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### Developing Personal Learning Downes, Stephen

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# Developing Personal Learning

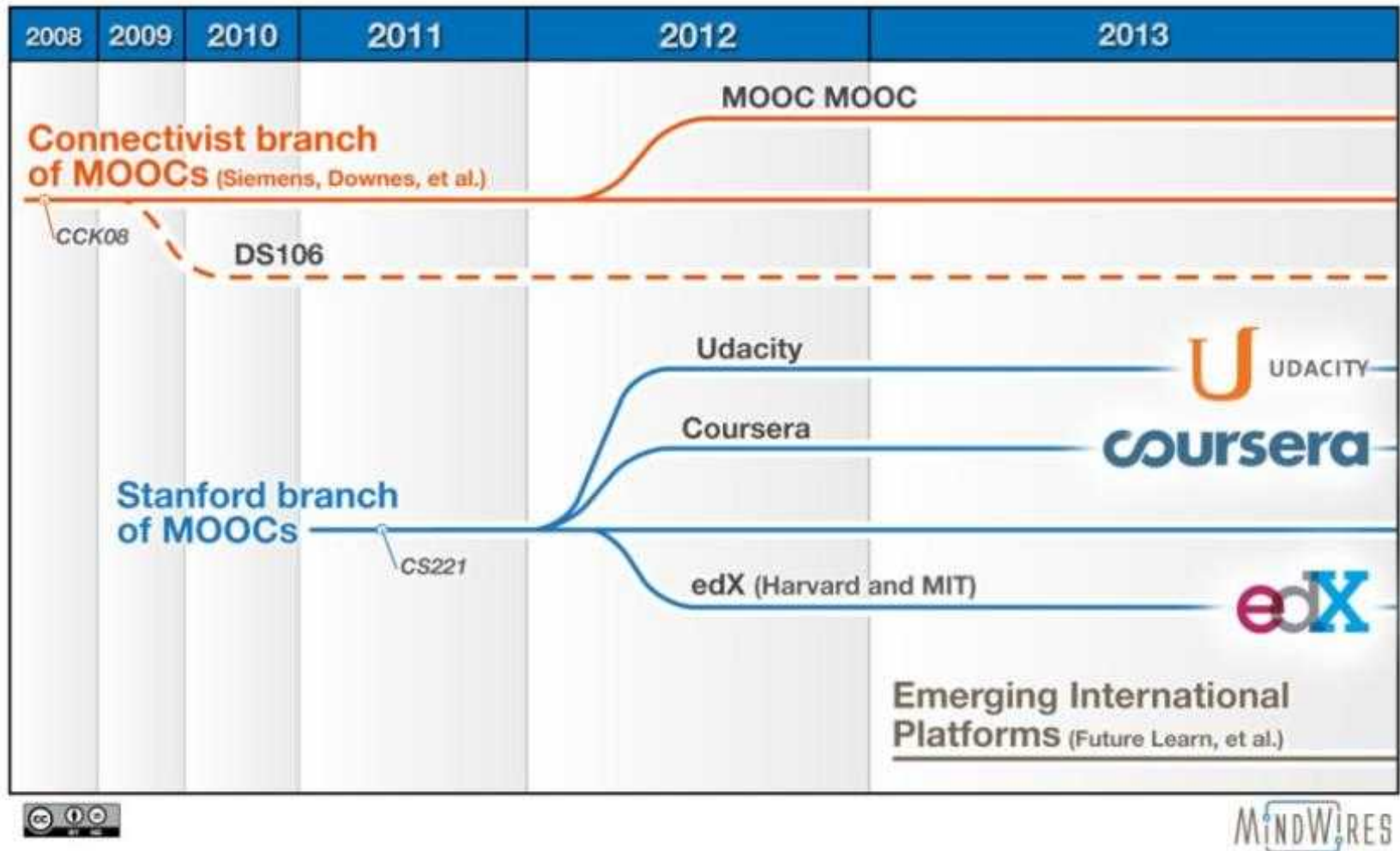
Stephen Downes

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



<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

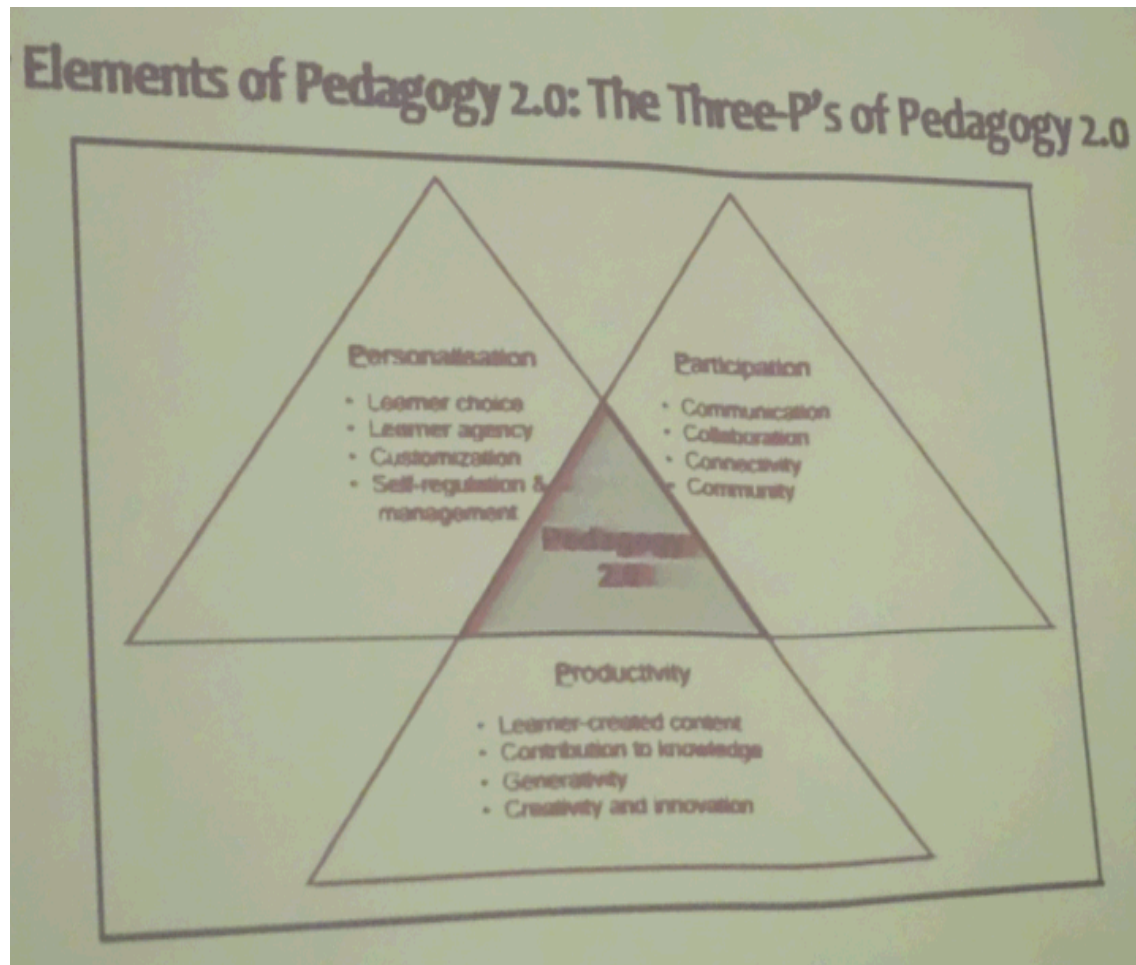
# This is the basis of our approach to learning technologies

