BCNET

Shared IT Services for Higher Education & Research

Conference 2017

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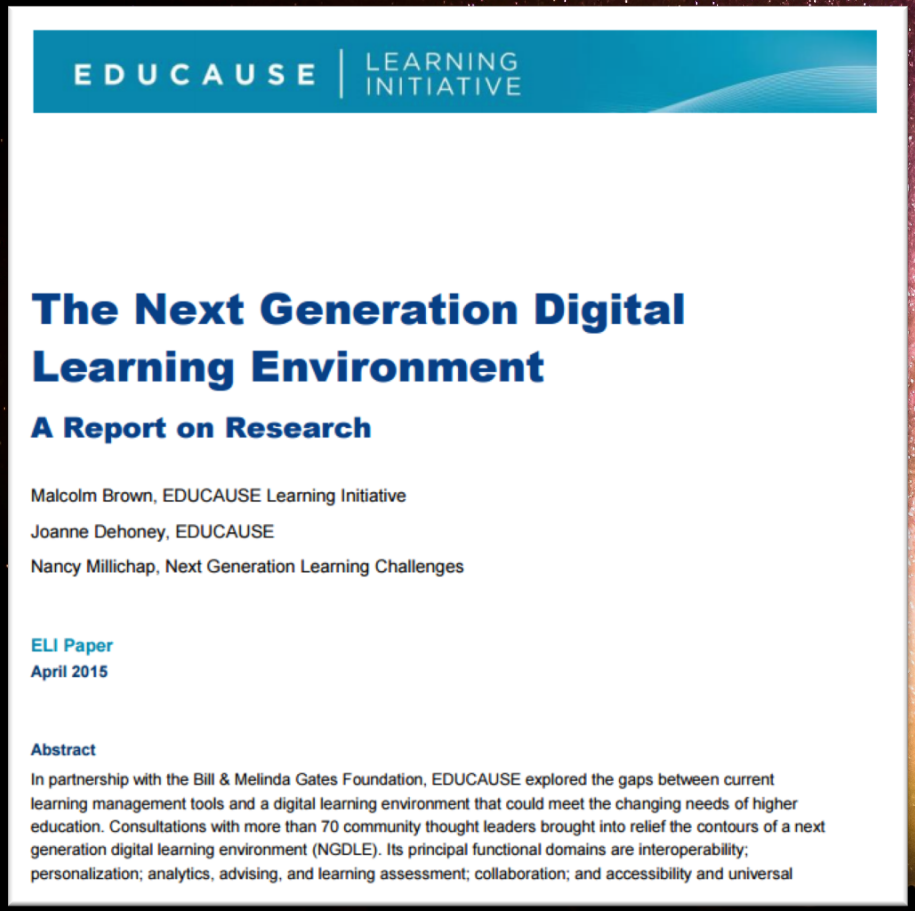
Next Generation Digital Learning Environments (NGDLE)

