ ★ ☆ ☆ 202,225 ratings

25,558,086 views

♥ Favorite → Share + Playlists ▾ Flag

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[\(more share options\)](#)

# Conceptions Like:

- messages have a sender and a receiver
- words get meaning from what they represent
- truth is based on the real world
- events have a cause, and causes can be known
- science is based on forming and testing hypotheses

These, taken together, constitute, a static, linear, coherent picture of the world

The world, as though it were a book, or a library

Not everyone sees it that way



# A frame for understanding new media

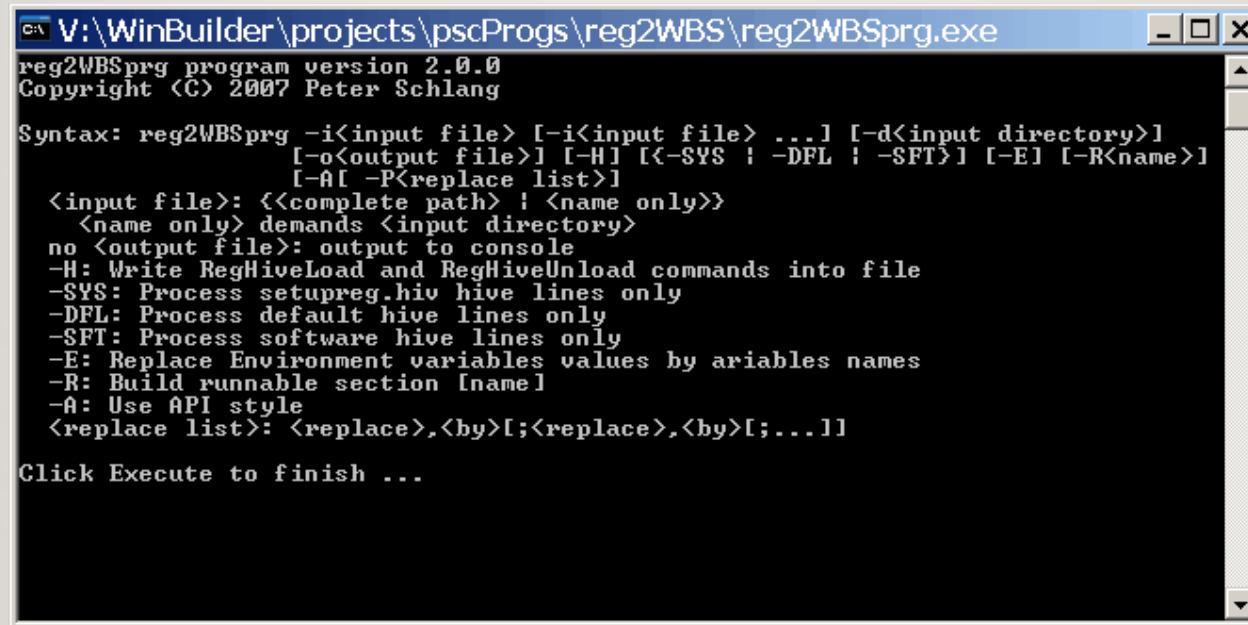
Morris, Derrida and a little Lao Tzu

Syntax	Cognition
Semantics	Context
Pragmatics	Change

We need this frame because (as Jukes said) if we aren't looking for these things, we just won't see them.

# Syntax

## Not just rules and grammar



```
C:\V:\WinBuilder\projects\pscProgs\reg2WBS\reg2WBSprg.exe
reg2WBSprg program version 2.0.0
Copyright (C) 2007 Peter Schlang

Syntax: reg2WBSprg -i<input file> [-i<input file> ...] [-d<input directory>]
        [-o<output file>] [-H] [<-SYS | -DFL | -SFT>] [-E] [-R<name>]
        [-A] [-P<replace list>]
<input file>: <<complete path> | <name only>>
<name only> demands <input directory>
no <output file>: output to console
-H: Write RegHiveLoad and RegHiveUnload commands into file
-SYS: Process setupreg.hiv hive lines only
-DFL: Process default hive lines only
-SFT: Process software hive lines only
-E: Replace Environment variables values by ariables names
-R: Build runnable section [name]
-A: Use API style
<replace list>: <replace>,<by>[;<replace>,<by>[;...]]

Click Execute to finish ...
```

Forms: archetypes? Platonic ideals?