- 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

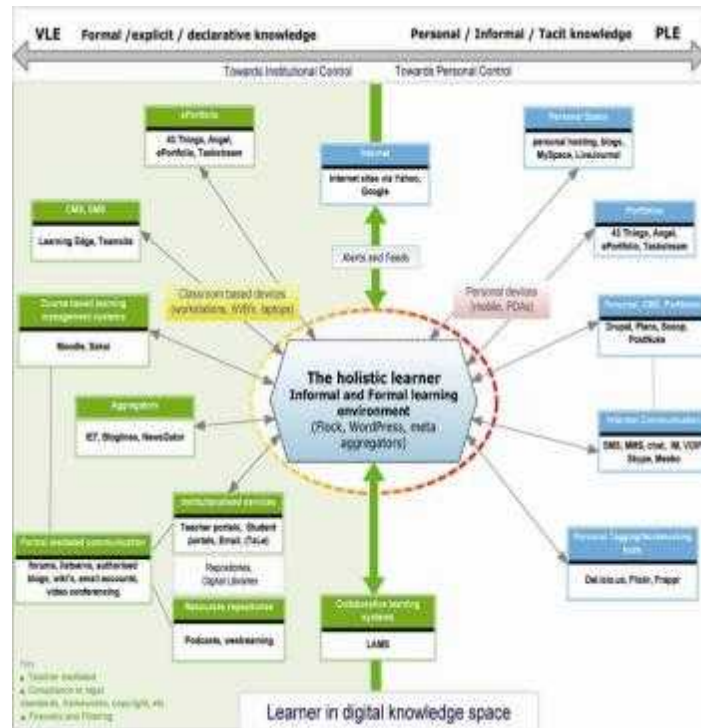
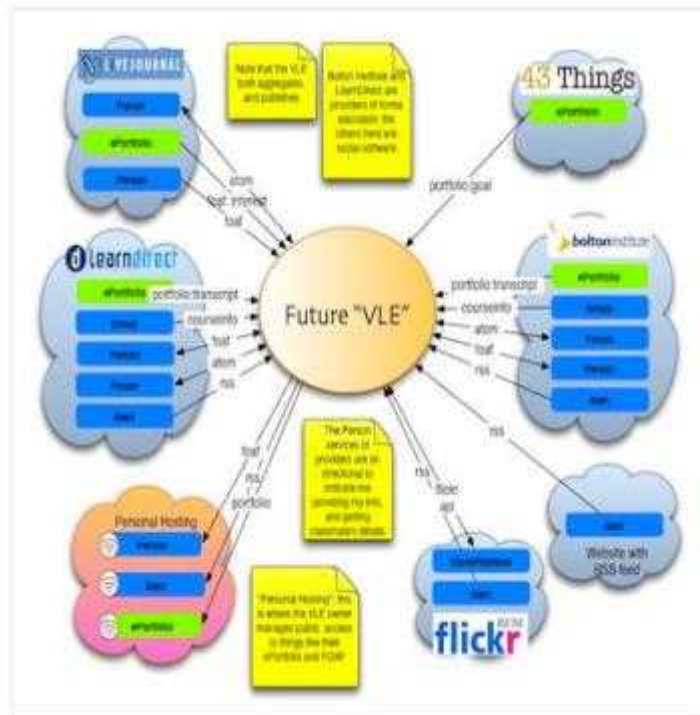




You can also see it in Pedagogy 2.0



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](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

[http://en.wikipedia.org/wiki/History\\_of\\_personal\\_learning\\_environments](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](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

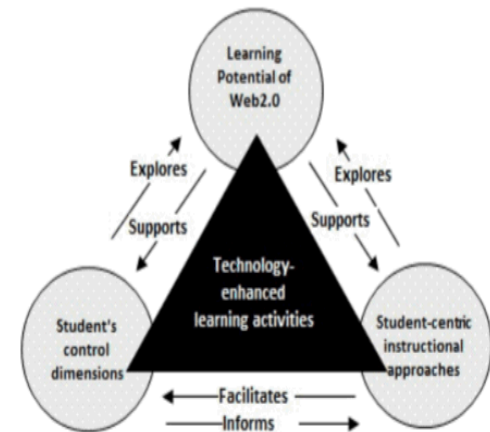
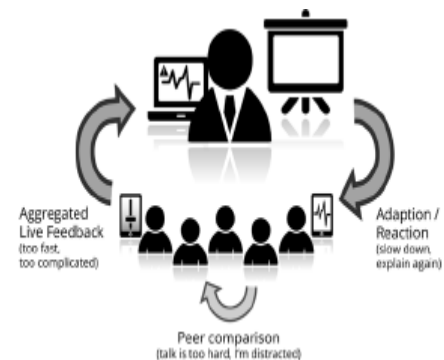
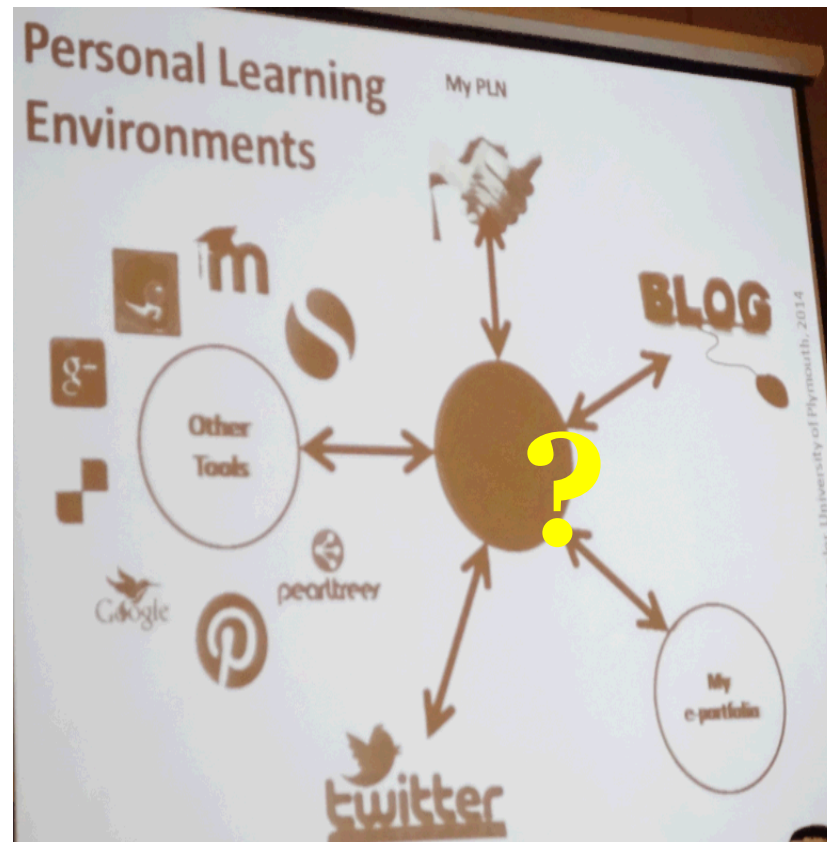