From Monolithic to Disaggregation

WENGER



EDUCAUSE | LEARNING INITIATIVE

The Next Generation Digital Learning Environment

A Report on Research

Malcolm Brown, EDUCAUSE Learning Initiative

Joanne Dehoney, EDUCAUSE

Nancy Millichap, Next Generation Learning Challenges

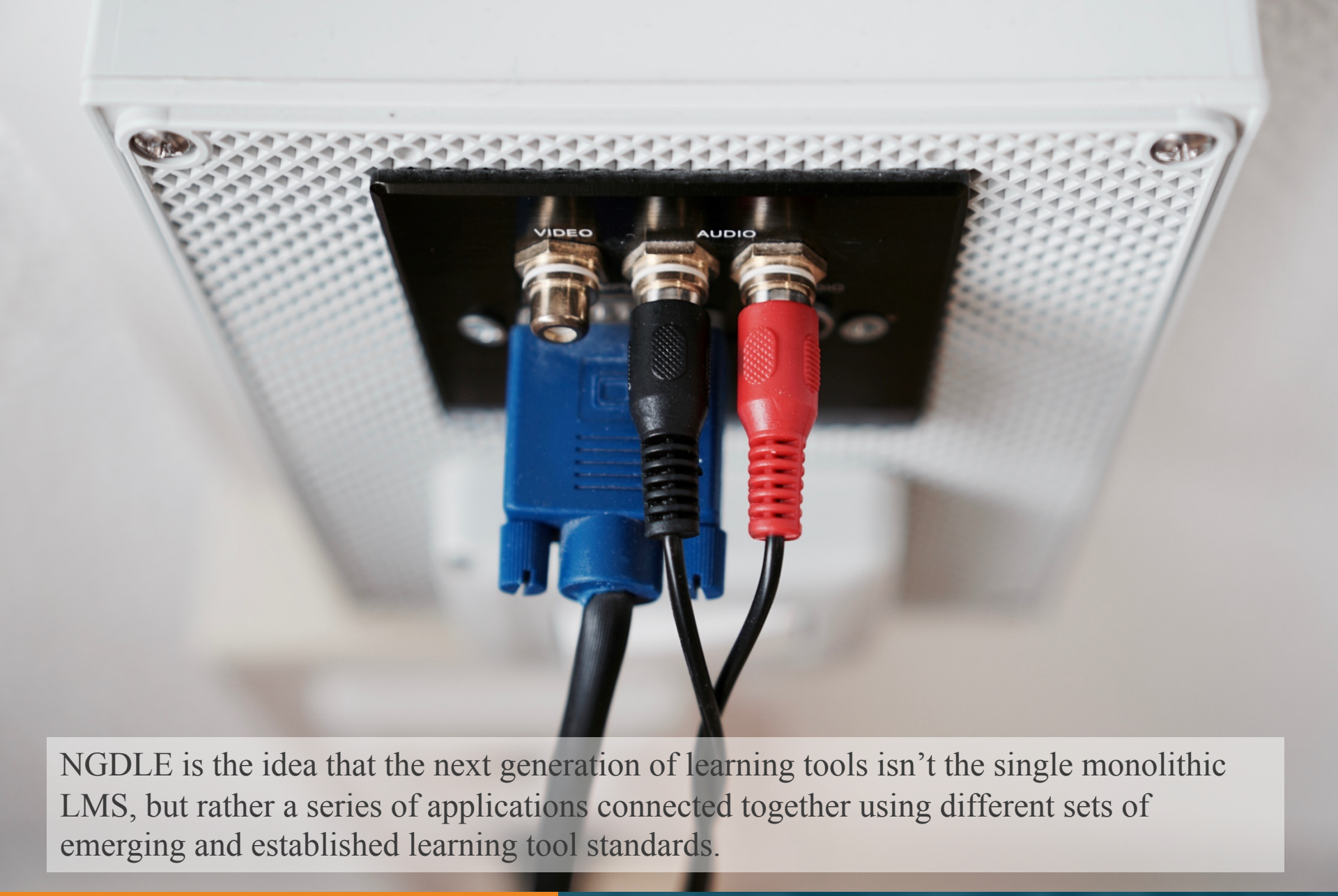
ELI Paper
April 2015

Abstract

In partnership with the Bill & Melinda Gates Foundation, EDUCAUSE explored the gaps between current learning management tools and a digital learning environment that could meet the changing needs of higher education. Consultations with more than 70 community thought leaders brought into relief the contours of a next generation digital learning environment (NGDLE). Its principal functional domains are interoperability; personalization; analytics, advising, and learning assessment; collaboration; and accessibility and universal

