# Developing Personal Learning

Stephen Downes

December 20, 2014

In this talk Stephen Downes describes work toward developing next-generation personal learning environments. This is the next iteration of online learning, following the deployment of the Massive Open Online Course (MOOC) in 2008. With personal learning environments, individual students access learning resources and events from multiple providers from within their own custom-designed environment. Downes will describe major aspects of the personal learning environment being developed by his Learning and Performance support Systems research program, which is funded by the Canadian government to enhance skills development and professional education, seeking to increase employability and reduce the skills gap in advanced industries.

The MOOC Revolution
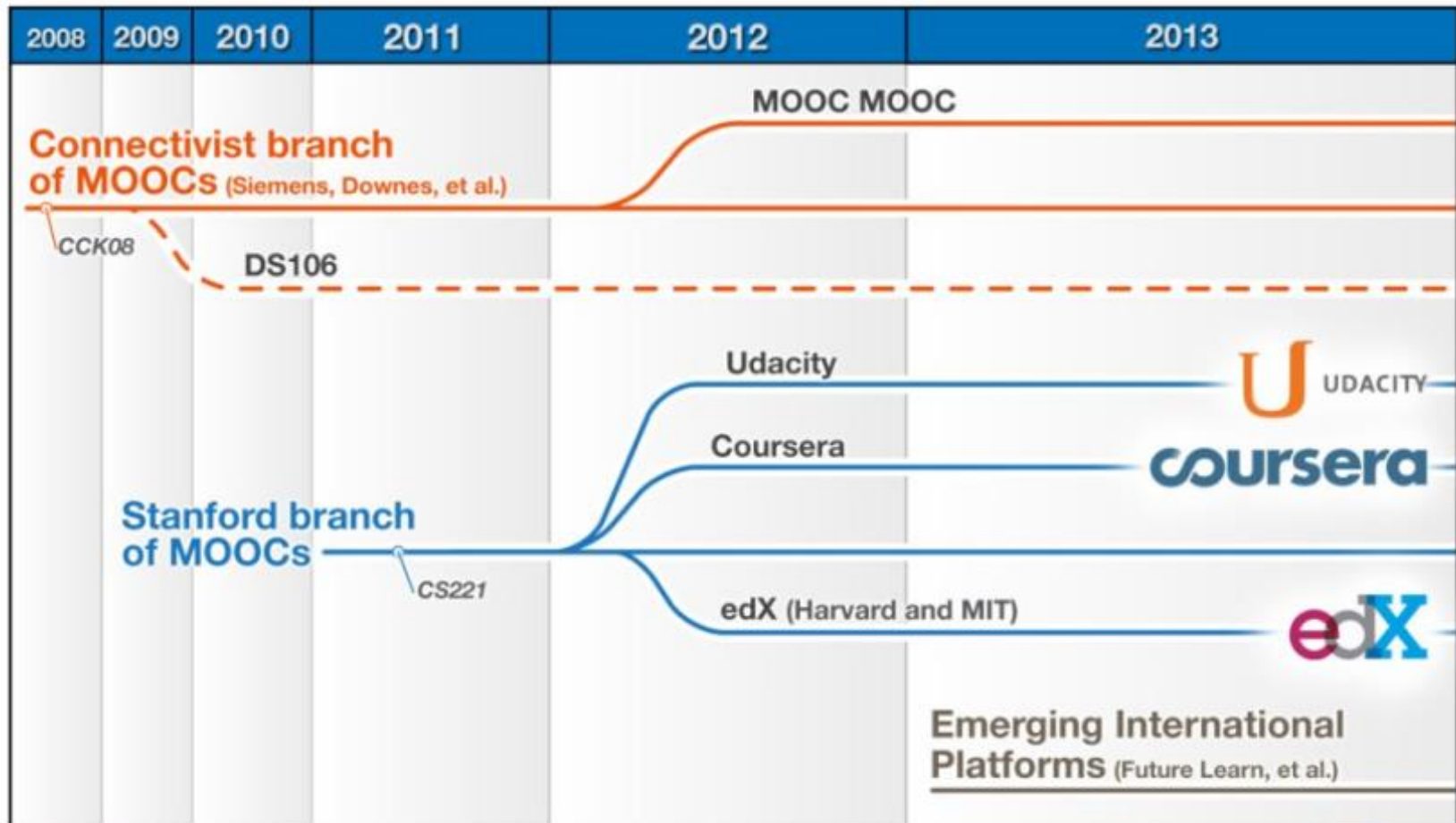
Connectivist Learning Design

- A non-curricular based approach
  - course content is the 'McGuffin'
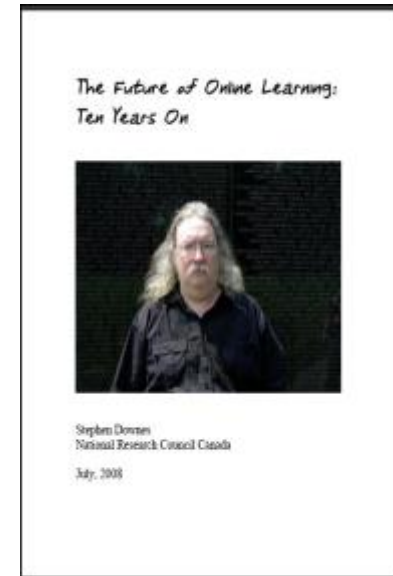 - learning takes places through interaction and creativity

But... why

- It's a formal recognition that people have different destinations, different tastes
- Based on an understanding that knowledge varies according to these
- Expresses the principle that networks – communities – are stronger with multiple diverse perspectives
- Knowledge learned is *better* – indeed, *known*

In 1998 I predicted...

