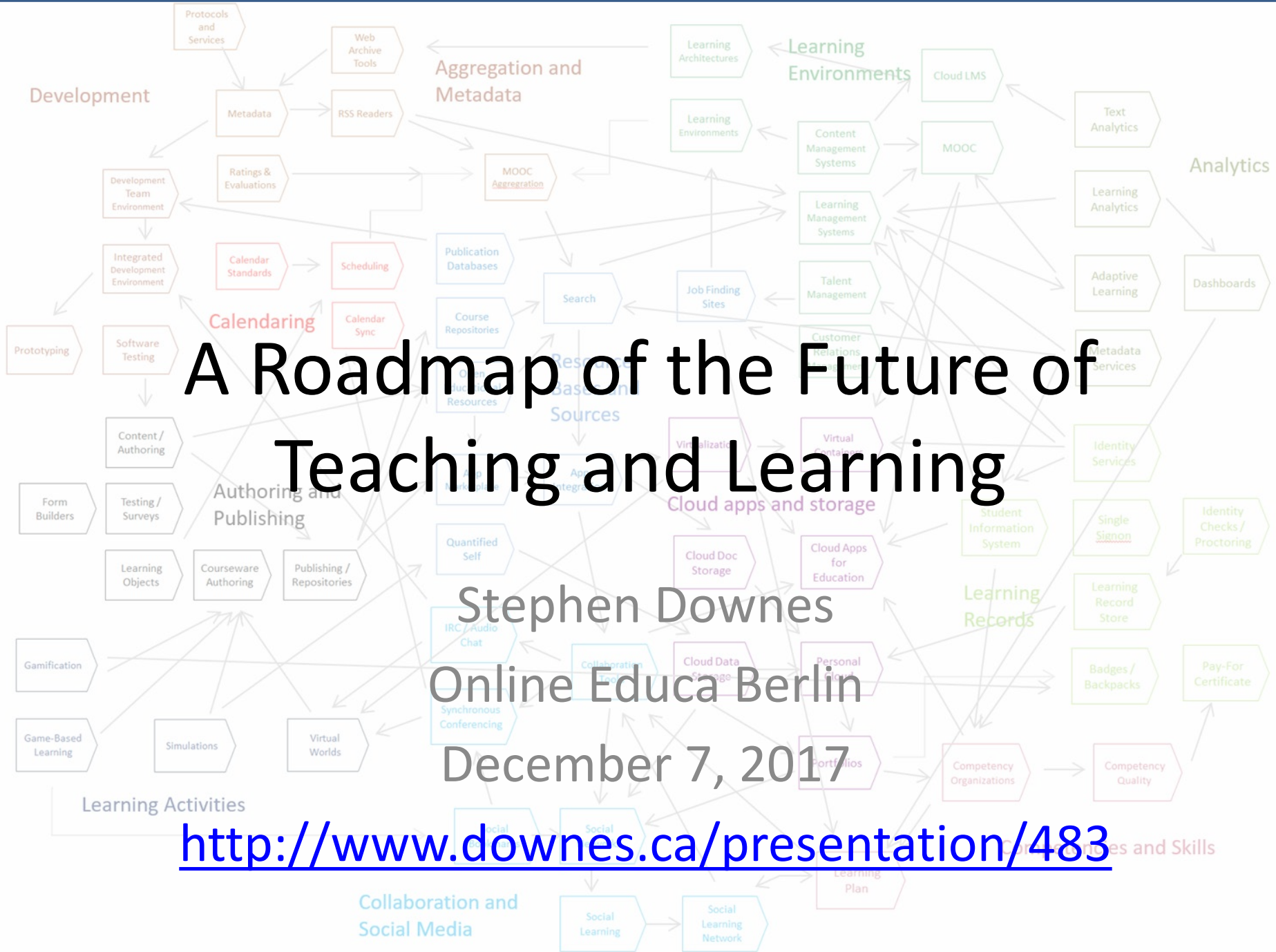