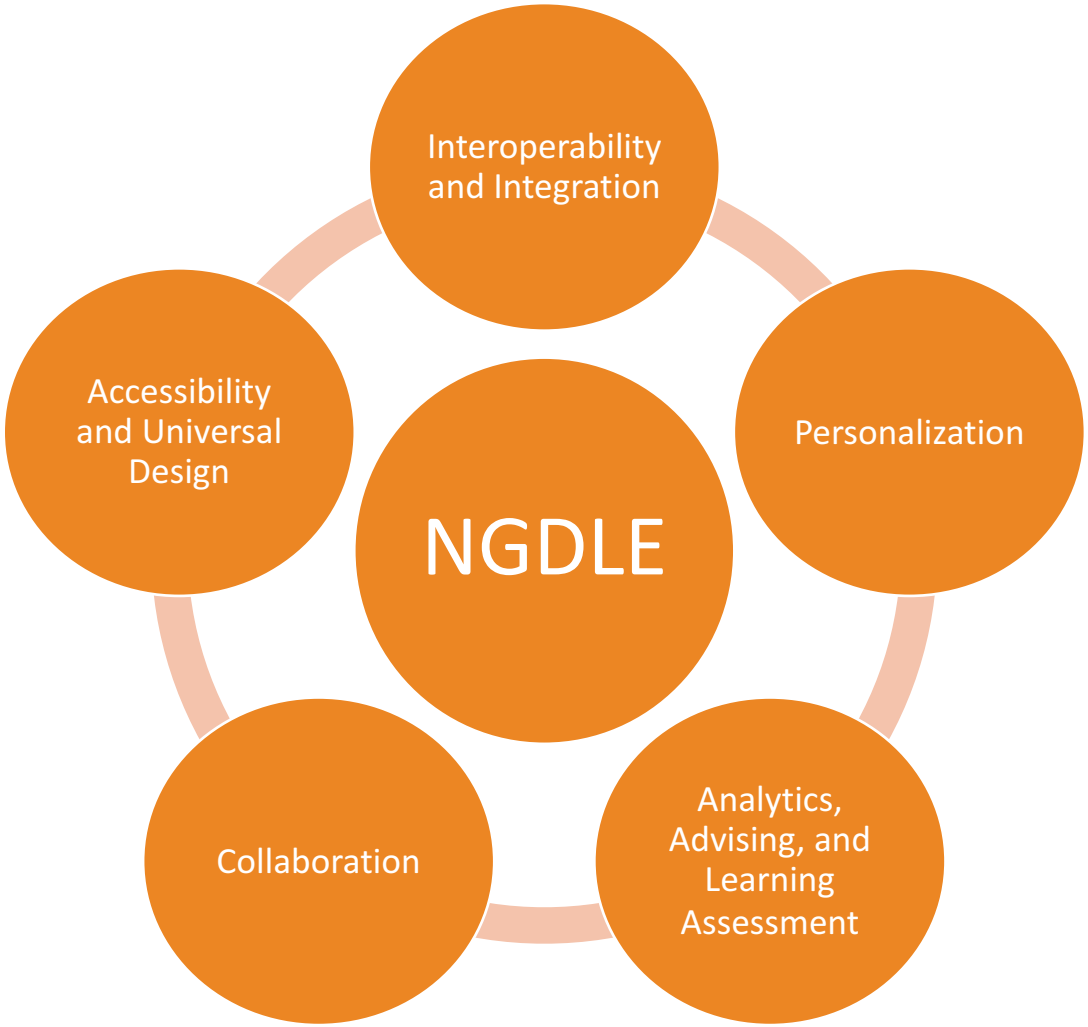
"What is clear is that the LMS has been highly successful in enabling the **administration** of learning but less so in **enabling** learning itself. "