Figure 1: A conceptual framework for developing Web 2.0 PLEs

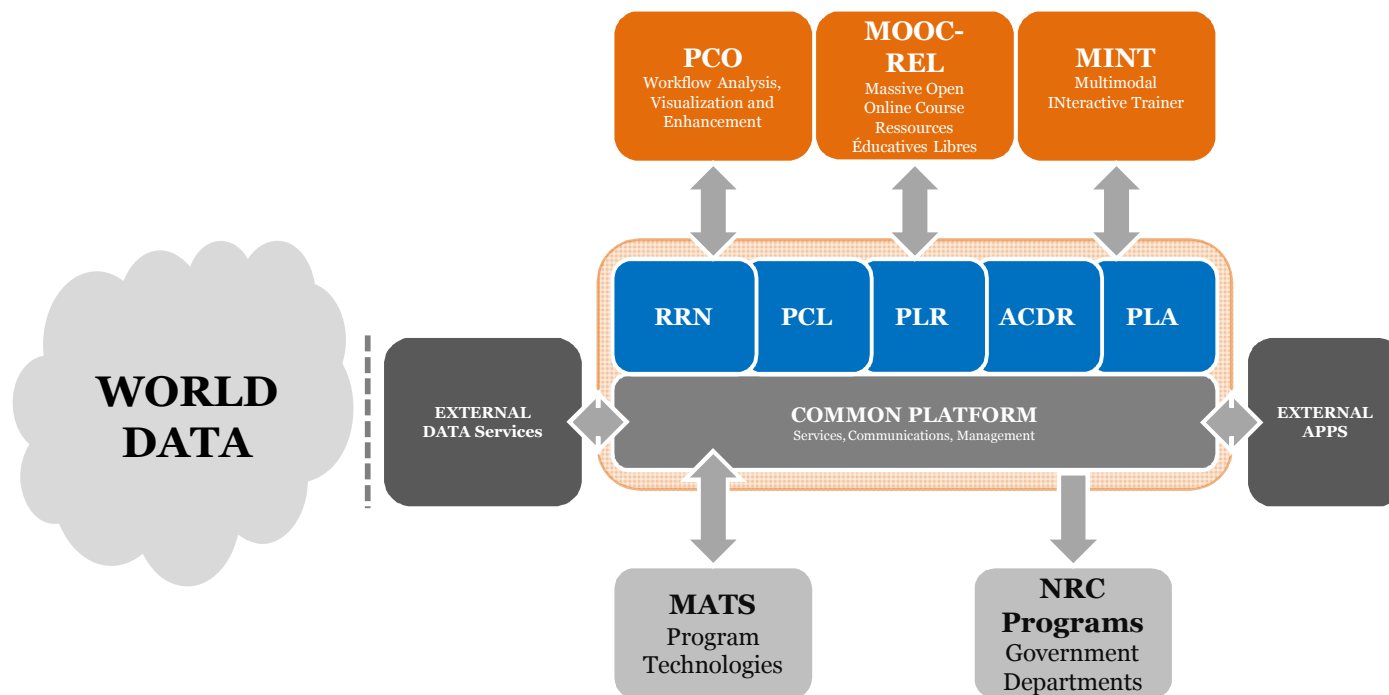


We are focused at the technology at the center



<http://halfanhour.blogspot.com/2014/09/steve-wheeler-september-17-riyadh-notes.html>

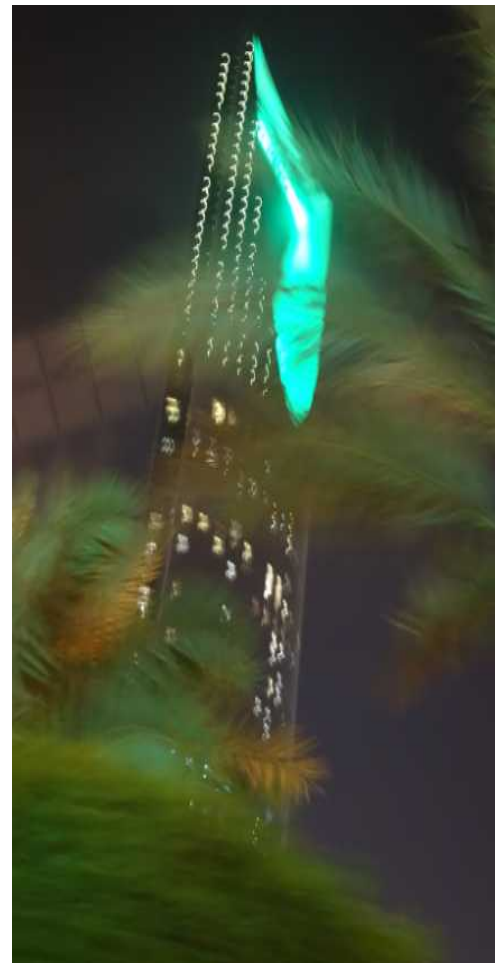
# Learning and Performance Support Systems