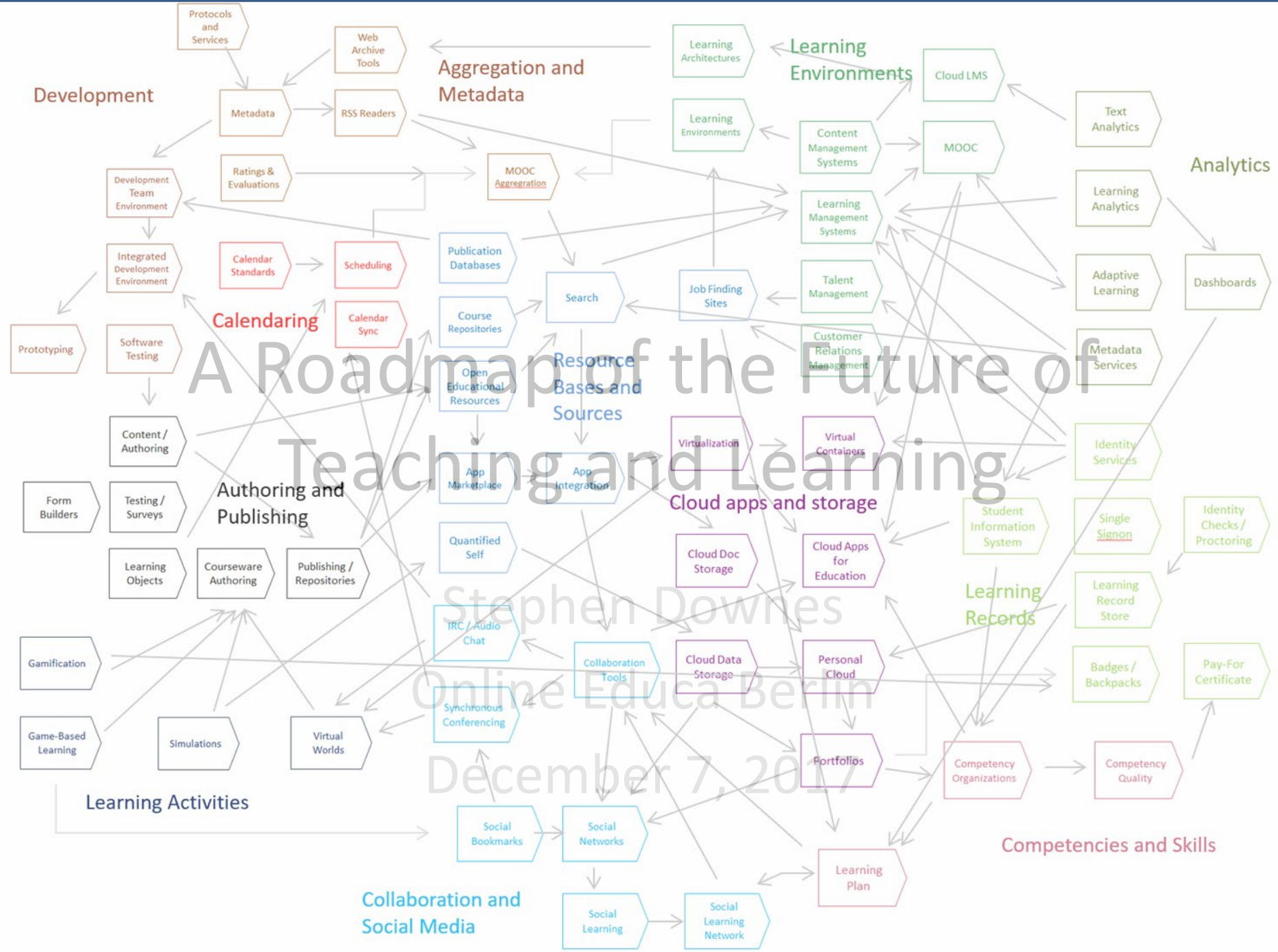