- High-speed wireless access
- Importance of audio and video
- The iPad (even got the name right)
- Learning objects (called 'modules')
- Learning management systems
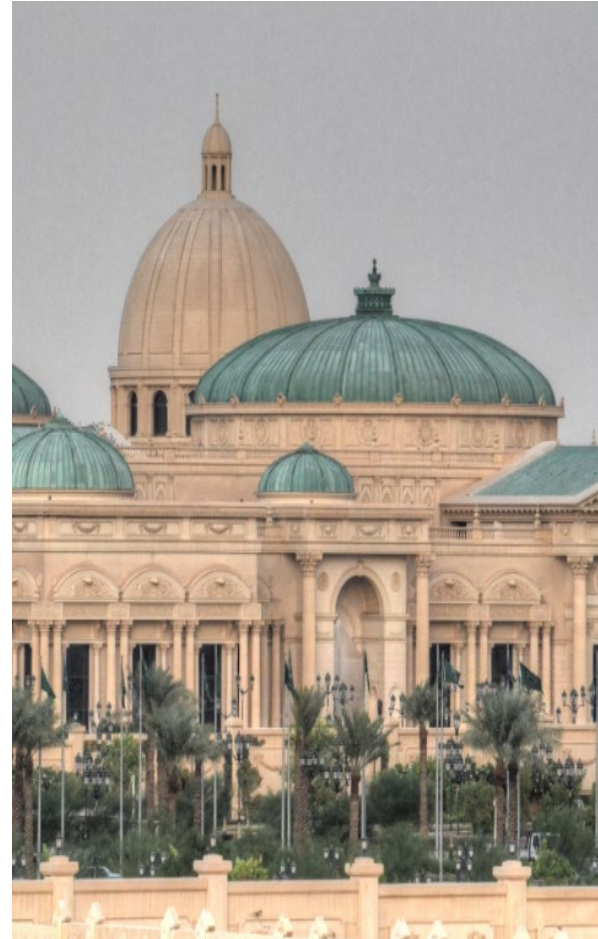- Personalized education

The Future of Online Learning:
Ten Years On

Stephen Downes
National Research Council Canada

July, 2008

http://www.downes.ca/future/
http://www.downes.ca/me/mybooks.htm

How do we predict the future?

- We predict the future the way we understand the past: by reading the signs
- This is also how we understand the world in general, and how we learn

Learning is a form of recognition
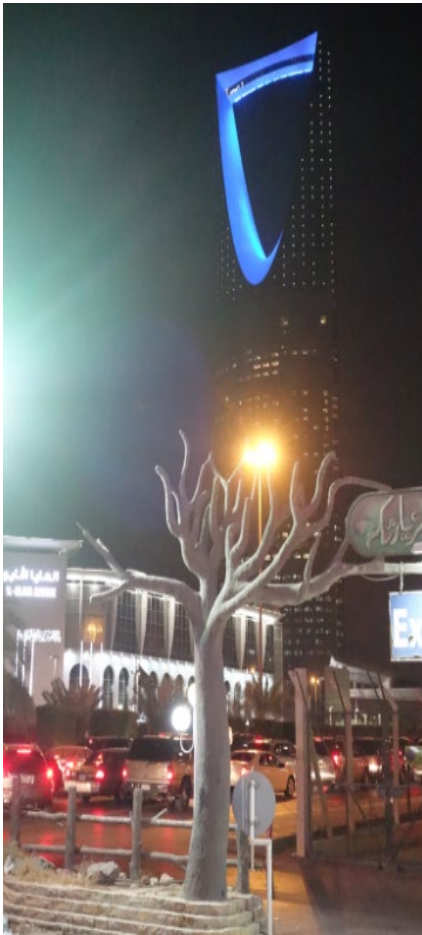
- It's what we do naturally, as humans, from the day we are born
- And it's something that grows and evolves into a complex set of basic literacies, including pattern recognition, critical thinking, action and behaviour, awareness of context, inference and imagination, and change (the 'critical literacies')

Learning is a matter of personal growth, not an accumulation of facts

The learning process is interactive

- Aggregate

- Remix

- Repurpose

- Feed Forward

To teach is to model and demonstrate, to learn is to practice and reflect

This is the basis of our approach to learning technologies

- 1999 – Learning communities
- 2001 – The learning marketplace
- 2004 – E-Learning 2.0
- 2005 – Learning Networks / Connectivism
- 2005 – Open Educational Resources
- 2008 – MOOC
- 2010 – Personal Learning Environments
- 2013 – LPSS