Rules: grammar = logical syntax

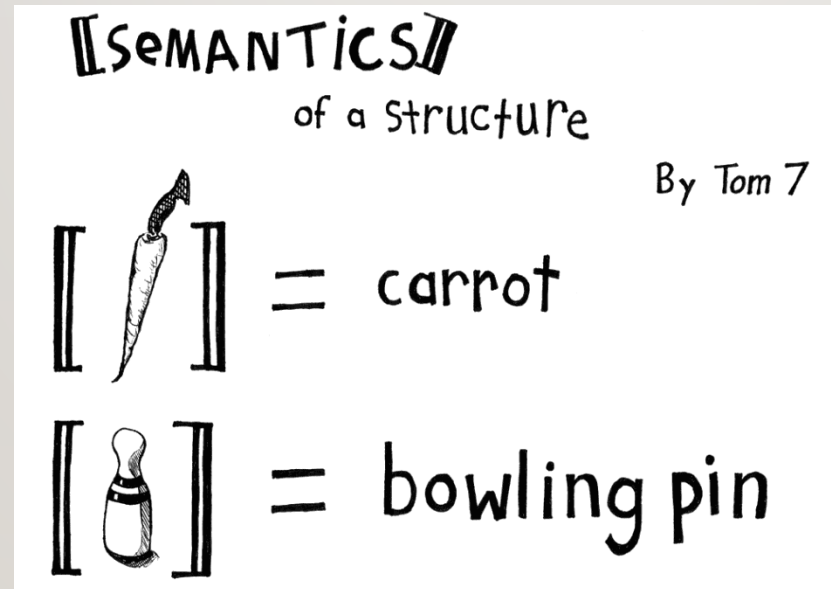
Operations: procedures, motor skills

Patterns: regularities, substitutivity (eggcorns, tropes)

Similarities: Tversky - properties, etc

# Semantics

theories of truth / meaning / purpose / goal



<http://www.cs.cmu.edu/~tom7/csnotes/fall02/semantics.gif>

- Sense and reference (connotation and denotation)
- Interpretation (Eg. In probability, Carnap - logical space; Reichenbach - frequency; Ramsey - wagering / strength of belief)
- Forms of association: Hebbian, contiguity, back-prop, Boltzmann
- Decisions and decision theory: voting / consensus / emergence

# Pragmatics

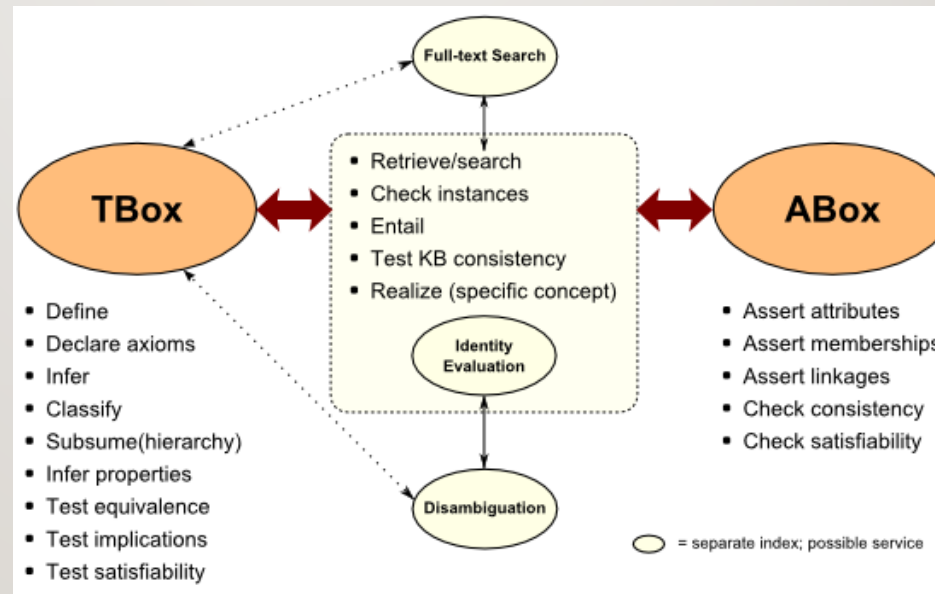
use, actions, impact



- Speech acts (J.L. Austin, Searle) assertives, directives, commissives, expressives, declarations (but also - harmful acts, harassment, etc)
- Interrogation (Heidegger) and presupposition
- Meaning (Wittgenstein - meaning is use)

# Cognition

reasoning, inference and explanation



<http://www.mkbergman.com/category/description-logics/>

- **description - X** (definite description, allegory, metaphor)
- **definition - X is Y** (ostensive, lexical, logical (necess. & suff conds), family resemblance - but also, identity, personal identity, etc)
- **argument - X therefore Y** - inductive, deductive, abductive (but also: modal, probability (Bayesian), deontic (obligations), doxastic (belief), etc.)
- **explanation - X because of Y** (causal, statistical, chaotic/emergent)