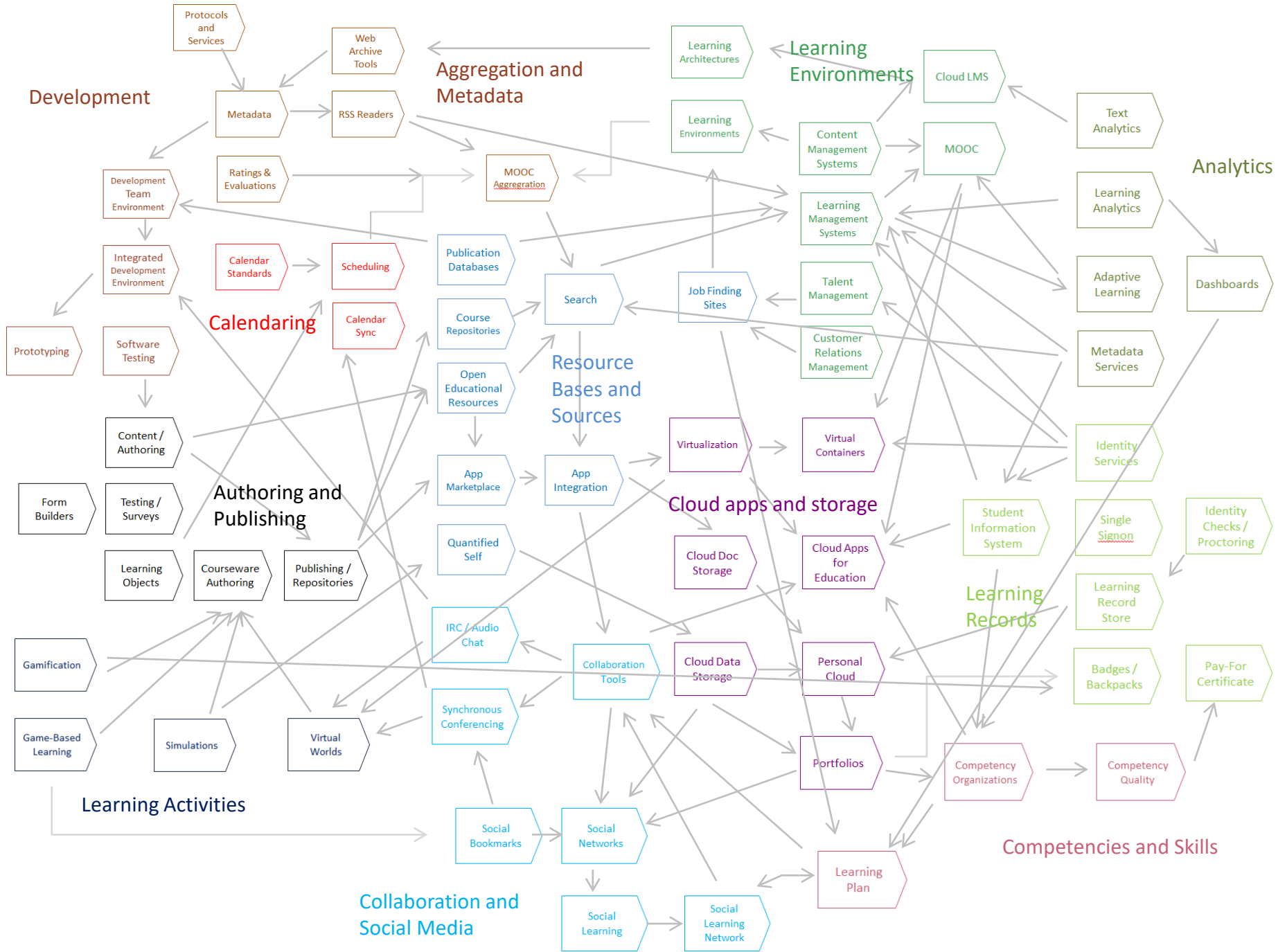
A Roadmap of the Future of Teaching and Learning