You can also see it in Pedagogy 2.0
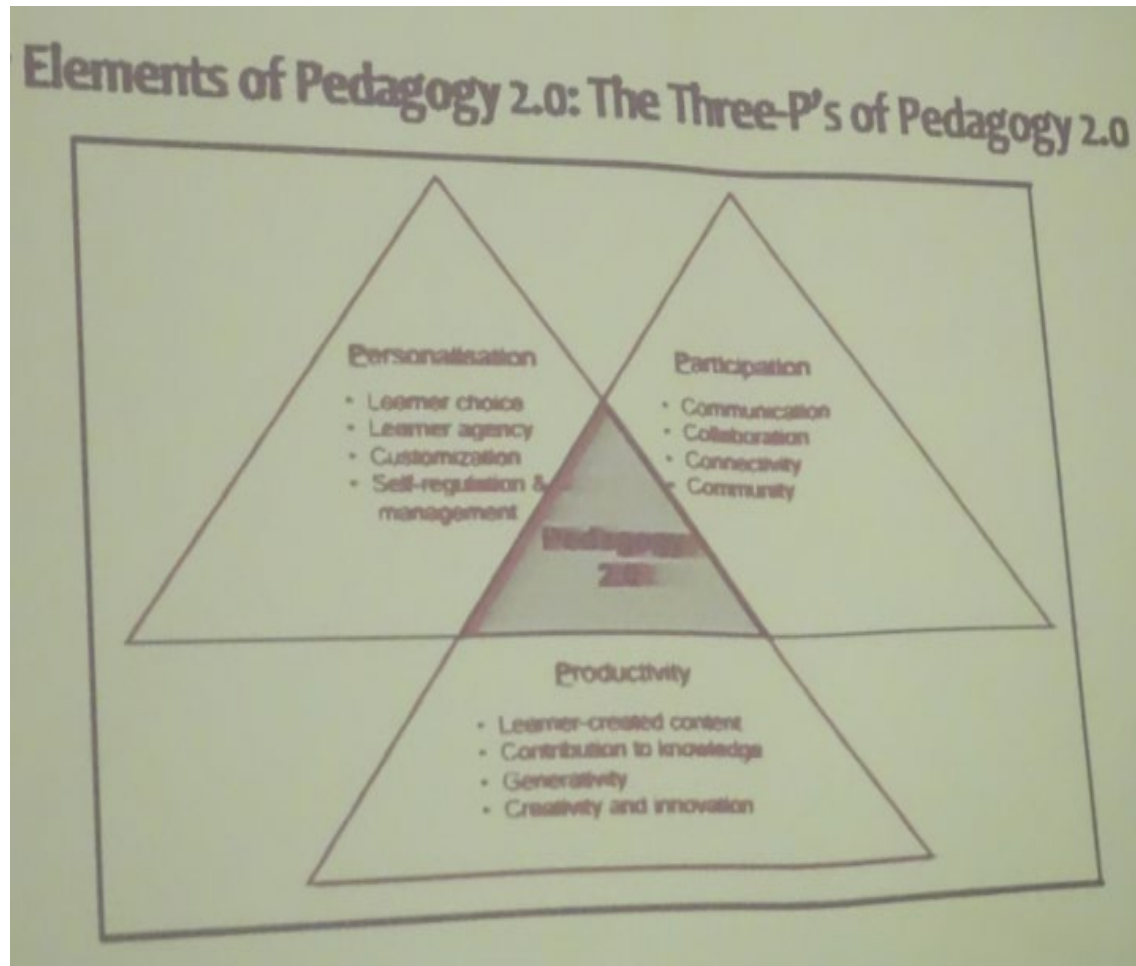
The design is based on putting the learner at the center
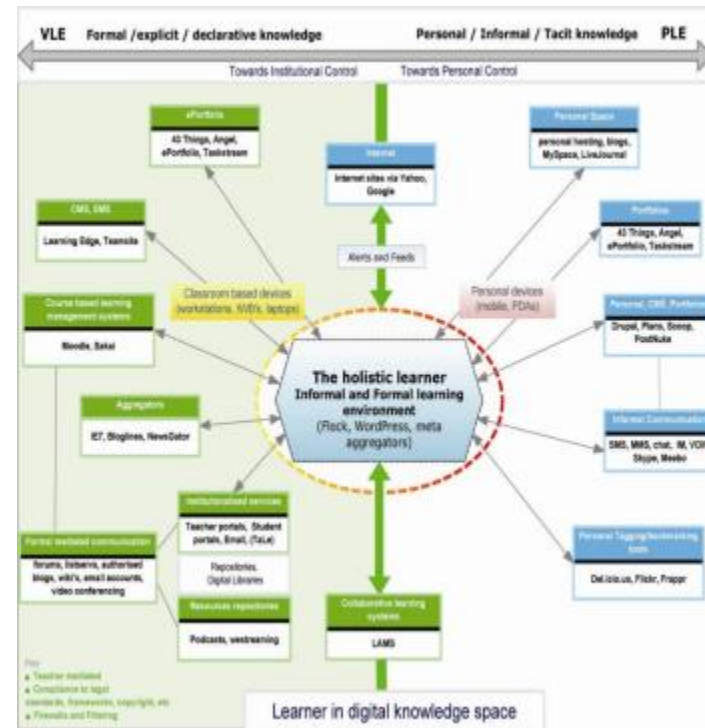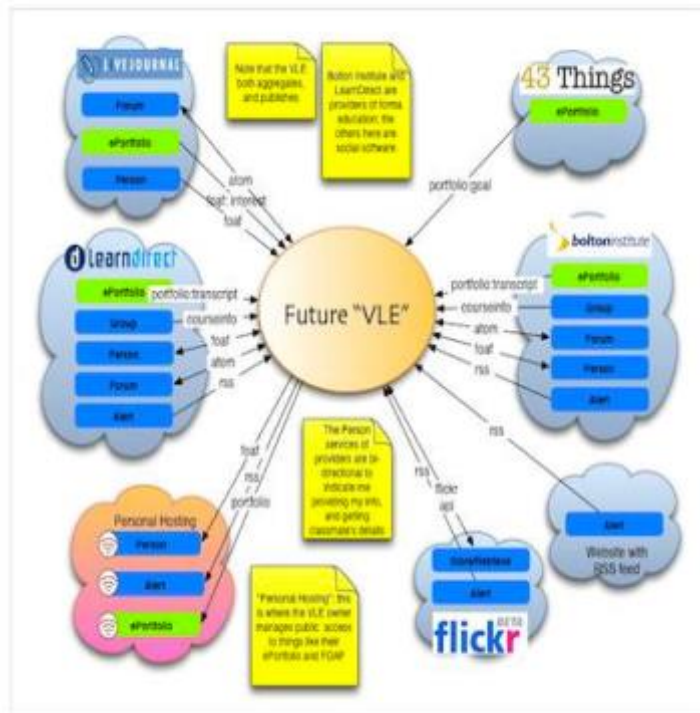
Scott Wilson (left), Tim Hand (right)
https://www.google.com/search?q=ple+diagrams
http://www.edtechpost.ca/ple_diagrams/index.php/mind-map-3

This is known generally as the 'Personal Learning Environment' (PLE)

- The PLE as concept

- Web 2.0 supported PLEs

- Game-based approaches and 'quantified self'