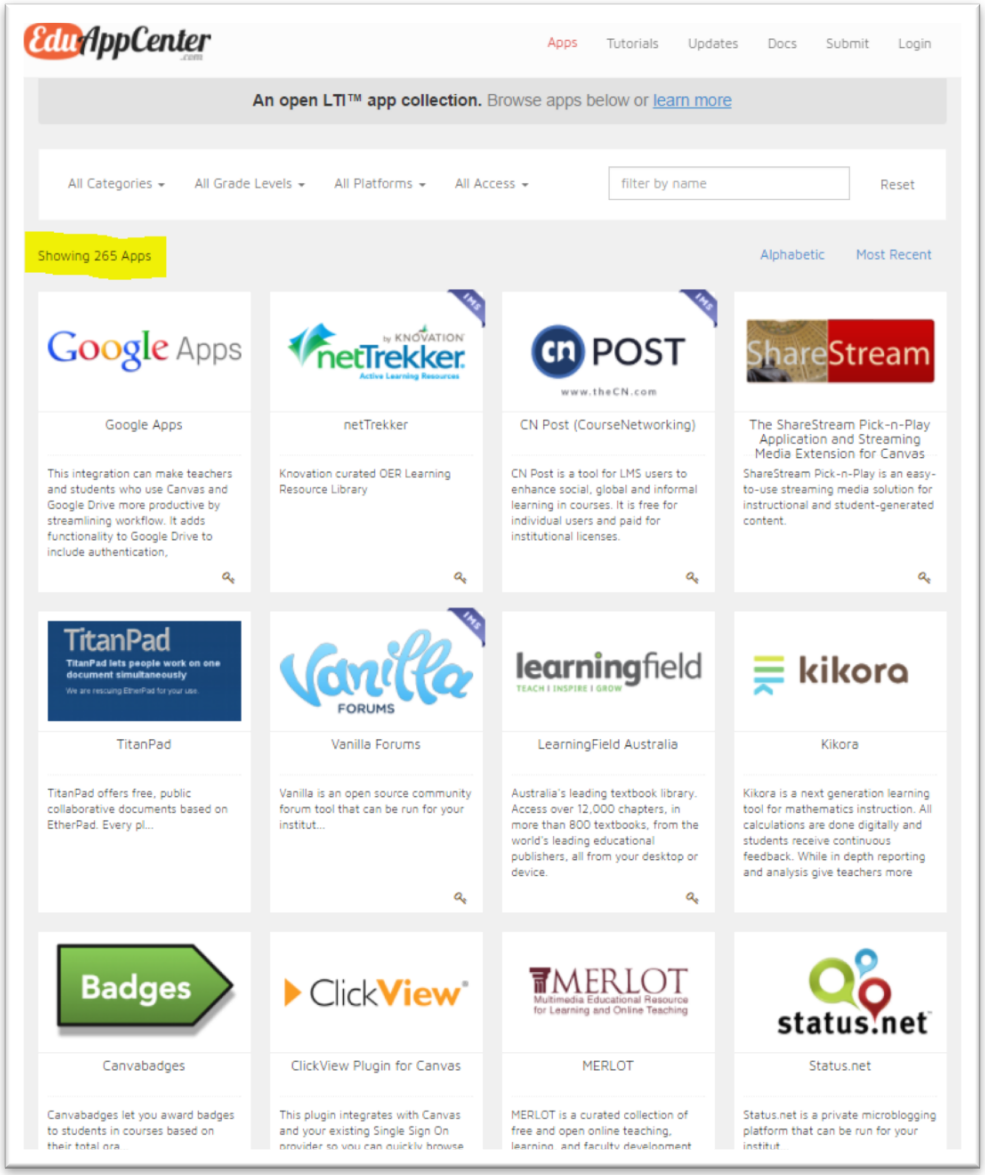
https://net.educause.edu/ir/library/pdf/eli3035.pdf