- 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

The screenshot displays the LPSS (Learning Personalized Social System) prototype PLE interface. The top navigation bar includes the LPSS logo, a home icon, and links to Resources, Competencies, Learning record, About, Help, Settings, and Logout. The main section is titled "Browse competencies" with a [help] link. Below this is a search bar with the placeholder text "Search for what interests you" and a Search button. To the right of the search bar is a pagination control showing page numbers 1, 2, 3, ..., 7, and navigation arrows. Below the search bar are two buttons: "Competency" (with a plus icon) and "Import" (with a document icon). There are also two checkboxes: "Competency hierarchies" (checked) and "Only my competencies" (unchecked). Below these are two more checkboxes: "Competencies" (checked) and "Only my competencies" (unchecked). The main content area displays a grid of competency cards. Each card contains a description of a competency, an "Add to my profile" button, and a resource count. The cards are arranged in two rows. The first row includes: "Acknowledges the practical limits of a system for problem solving" (resources: 69), "Analyze a situation in a systematic manner" (resources: 19), "Applies different software development methodologies" (resources: 59), "Be familiar with adult learning techniques such as mentoring, coaching, and the sharing of expertise and best practices" (resources: 72), and "Communicate to clients those activities that can and cannot be done" (resources: 15). The second row includes: "Acts with fairness, courtesy and good faith towards clients, colleagues and others" (resources: 16), "Analyze issues to separate the cause from the symptoms" (resources: 16), "Applies the correct statistical methods to analyze and investigate data" (resources: 16), "Build mutual trust by being reliable, consistent and credible" (resources: 10), and "Communication" (resources: 10).

**LPSS** [Resources](#) [Competencies](#) [Learning record](#) [About](#) [Help](#) [Settings](#) [Logout](#)

## Browse competencies [\[ help \]](#)

Search for what interests you [Search](#)

1 2 3 ... 7 > >>

[+ Competency](#) [Import](#)

☒ Competency hierarchies ☐ Only my competencies

☒ Competencies

Acknowledges the practical limits of a system for problem solving [\[1\]](#)

☐ Add to my profile

resources: **69**

Analyze a situation in a systematic manner. [\[2\]](#)

☐ Add to my profile

resources: **19**

Applies different software development methodologies [\[1\]](#)

☐ Add to my profile

resources: **59**

Be familiar with adult learning techniques such as mentoring, coaching, and the sharing of expertise and best practices. [\[2\]](#)

☐ Add to my profile

resources: **72**

Communicate to clients those activities that can and cannot be done. [\[2\]](#)

☐ Add to my profile

resources: **15**

Acts with fairness, courtesy and good faith towards clients, colleagues and others [\[1\]](#)

☐ Add to my profile

resources: **16**

Analyze issues to separate the cause from the symptoms. [\[2\]](#)

☐ Add to my profile

resources: **16**

Applies the correct statistical methods to analyze and investigate data [\[1\]](#)

☐ Add to my profile

resources: **16**

Build mutual trust by being reliable, consistent and credible. [\[2\]](#)

☐ Add to my profile

resources: **10**

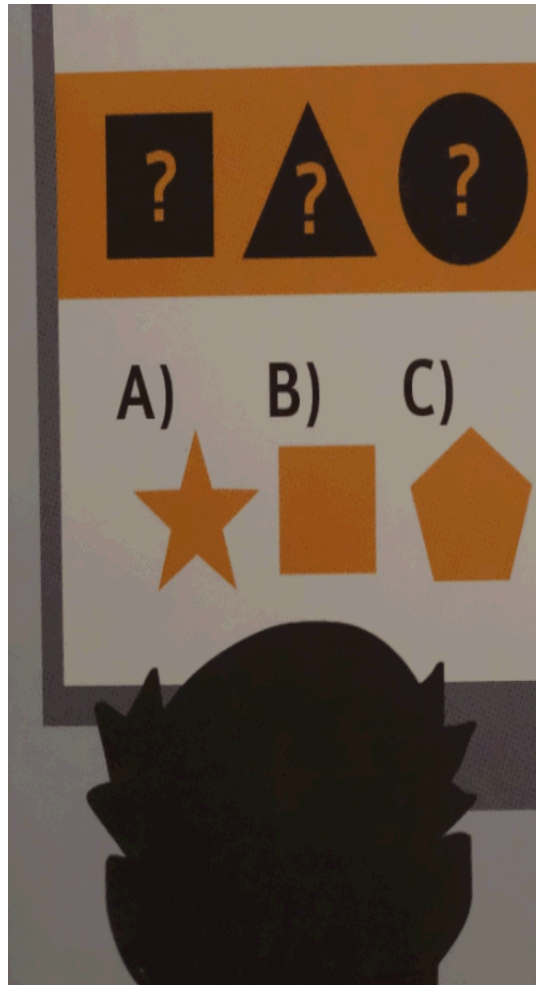
Communication [\[2\]](#)

☐ Add to my profile

resources: **10**



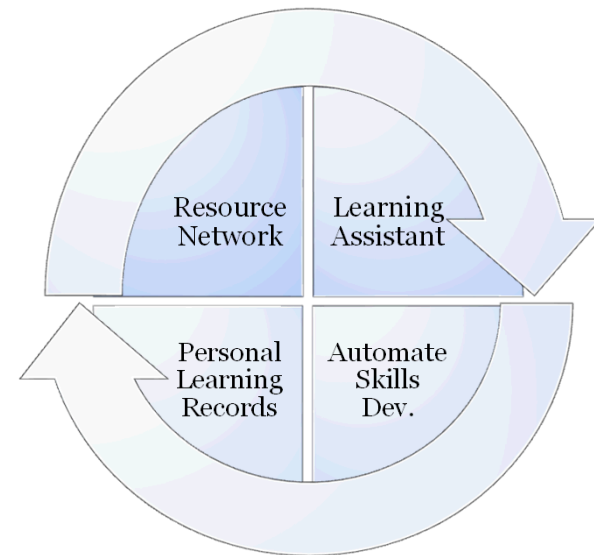
Not a platform, but a connector  
of resources and services