- Mobile learning

- The PLE as an assessment tool


Figure 1: A conceptual framework for developing Web 2.0 PLEs

http://en.wikipedia.org/wiki/History_of_personal_learning_environments
http://pleconf.org/2013/files/2014/07/v3.0_PLE_Conference2013_Research
Report_BeuthUniversity_MonashUniversity.pdf
Images: Ebrahim Rahimi, Jan van den Berg, Wim Veen;
Benedikt S. Morschheuser, Verónica Rivera-Pelayo,
Athanasios Mazarakis,
Valentin Zacharias
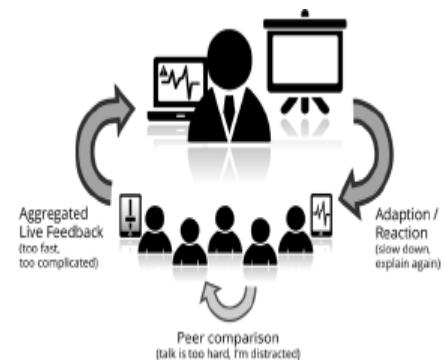
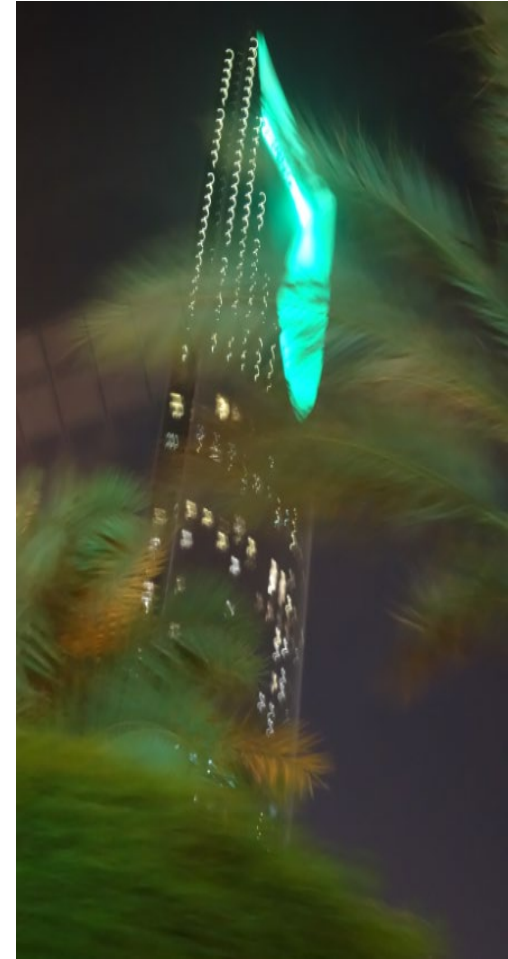# We are focused at the technology at the center
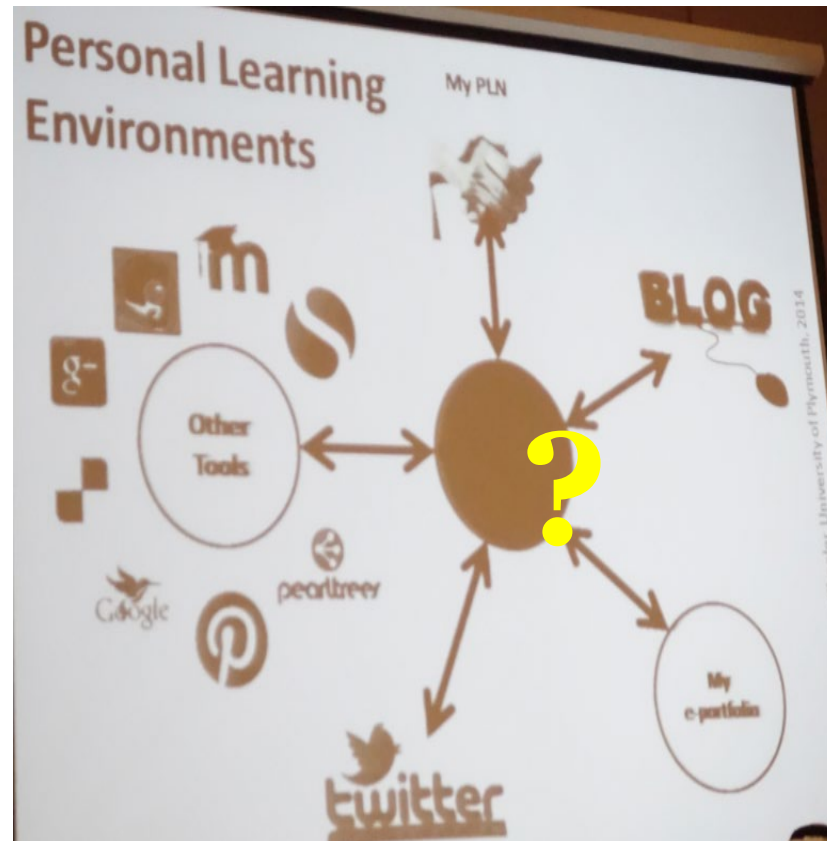
Learning and Performance Support Systems
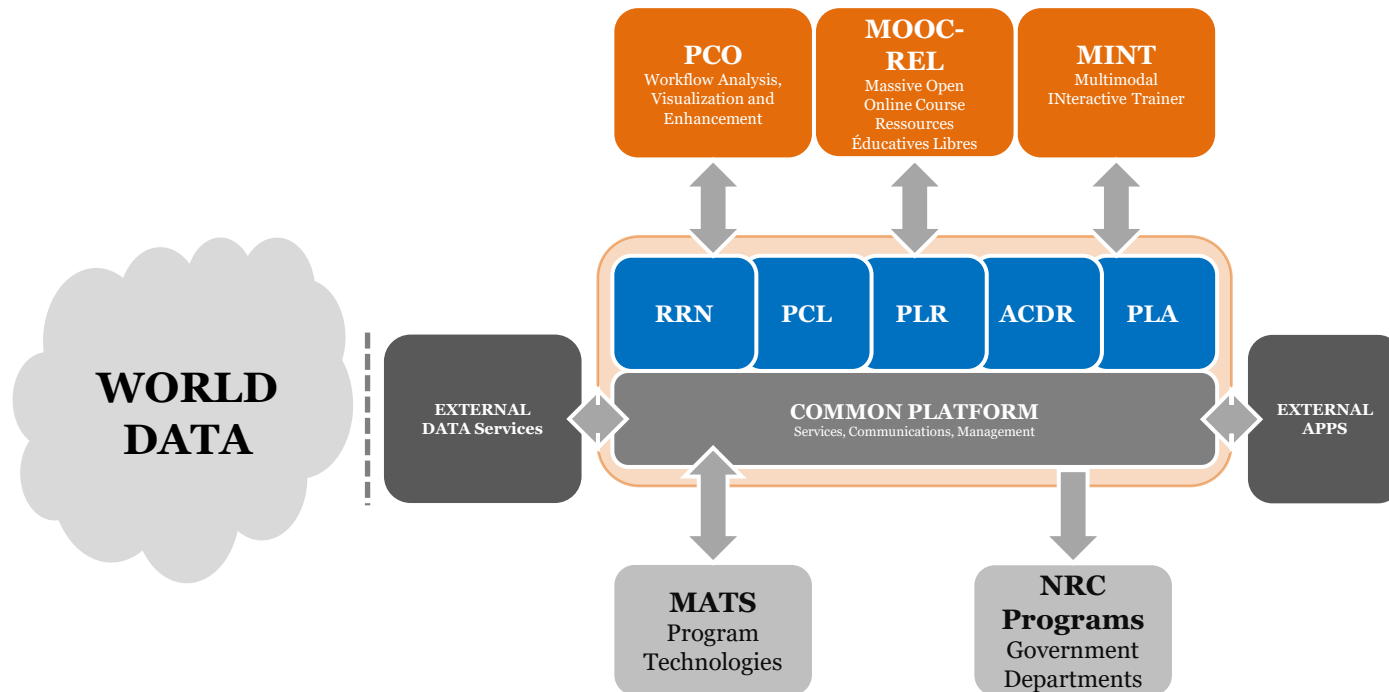
- It's a network of personal learning environments...
- ... connected to a large array of learning services