# Context

placement, environment

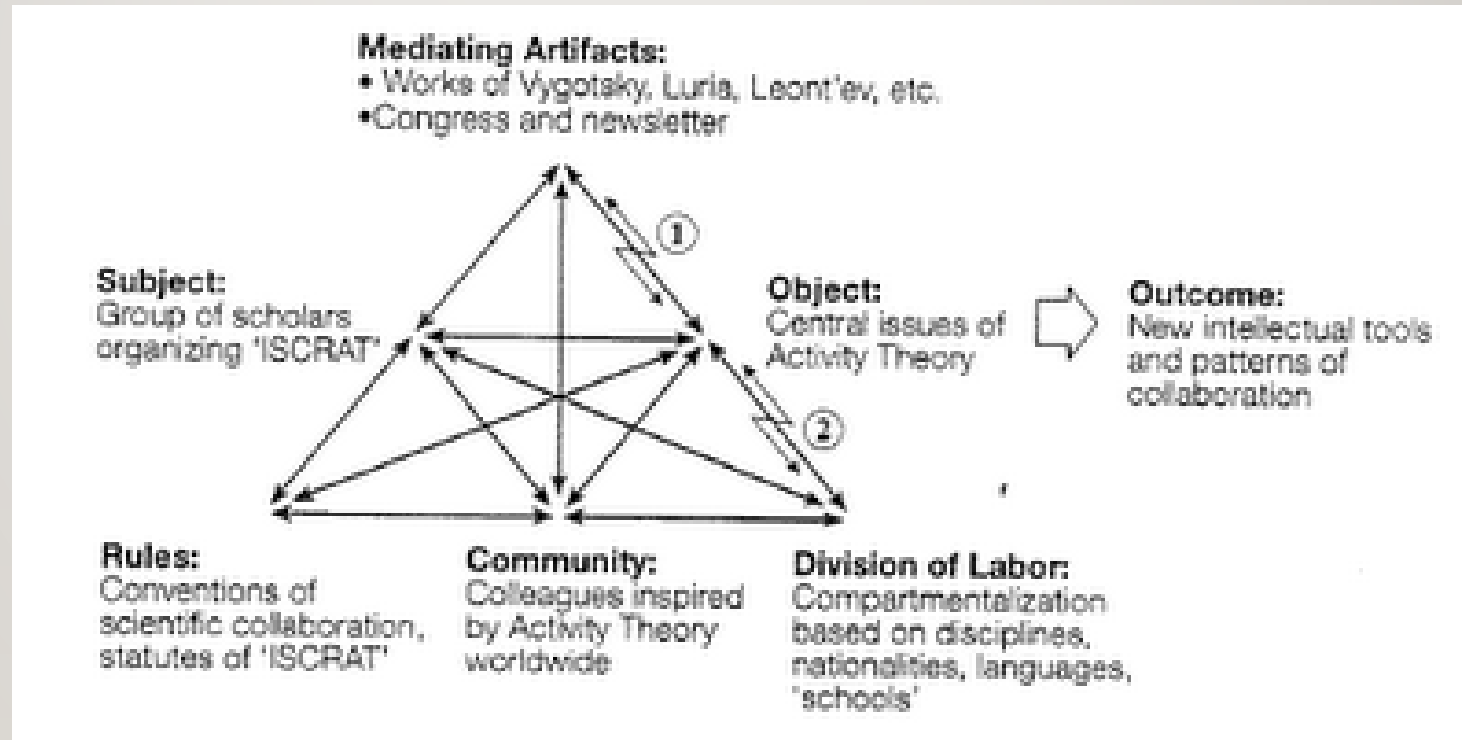


<http://www.occasionbasedmarketing.com/what-it-is>

- explanation (Hanson, van Fraassen, Heidegger)
- meaning (Quine); tense - range of possibilities
- vocabulary (Derrida); ontologies, logical space
- Frames (Lakoff) and worldviews



# Change



- relation and connection: I Ching, logical relation
- flow: Hegel - historicity, directionality; McLuhan - 4 things
- progression / logic -- games, for example: quiz&points, branch-and-tree, database
- scheduling - timetabling - events; activity theory / LaaN

# 21<sup>st</sup> Century ~~Skills~~ Languages



[http://spotlight.macfound.org/btr/entry/new\\_media\\_literacies/](http://spotlight.macfound.org/btr/entry/new_media_literacies/)

The 'skills' described by Jenkins –  
*performance, simulation, appropriation, etc* –  
are actually *languages* and should be  
understood in terms of these six dimensions

# 21<sup>st</sup> Century Languages

<b>Languages Elements</b>	<b>Performance</b>	<b>Simulation</b>	<b>Appropriation</b>
Syntax			
Semantics			
Pragmatics			
Cognition			
Context			
Change			

# Example: Performance - Syntax

<b>Languages</b>	<b>Performance</b> (the ability to adopt alternative identities for the purpose of improvisation and discovery)(subcategories?)
<b>Elements</b>	
<b>Syntax:</b> <ul style="list-style-type: none"><li>- Forms</li><li>- Rules</li><li>- Operations</li><li>- Patterns</li><li>- Similarities</li></ul>	<ul style="list-style-type: none"><li>- Presentation acting, method acting</li><li>- “Know your lines” etc <a href="http://filmtvcareers.about.com/od/gettingthejob/a/GJ_Actor_Tips.htm">http://filmtvcareers.about.com/od/gettingthejob/a/GJ_Actor_Tips.htm</a></li><li>- Stanislavski’s system (etc...) <a href="http://en.wikipedia.org/wiki/Stani%27s_system">http://en.wikipedia.org/wiki/Stani%27s_system</a></li><li>- Ritual Performance (etc.) <a href="http://www.let.rug.nl/koster/papers/JHP.Koster2.Edit.pdf">http://www.let.rug.nl/koster/papers/JHP.Koster2.Edit.pdf</a></li><li>- Comparing Tales (etc.) <a href="http://artsedge.kennedy-center.org/content/2343/">http://artsedge.kennedy-center.org/content/2343/</a></li></ul>