Easy

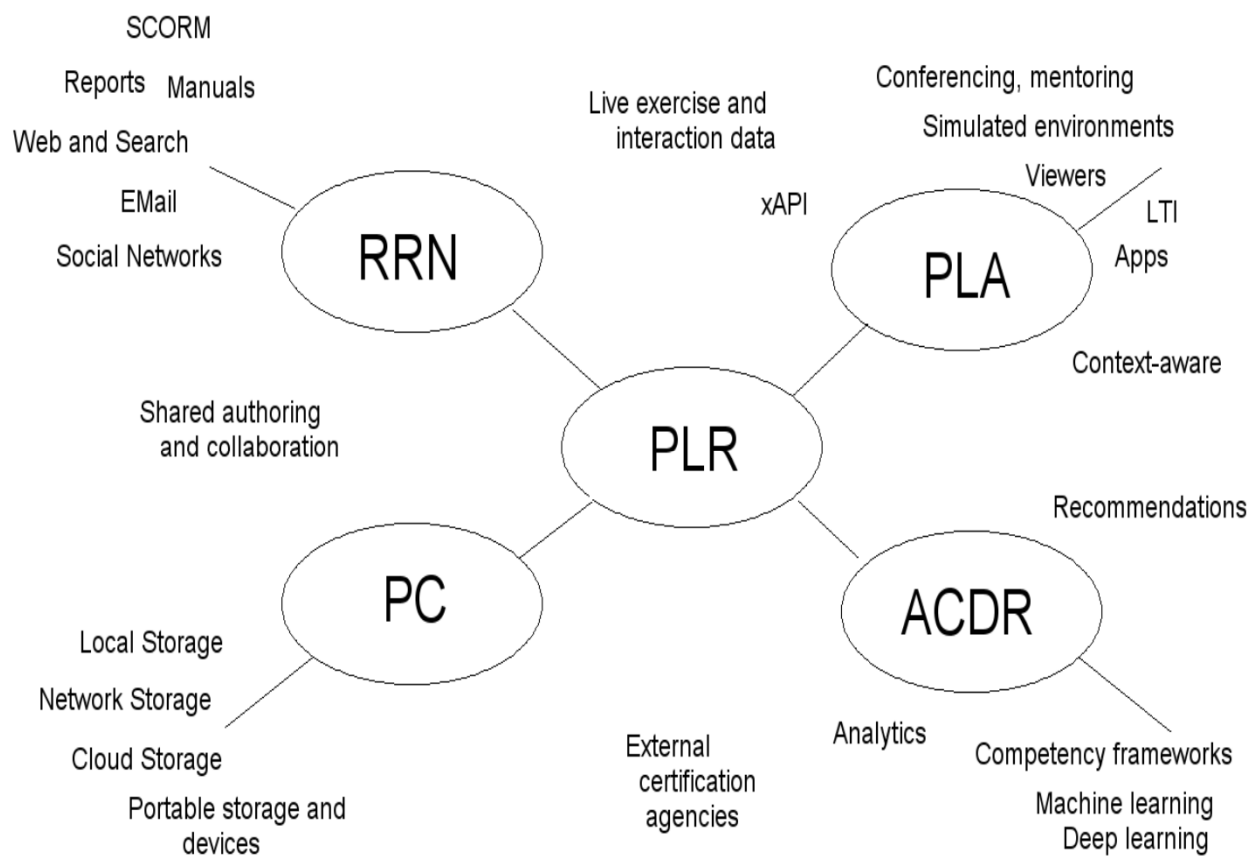
# Core Technology Development Projects

- 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

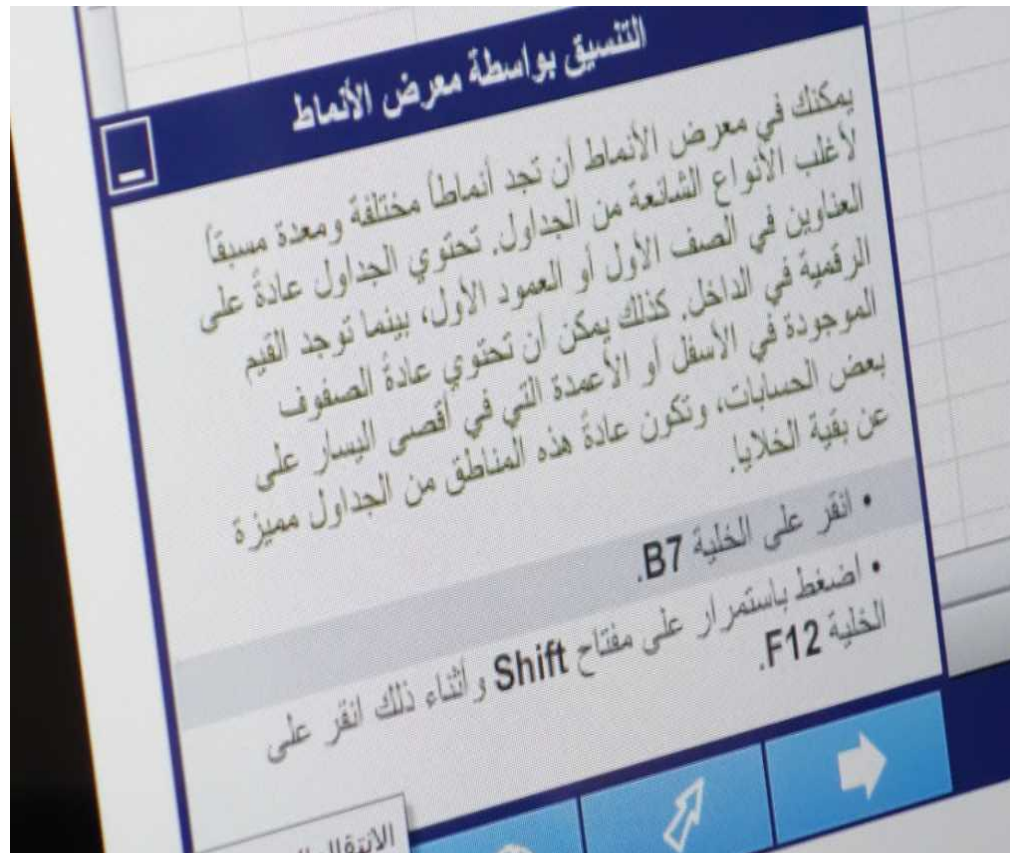


- Learning as a cloud service and deep integration with external systems

# LPSS Core Projects

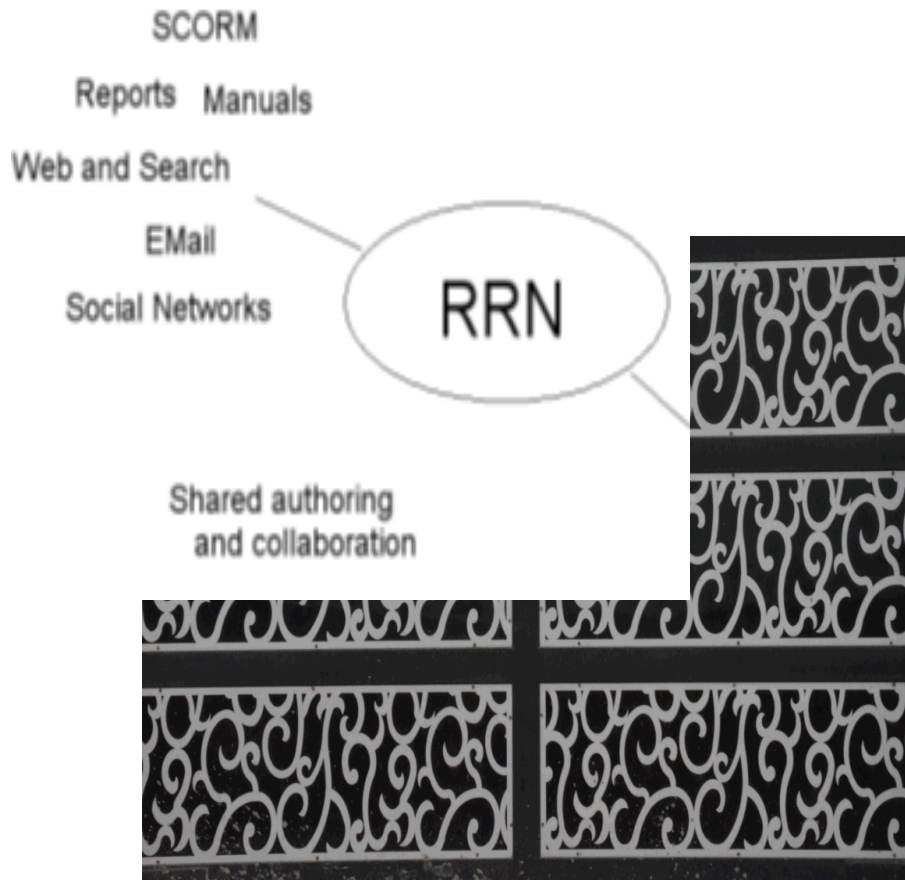