Launch

- Limited beta starting at the end of September
- Hosted service offered at http://lpss.me
- Slow roll-out of capacity over next 18 months
- Development of partnerships and capacity building projects

http://lpss.me – prototype PLE

Not a platform, but a connector of resources and services
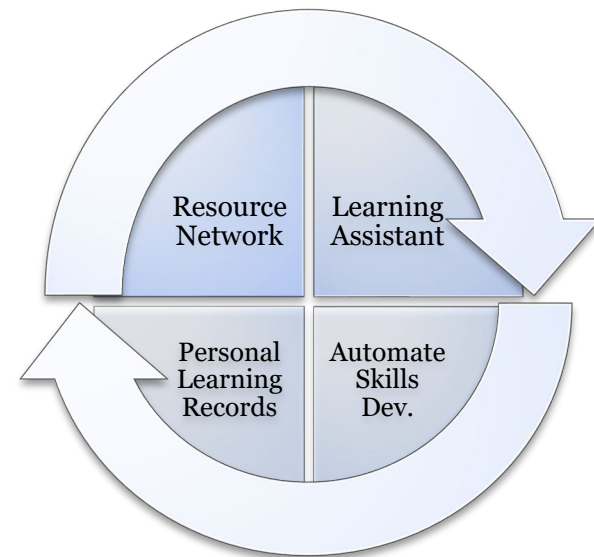