Stephen Downes
Online Educa Berlin
December 7, 2017

<http://www.downes.ca/presentation/483>







Authoring and Publishing

Content /
Authoring

Form
Builders

Testing /
Surveys

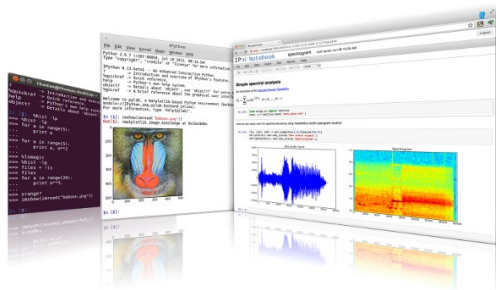
Learning
Objects

Courseware
Authoring

Publishing /
Repositories

Open
Data

Data
Books



iPython is an interactive programming shell for the Python programming language <https://ipython.org/>



The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code... <http://jupyter.org/>

Learning Activities

Gamification

Game-Based Learning

Internet of Things

Simulations

Augmented Reality

Performance Support

Virtual Worlds



<https://www.pcgamesn.com/grand-theft-auto-v/the-best-grand-theft-auto-v-mods>



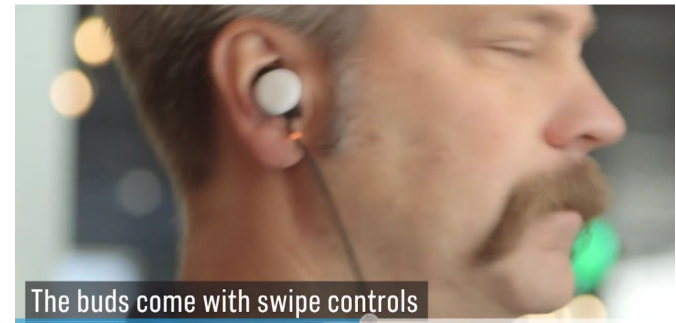
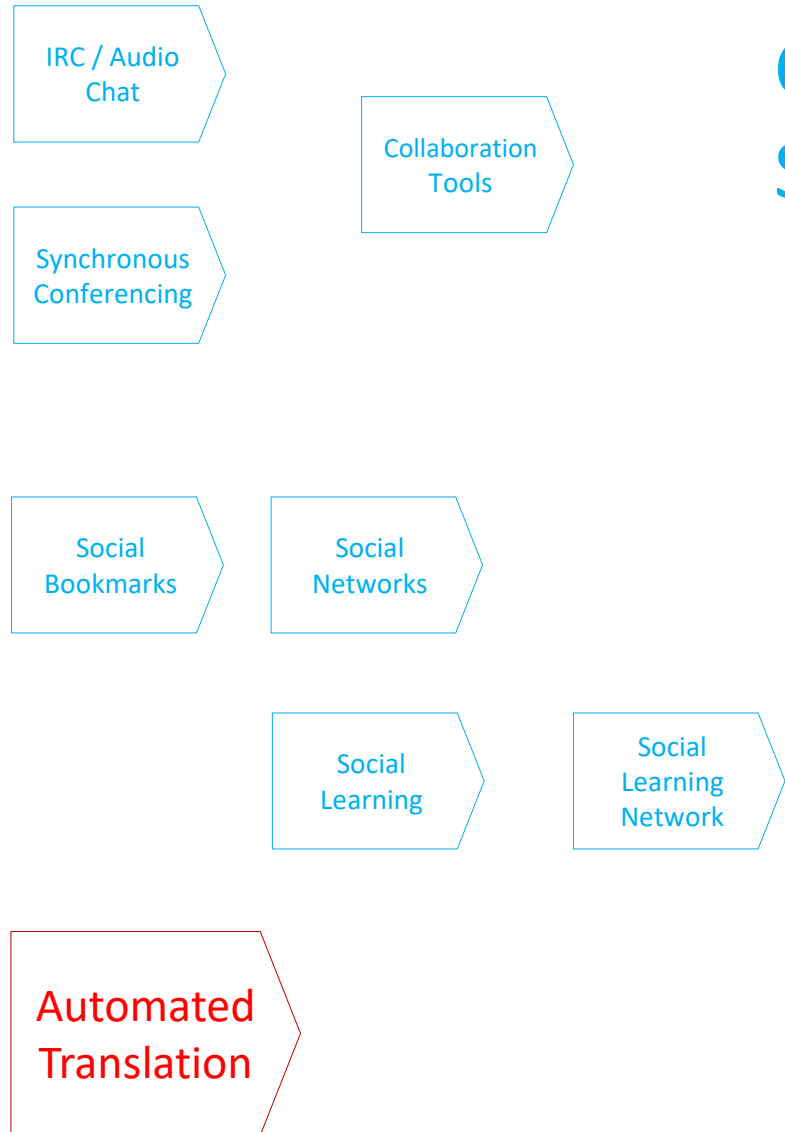
PHOTO COURTESY B

<http://fortune.com/2014/05/27/a-tennis-racquet-that-isnt-just-strung-but-wired/>



MagicBand. It's a bracelet Disney hands out ([story on Gizmodo](#))

Collaboration and Social Media



<https://www.cnbc.com/2017/10/04/google-translation-earbuds-google-pixel-buds-launched.html>

Resource Bases and Sources

Publication Databases

Course Repositories

Open Educational Resources

App Marketplace

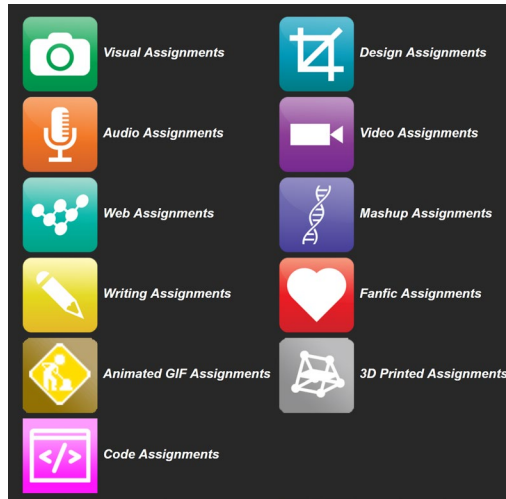
Quantified Self

App Integration

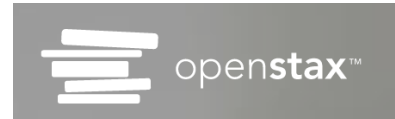
Search

Job Finding Sites

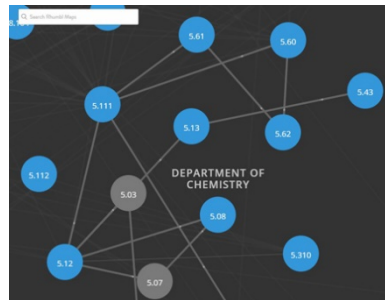
OERs are now widely available through subject-specific libraries with provisions for authoring as well