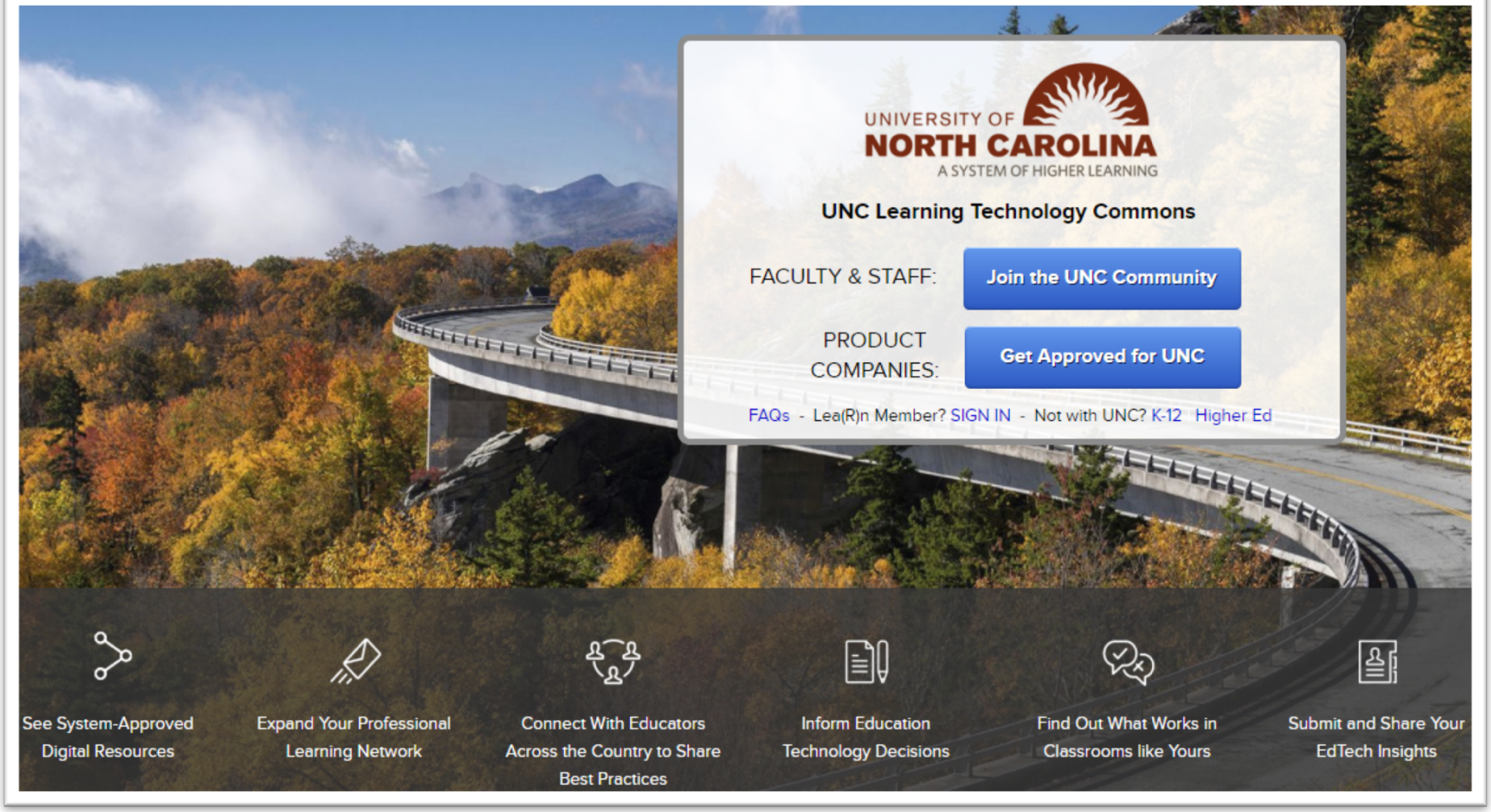


NGDLE is the idea that the next generation of learning tools isn't the single monolithic LMS, but rather a series of applications connected together using different sets of emerging and established learning tool standards.