Easy

A) B) C)
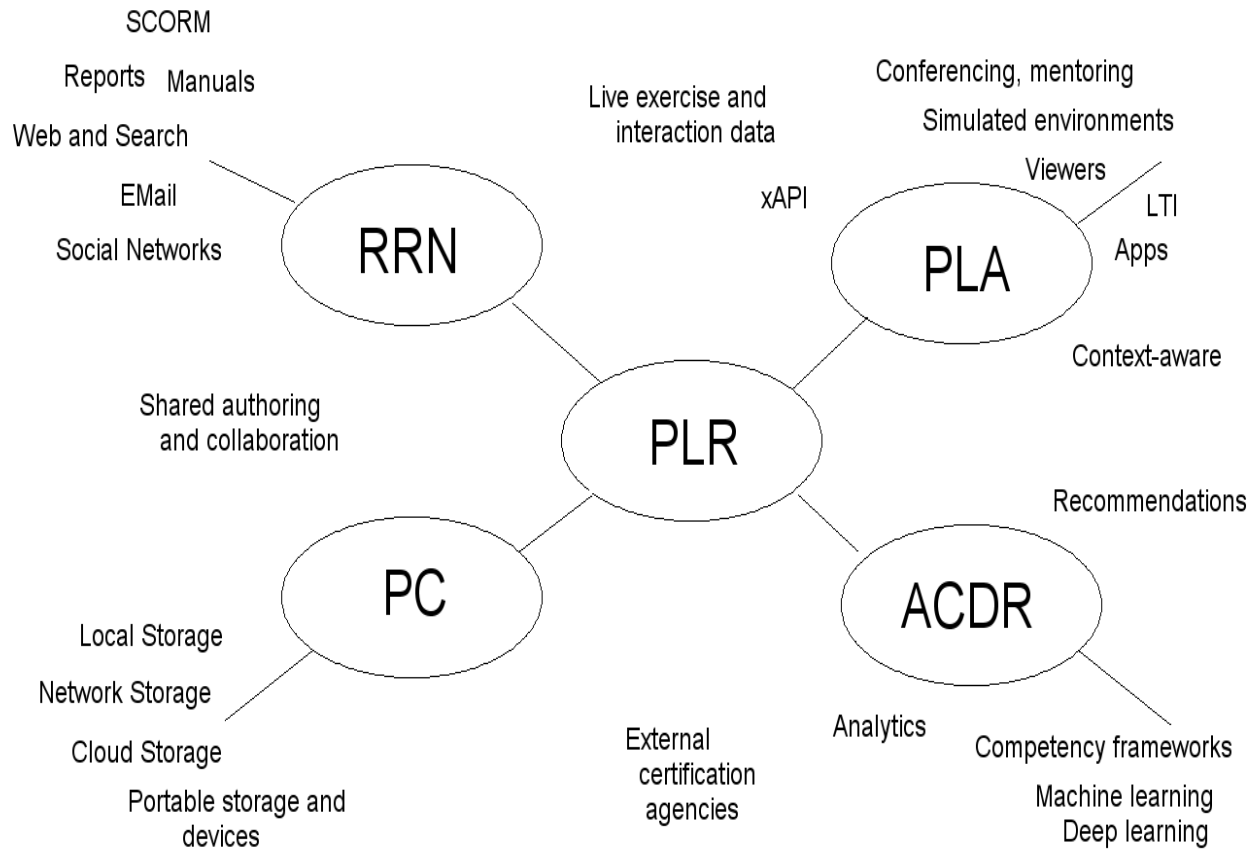
Muskel Mais

Rasendes Radieschen
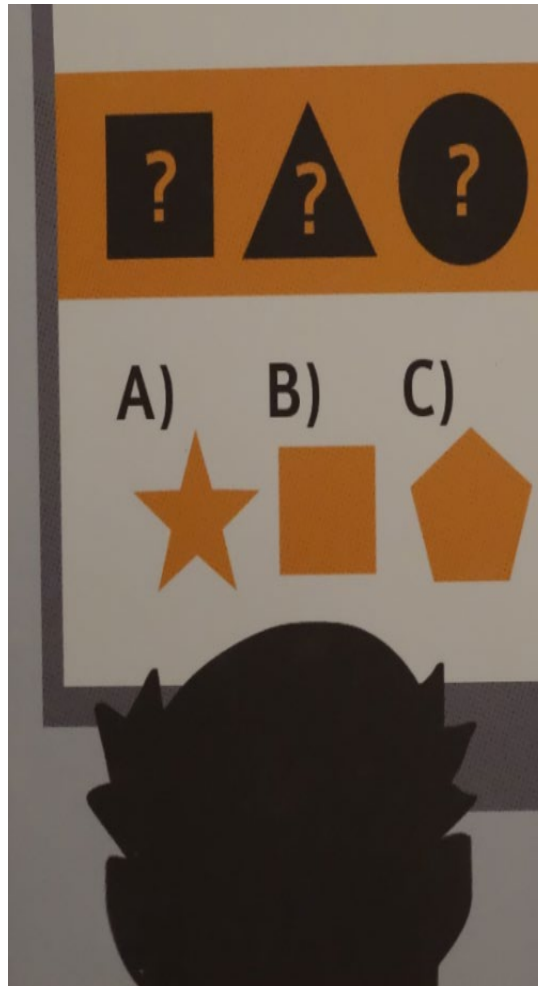
Core Technology Development Projects

- Learning services network and marketplace

- Automated skills development and recognition

- Lifetime management of learning and training records and credentials

- Personal learning assistant to view, update and access training

- Learning as a cloud service and deep integration with external systems

LPSS Core Projects

SCORM

Reports   Manuals

Web and Search

EMail

Social Networks

RRN

Live exercise and
interaction data

xAPI

Conferencing, mentoring

Simulated environments

Viewers

LTI

PLA

Apps

Context-aware

Shared authoring
and collaboration

PLR

Recommendations

PC

ACDR

Local Storage

Network Storage

Cloud Storage

Portable storage and
devices

External
certification
agencies

Analytics

Competency frameworks

Machine learning
Deep learning

An open marketplace of free and non-free educational goods and services (all this and Ed Net Neutrality?)
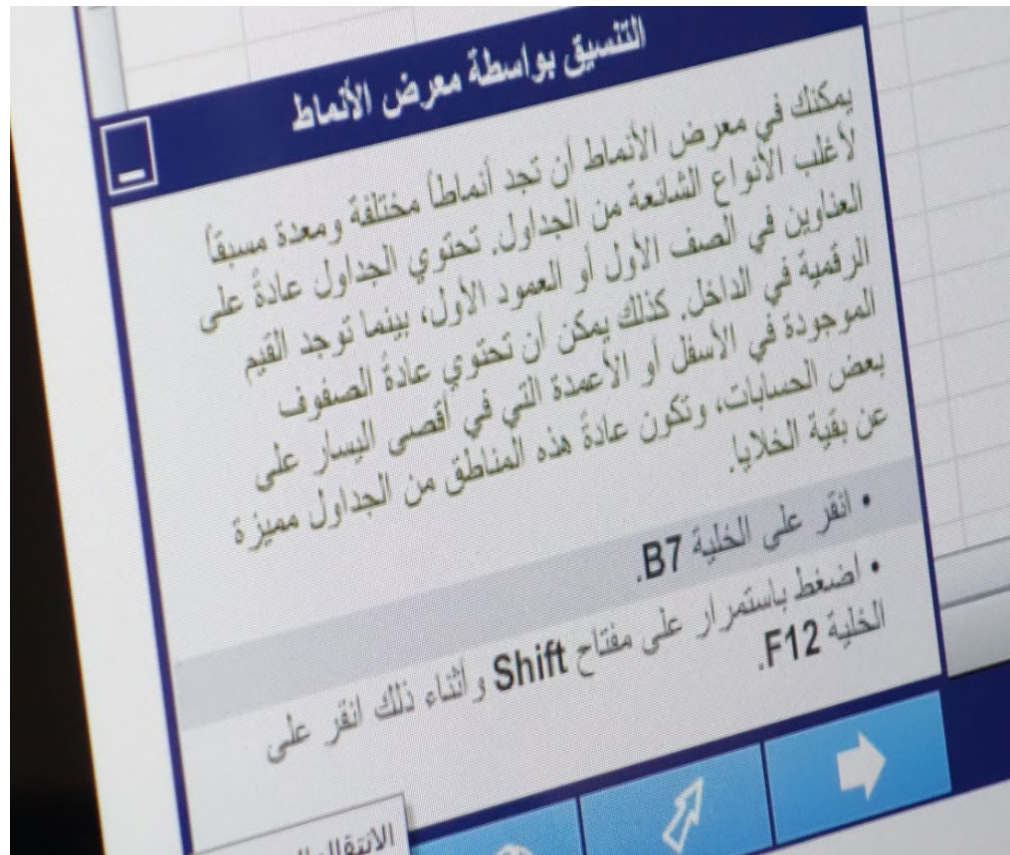
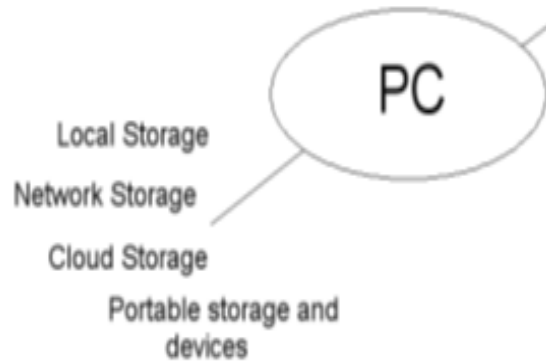# Resource Repository Network
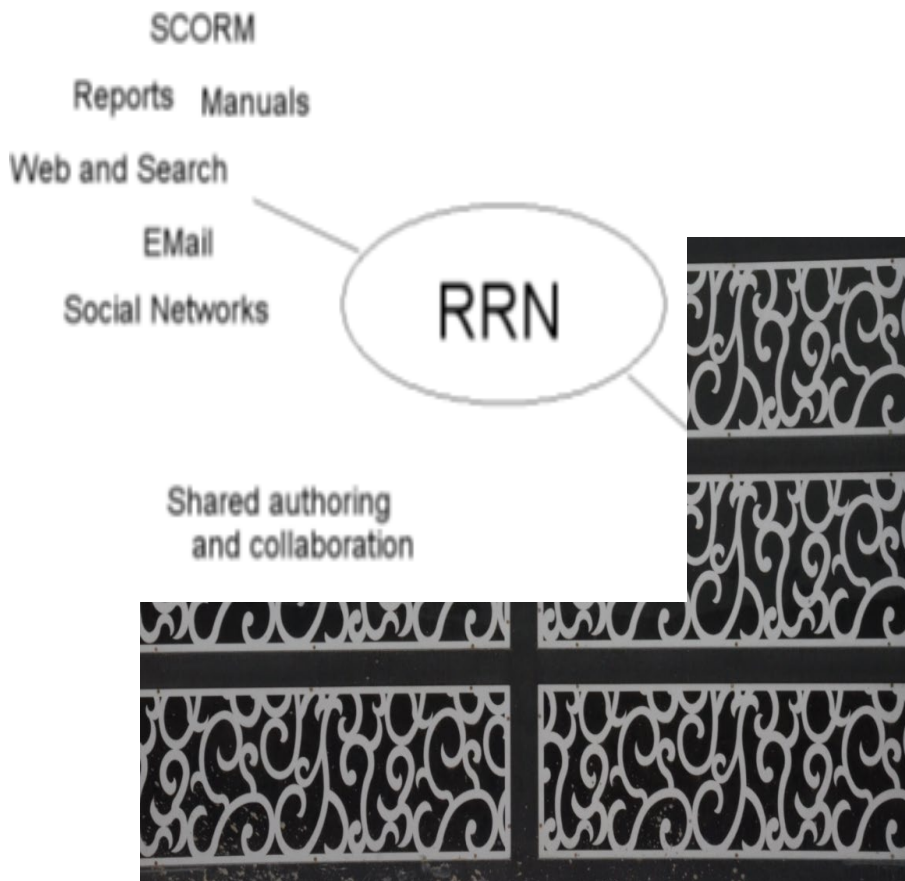
- Manage and discover list of sources and resources
- Maintain authentication and credentials
- Support APIs and metadata standards
- Gather, analyze and sort resources and/or metadata