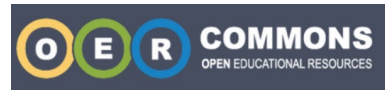
DS106 – assignment bank
<http://assignments.ds106.us/>



<https://openstax.org/>



<https://ocw.mit.edu/>



<https://www.oercommons.org/>

Learning Environments

Learning Architectures

Learning Environments

Content Management Systems

Learning Management Systems

Talent Management

Customer Relations Management

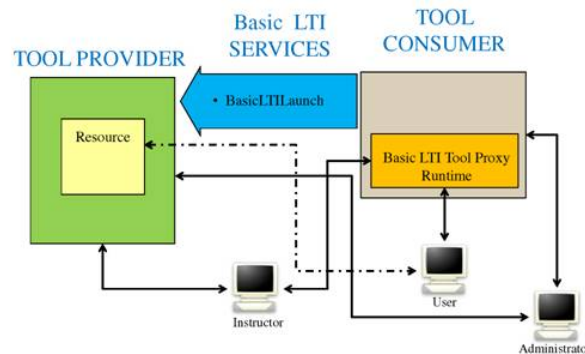
Learning Platforms

Cloud LMS

MOOC

Personal Learning Environments

- LTI Producer – provides features
- LTI Consumer – connects to features



<https://www.imsglobal.org/specs/ltiv1p0/implementation-guide>

Protocols and Services

Web Archive Tools

Metadata

RSS Readers

Ratings & Evaluations

MOOC Aggregation

APIs / JSON

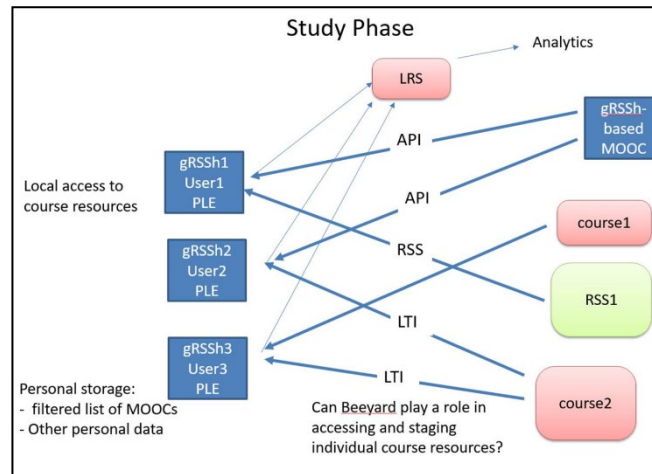
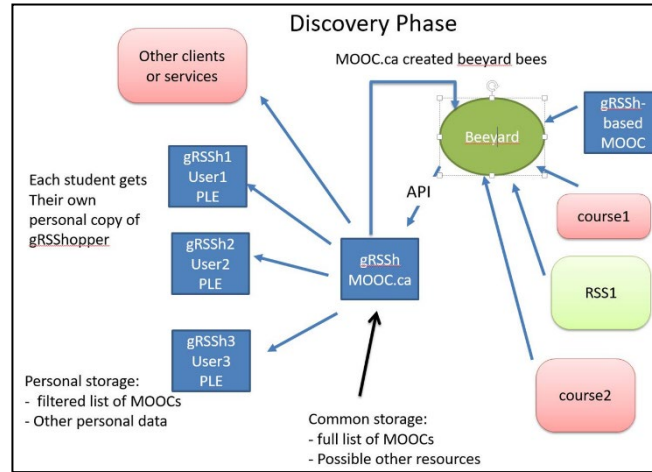
Calendar Standards

Scheduling

Calendar Sync

Calendar

Aggregation and Metadata



Cloud apps and storage

Virtualization

Virtual Containers

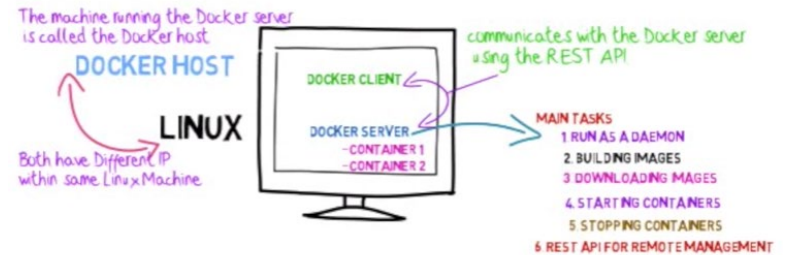
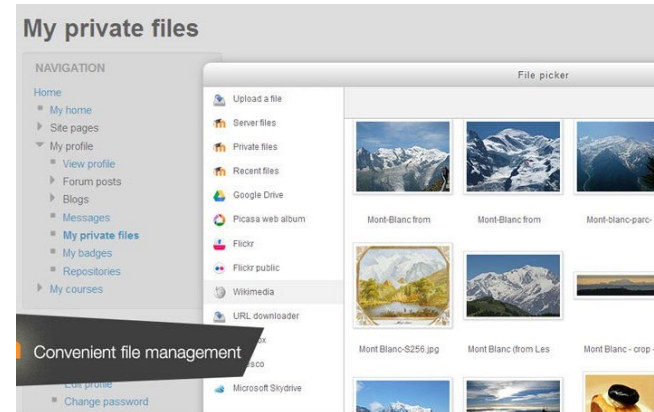
Cloud Doc Storage