An open marketplace of free and non-free educational goods and services (all this and Ed Net Neutrality?)





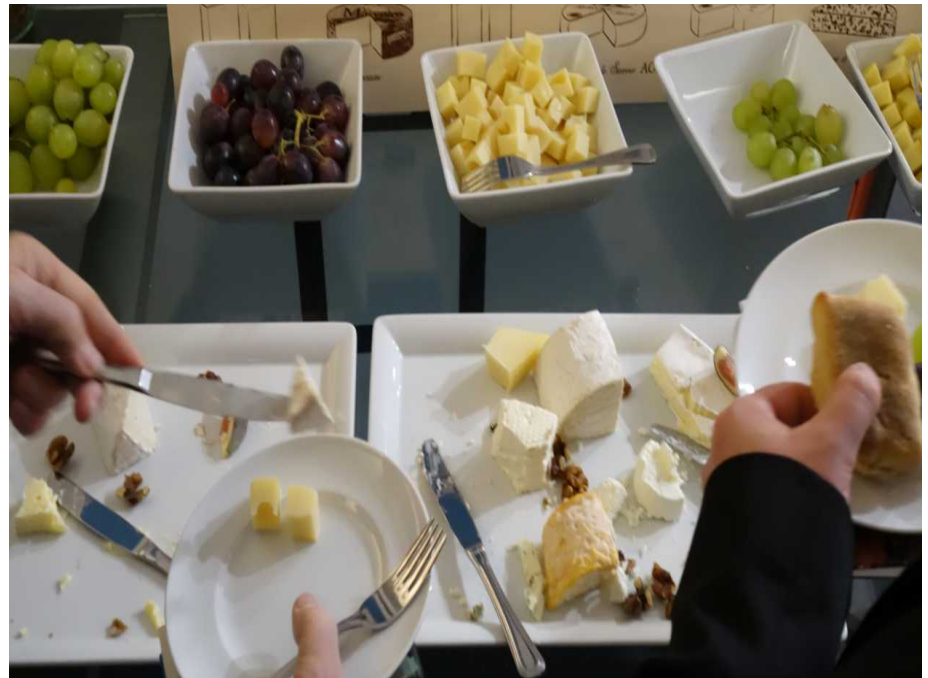
# Resource Repository Network



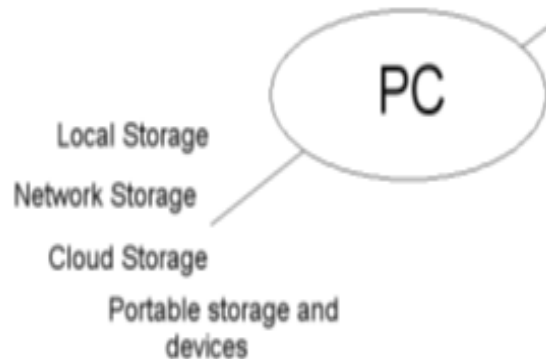
- Manage and discover list of sources and resources
- Maintain authentication and credentials
- Support APIs and metadata standards
- Gather, analyze and sort resources and/or metadata