Synchronized cloud data services (including Owncloud) to support data portability
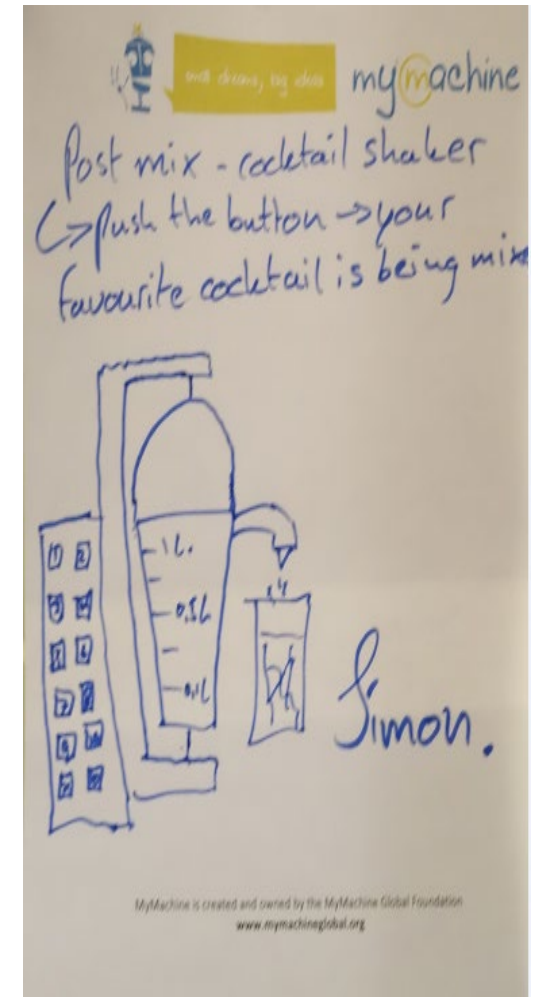
Personal Cloud

- Manage list of local and remote storage systems
- Maintain security, encryption, authentication and credentials
- Include local or personal device storage
- Manage and synchronize resource sets and data

Projection of learning services into multiple platforms

Personal Learning Assistant

- Collect contextual information for system
- Display resources of various formats, including SCORM, LTI, etc.
- Support (scaffolded) authoring environments
- Project LPSS capacity into external software and devices

Conferencing, mentoring

Simulated environments

Viewers

LTI

Apps

PLA

Context-aware
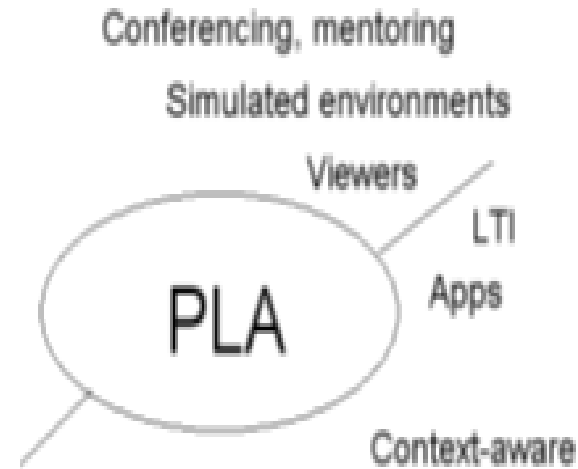
Connecting to real learning and workplace environments

http://www.nrc-cnrc.gc.ca/eng/rd/medical/

Competency Recognition and Development

- Import or create competency definitions
- Analyze interactions for skills and learning gaps
- Support development of learning plans
- Provide resource and service recommendations