Cloud Apps for Education

Cloud Data Storage

Personal Cloud

Portfolios



<http://www.tomsitpro.com/articles/docker-enterprise-hub-orchestration,1-2375.html>

Competencies and Skills

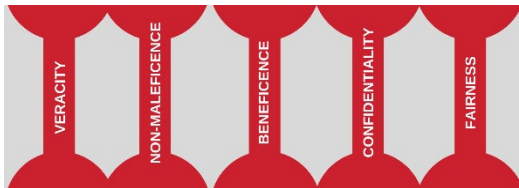
Assessment

Competency Organizations

Competency Quality

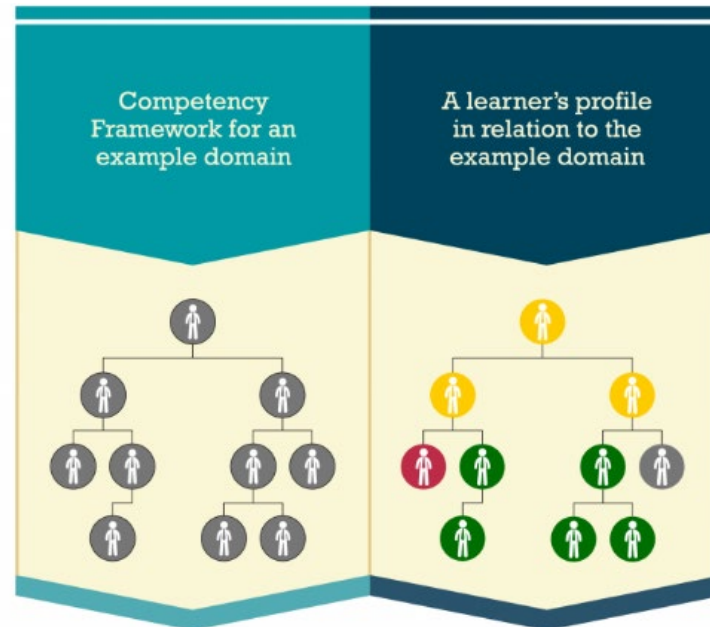
Learning Plan

Automated Assessment



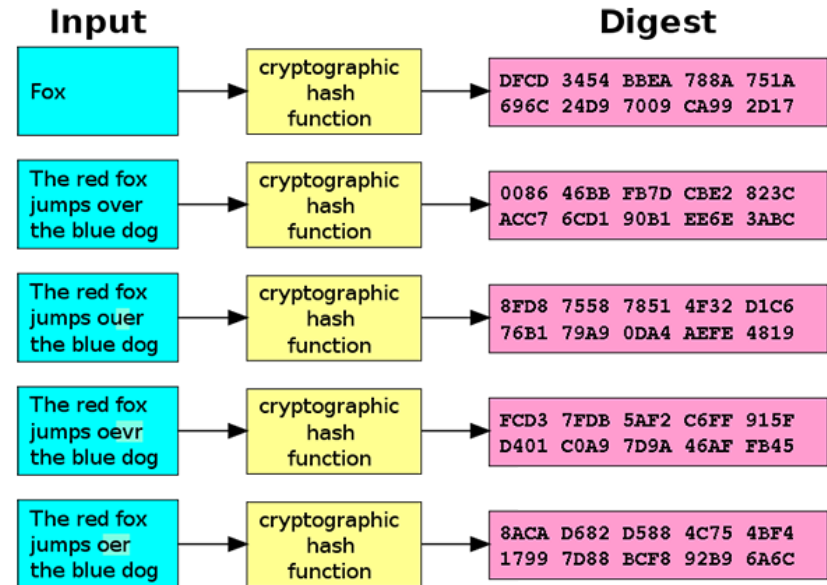
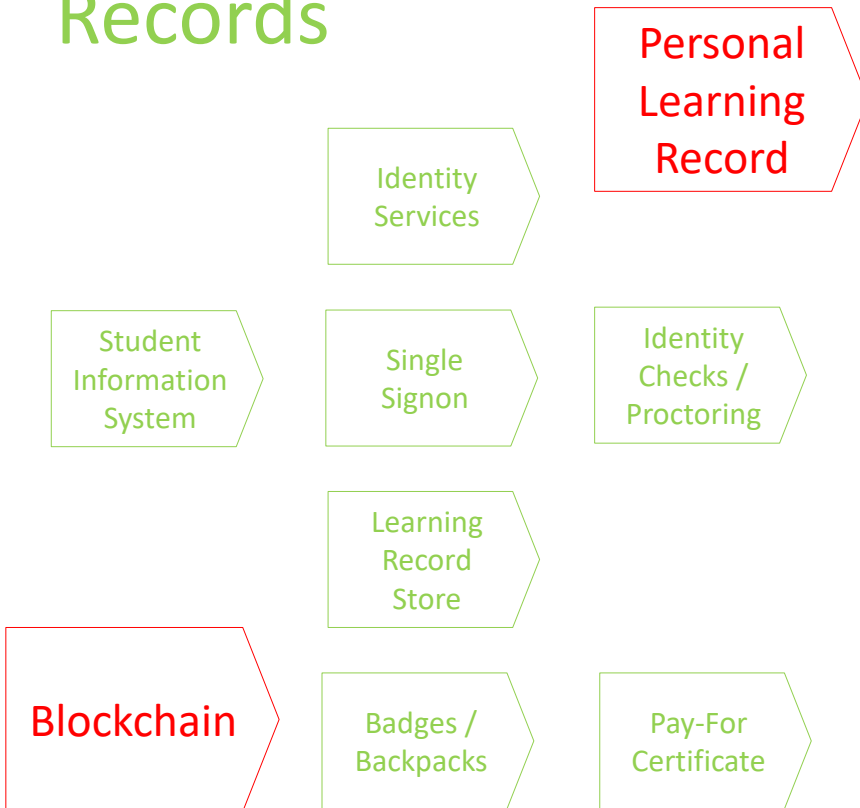
- accurately and honestly measure a student's achievement?
- incentives for *honest* academic behaviour?