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



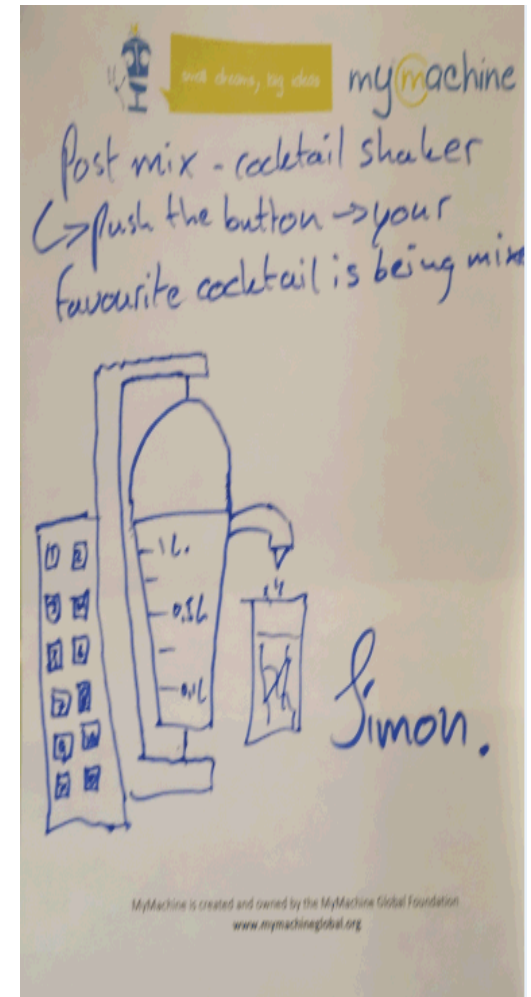
# Personal Cloud



- 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

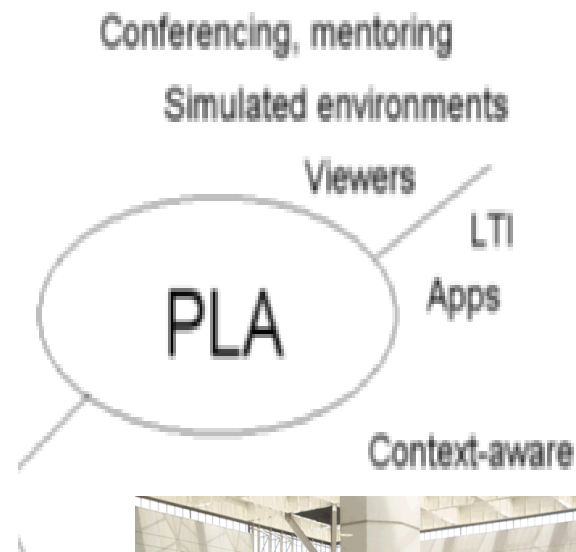


# Projection of learning services into multiple platforms



# 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







Connecting to real learning and workplace environments

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

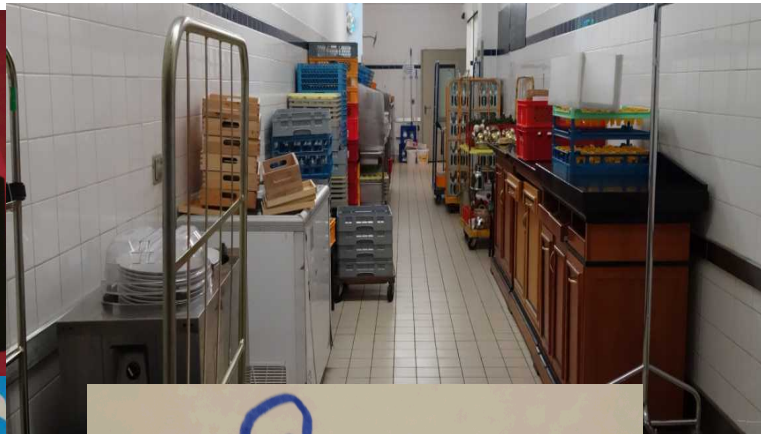
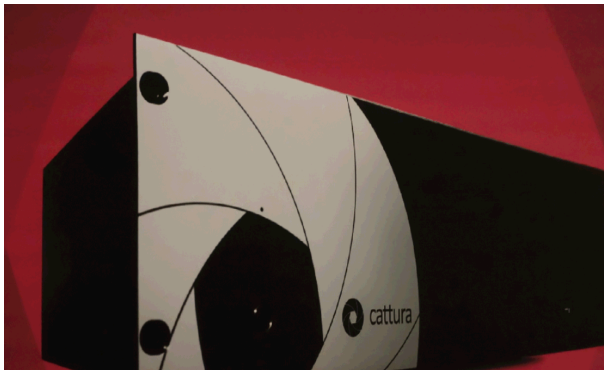


# Competency Recognition and Development

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



# Analytics as a service – analogy with web translation

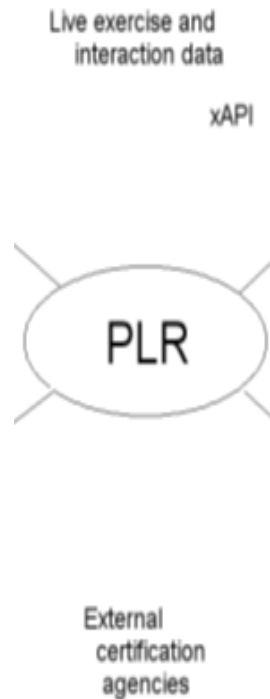




The Personal Learning Record – data owned by the individual, shared only with permissions

<http://halfanhour.blogspot.de/2014/12/eportfolios-and-badges-workshop-oeb14.html>

# Personal Learning Record

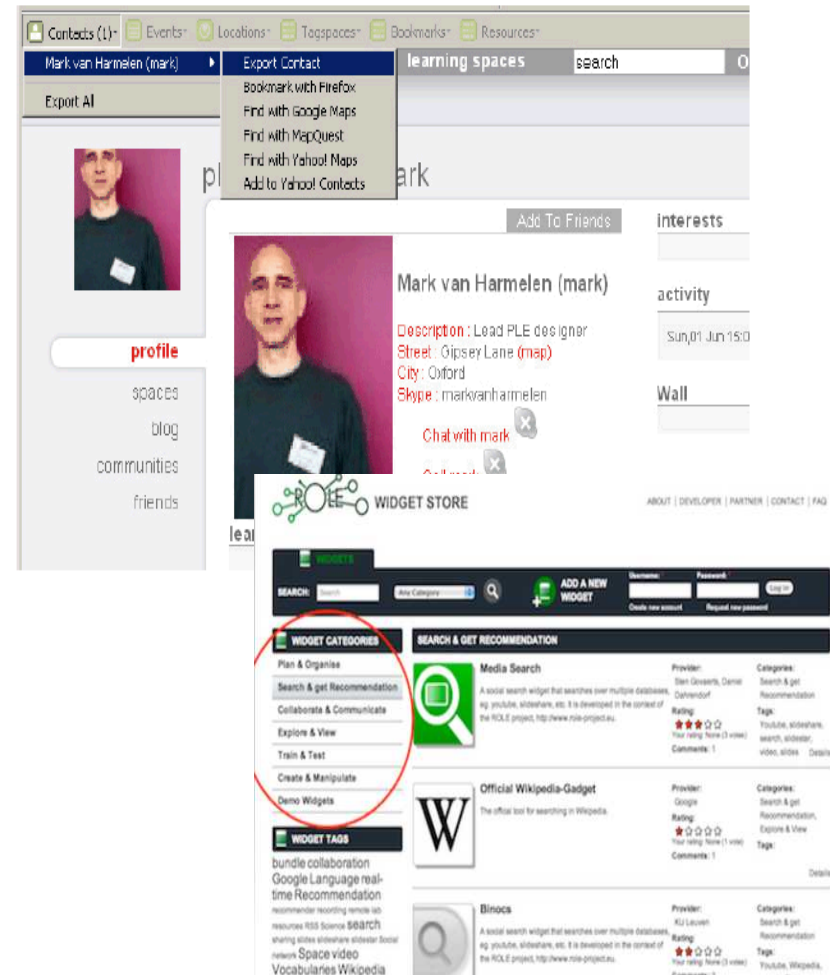


- Collect full record of interactions with all resources, external systems
- Support learning activity data exchange formats (eg. xAPI)
- Collect and present a person's personal portfolio
- Display certifications and credentials (eg. badges)
- Maintain 3<sup>rd</sup> party certification