NGDLE Core Functionality




EduAppCenter
Apps
Tutorials
Updates
Docs
Submit
Login
An open LTI™ app collection. Browse apps below or learn more
All Categories
All Grade Levels
All Platforms
All Access
filter by name
Reset
Showing 265 Apps
Alphabetic
Most Recent
Google Apps
Google Apps
This integration can make teachers and students who use Canvas and Google Drive more productive by streamlining workflow. It adds functionality to Google Drive to include authentication,
netTrekker
netTrekker
Knovation curated OER Learning Resource Library
CN POST
www.theCN.com
CN Post (CourseNetworking)
CN Post is a tool for LMS users to enhance social, global and informal learning in courses. It is free for individual users and paid for institutional licenses.
ShareStream
The ShareStream Pick-n-Play Application and Streaming Media Extension for Canvas
ShareStream Pick-n-Play is an easy-to-use streaming media solution for instructional and student-generated content.
TitanPad
TitanPad lets people work on one document simultaneously
TitanPad
TitanPad offers free, public collaborative documents based on EtherPad. Every pl...
Vanilla
FORUMS
Vanilla Forums
Vanilla is an open source community forum tool that can be run for your institut...
learningfield
TEACH | INSPIRE | GROW
LearningField Australia
Australia's leading textbook library. Access over 12,000 chapters, in more than 800 textbooks, from the world's leading educational publishers, all from your desktop or device.
kikora
Kikora
Kikora is a next generation learning tool for mathematics instruction. All calculations are done digitally and students receive continuous feedback. While in depth reporting and analysis give teachers more
Badges
Canvabadges
Canvabadges let you award badges to students in courses based on
ClickView
ClickView Plugin for Canvas