<http://pagecentertraining.psu.edu/public-relations-ethics/core-ethical-principles/lesson-2-sample-title/the-pillars-of-public-relations-ethics/>



<https://www.adlnet.gov/introducing-the-next-big-thing-cass/>

Learning Records



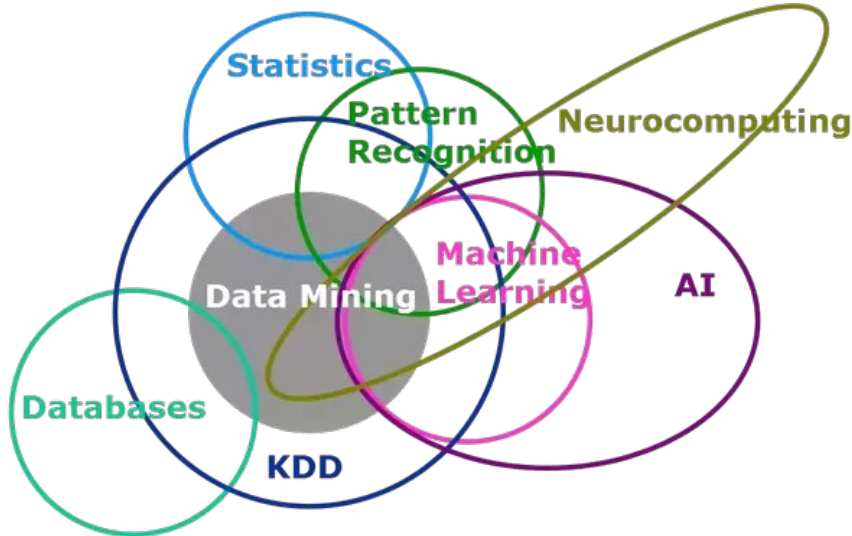
Doug Belshaw:

"If we used the blockchain for Open Badges," he writes, "then we could prove beyond reasonable doubt that the person receiving badge Y is the same person who created evidence X."

<http://dmlcentral.net/blog/doug-belshaw/peering-deep-future-educational-credentialing>

<http://www.downes.ca/search/blockchain>

Analytics



Picture taken from a data mining primer course SAS offered in 1998.