# 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>



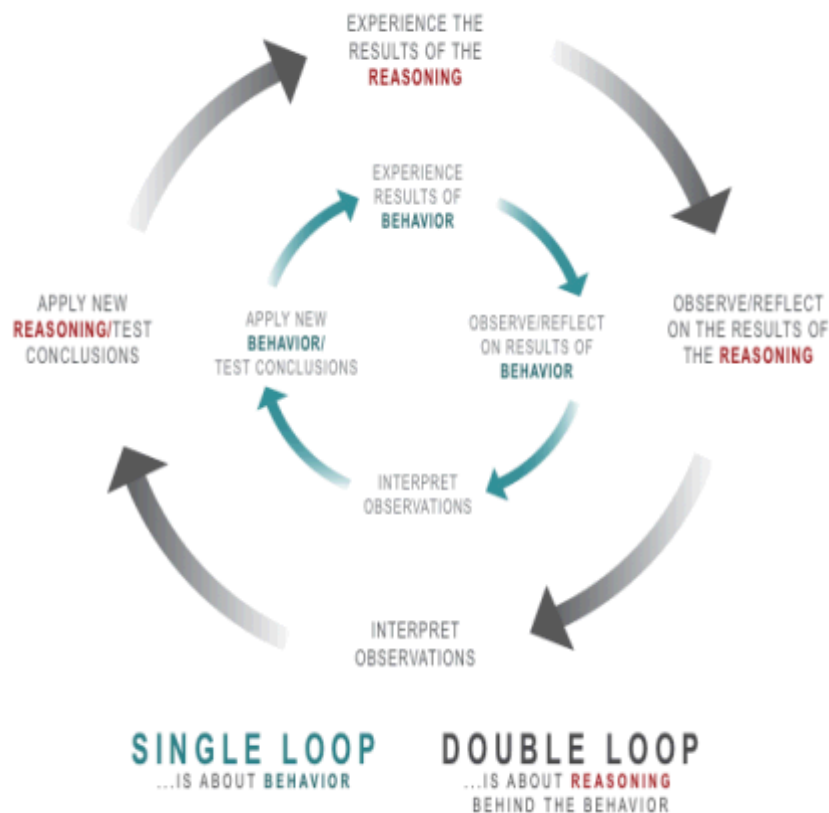


# Implementation – from MOOC to Personal Learning

- MOOC-REL (OIF)
- ALECSO
- MINT
- Badges
- Simulator
- Workplace T&D



# Implementation Projects



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

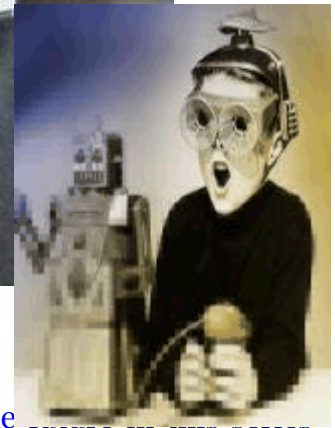
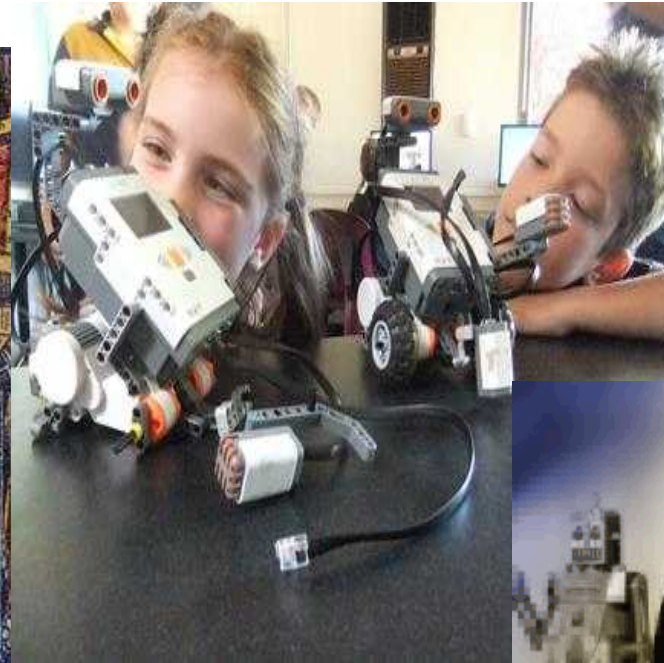
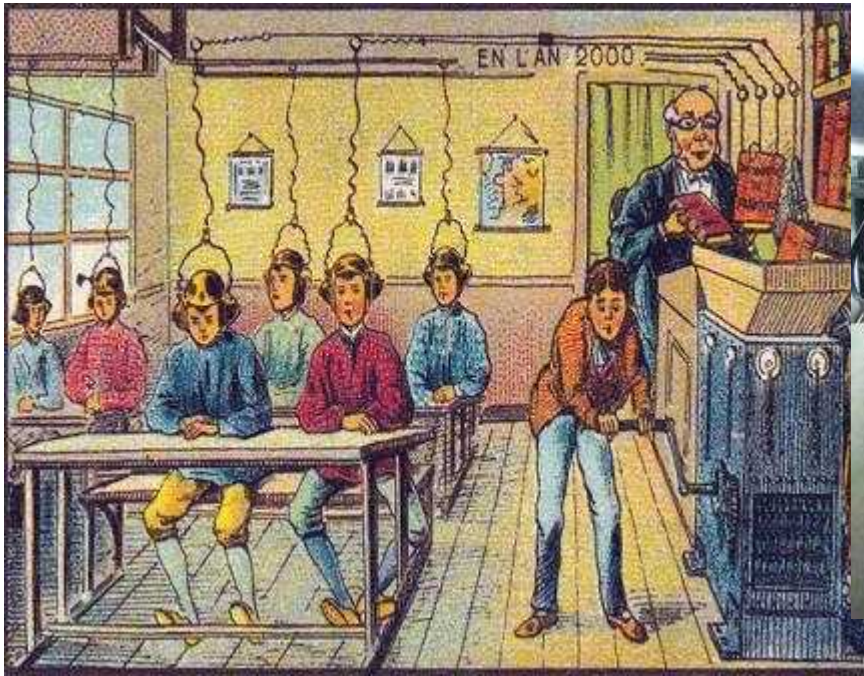
<http://integralleadershipmanifesto.com/manifesto/making-subject-object/>

# 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



<http://singularityhub.com/2012/10/15/19th-century-french-artists-predicted-the-world-of-the-future/>

<http://www.alter-inc.com/wearable.html>

<http://www.keithcotps.sa.edu.au/Learning.htm>





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