Recommendations

ACDR

Analytics

Competency frameworks

Machine learning
Deep learning

Analytics as a service – analogy with web translation

The Personal Learning Record – data owned by the individual, shared only with permissions

Personal Learning Record

Live exercise and
interaction data

xAPI

PLR

External
certification
agencies
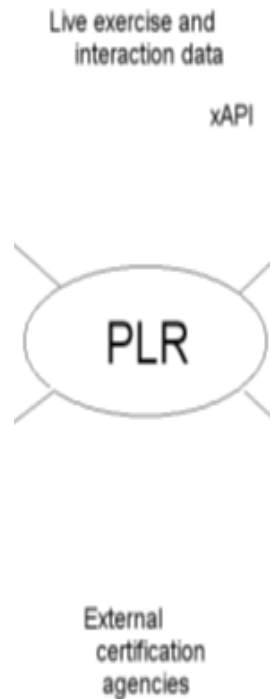
- Collect full record of interactions with all resources, external systems
- Support learning activity data exchange formats (eg. xAPI)
- Collect and present a person's personal portfolio
- Display certifications and credentials (eg. badges)
- Maintain 3rd party certification

Relevant PLR Projects

- Manchester PLE Project
- Responsive Open Learning Environments (ROLE) http://www.role-project.eu/
- Known http://withknown.com/
- Learning Locker http://learninglocker.net/
- Mahara https://mahara.org/

http://personalis.wikispaces.com/PLE+Projects

Implementation – from MOOC to Personal Learning

- MOOC-REL (OIF)

- ALECSO

- MINT

- Badges

- Simulator

- Workplace T&D

Implementation Projects
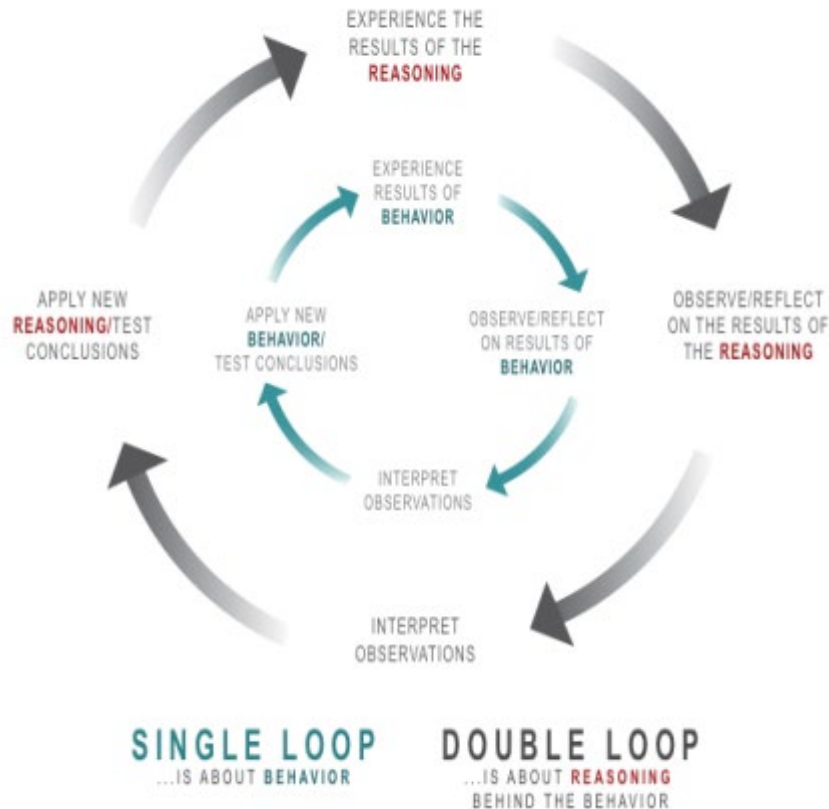
Ultimately, the objective is to support individual learning in a network

Why is this important?

- Because technology is *not* just a tool
- It gives us the capacity to do new things (the 'affordances argument')
- It represents an extension of our perceptions (the McLuhan argument)
- "We shape technology, and then technology shapes us"

What kind of learner we become depends on what kind of learning technology we choose
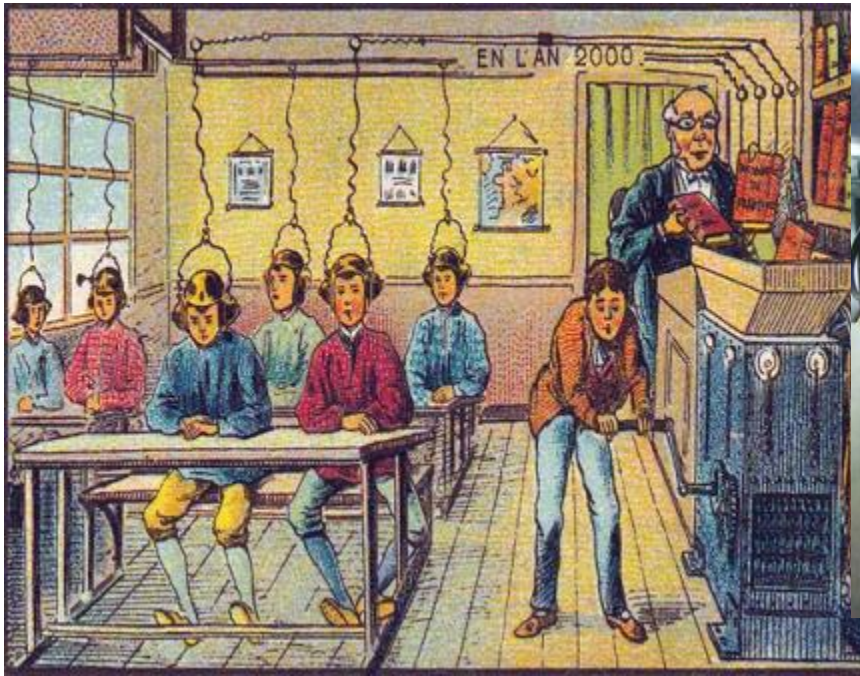
- Stephen Downes
- http://www.downes.ca

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