<https://blogs.sas.com/content/subconsciousmusings/2014/08/22/looking-backwards-looking-forwards-sas-data-mining-and-machine-learning/>

Text Analytics

Learning Analytics

Adaptive Learning

Dashboards

Metadata Services

Quantified Self



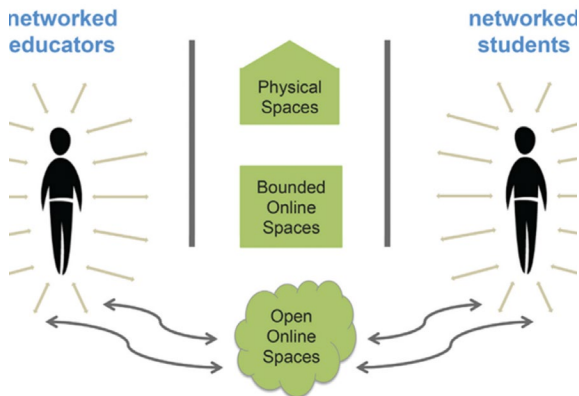
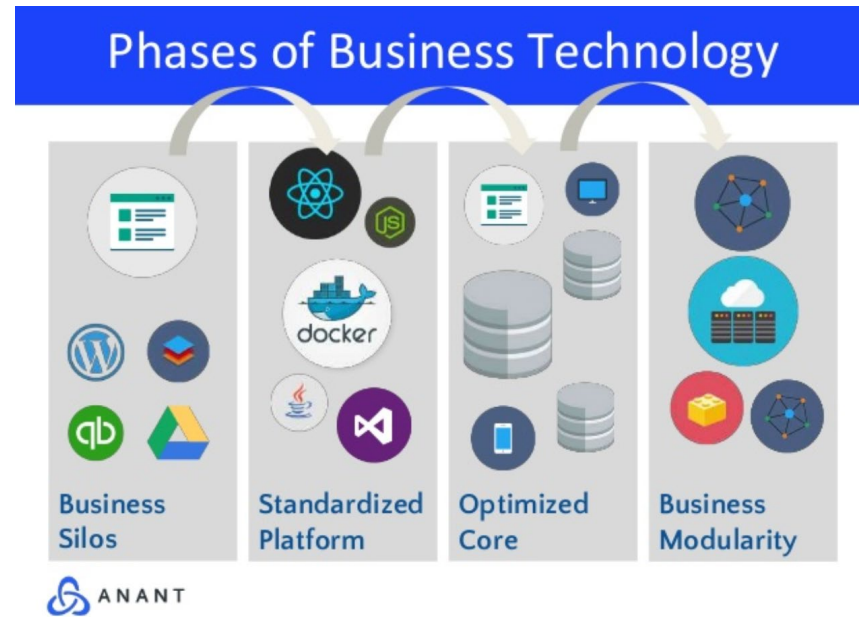
Siemens and Long

<https://er.educause.edu/articles/2011/9/penetrating-the-fog-analytics-in-learning-and-education>

We talk about predictive analytics as though finishing a course is the problem. But I think the real future is in the quantified self

<http://quantifiedself.com/>

Development



1. A Model for Networked Education (Credit: Image by Catherine Cronin, buildinetworked Teacher by Alec Couros. CC BY-SA)

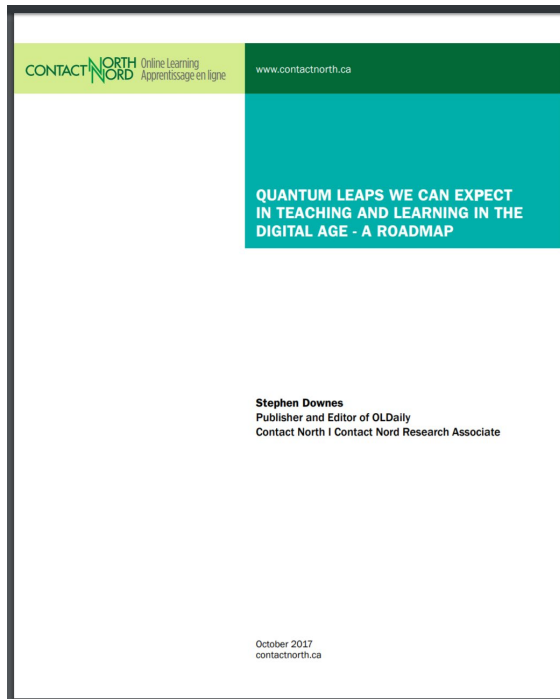
Slack, Airtable, Trello: what makes them good?

<https://pt.slideshare.net/AnantCorp/team-collaboration-slack-airtable-trello-what-makes-them-good-76384318>

Open Pedagogy – Using OER to Change How We Teach – Heather Ross

<https://words.usask.ca/gmcte/2016/09/26/open-pedagogy-using-oer-to-change-how-we-teach/>

The Report...



You can download this report from:
<http://bit.ly/quantum-leaps>

The report talks a lot about what will change (and some about what will not_ and also about *how* things change

Add your comments

<http://bit.ly/quantum-edit>



<http://www.downes.ca>