This plugin integrates with Canvas and your existing Single Sign On
MERLOT
Multimedia Educational Resource for Learning and Online Teaching
MERLOT
MERLOT is a curated collection of free and open online teaching,
status.net
Status.net
Status.net is a private microblogging platform that can be run for your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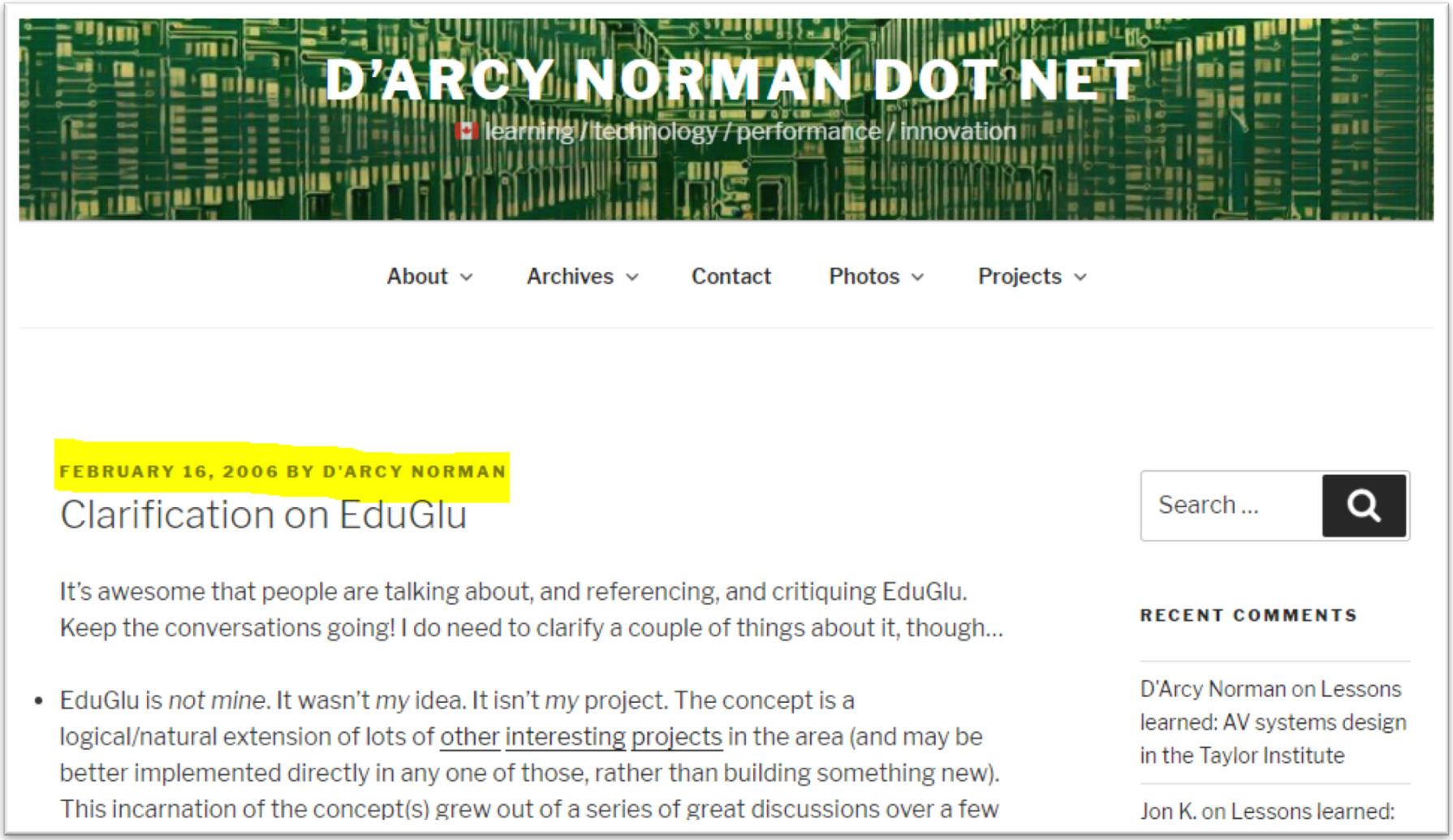
NORTH CAROLINA
A SYSTEM OF HIGHER LEARNING
UNC Learning Technology Commons
FACULTY & STAFF:
Join the UNC Community
PRODUCT COMPANIES:
Get Approved for UNC
FAQs - Lea(R)n Member? SIGN IN - Not with UNC? K-12 Higher Ed
See System-Approved Digital Resources
Expand Your Professional Learning Network
Connect With Educators Across the Country to Share Best Practices
Inform Education Technology Decisions
Find Out What Works in Classrooms like Yours
Submit and Share Your EdTech Insights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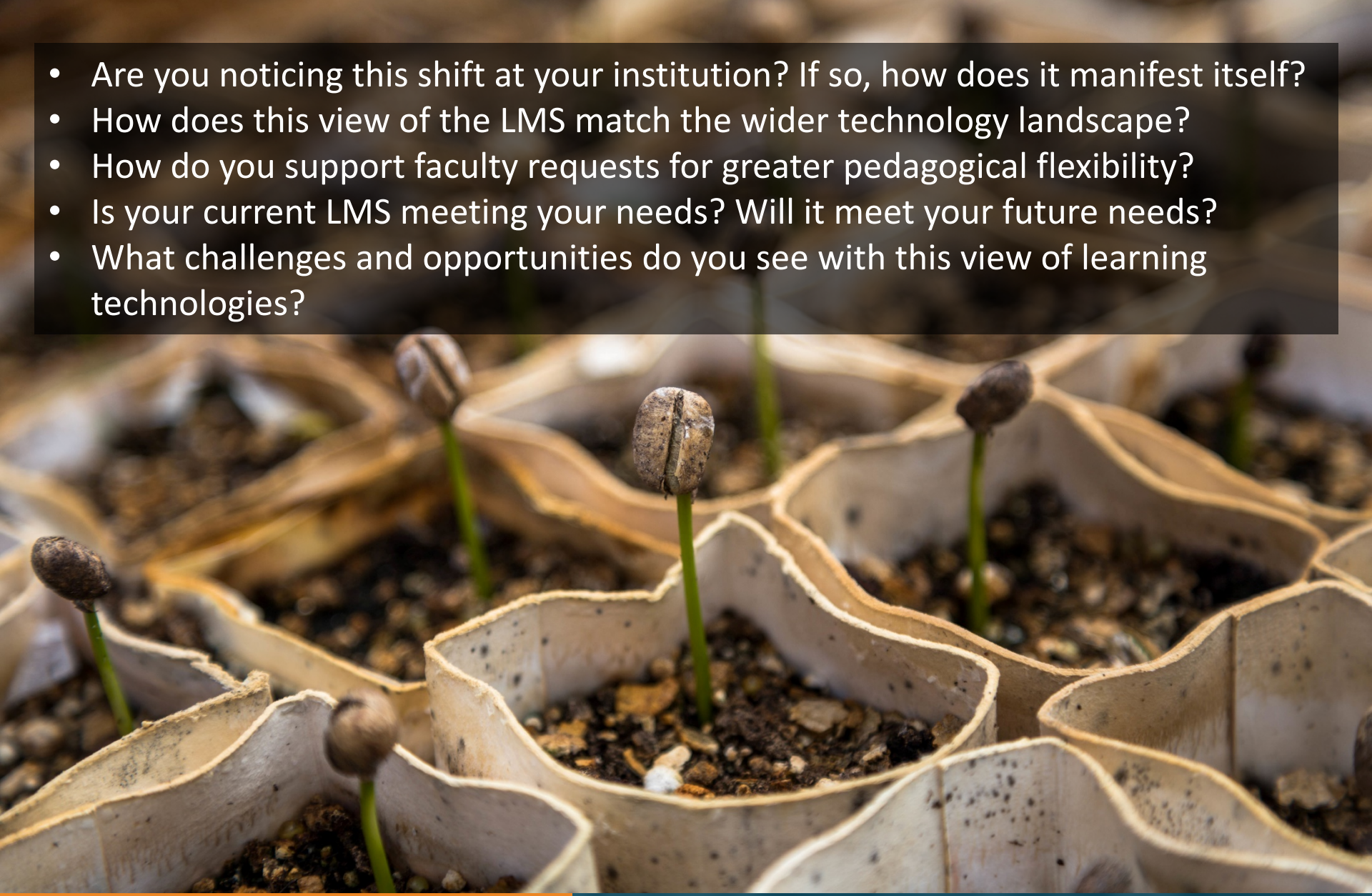
FEBRUARY 16, 2006 BY D'ARCY NORMAN
Clarification on EduGlu
It's awesome that people are talking about, and referencing, and critiquing EduGlu. Keep the conversations going! I do need to clarify a couple of things about it, though...
EduGlu is *not mine*. It wasn't *my* idea. It isn't *my* project. The concept is a logical/natural extension of lots of other interesting projects in the area (and may be better implemented directly in any one of those, rather than building something new). This incarnation of the concept(s) grew out of a series of great discussions over a few
Search ...
RECENT COMMENTS
D'Arcy Norman on Lessons learned: AV systems design in the Taylor Institute
Jon K. on Lessons learned:



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- How does this view of the LMS match the wider technology landscape?
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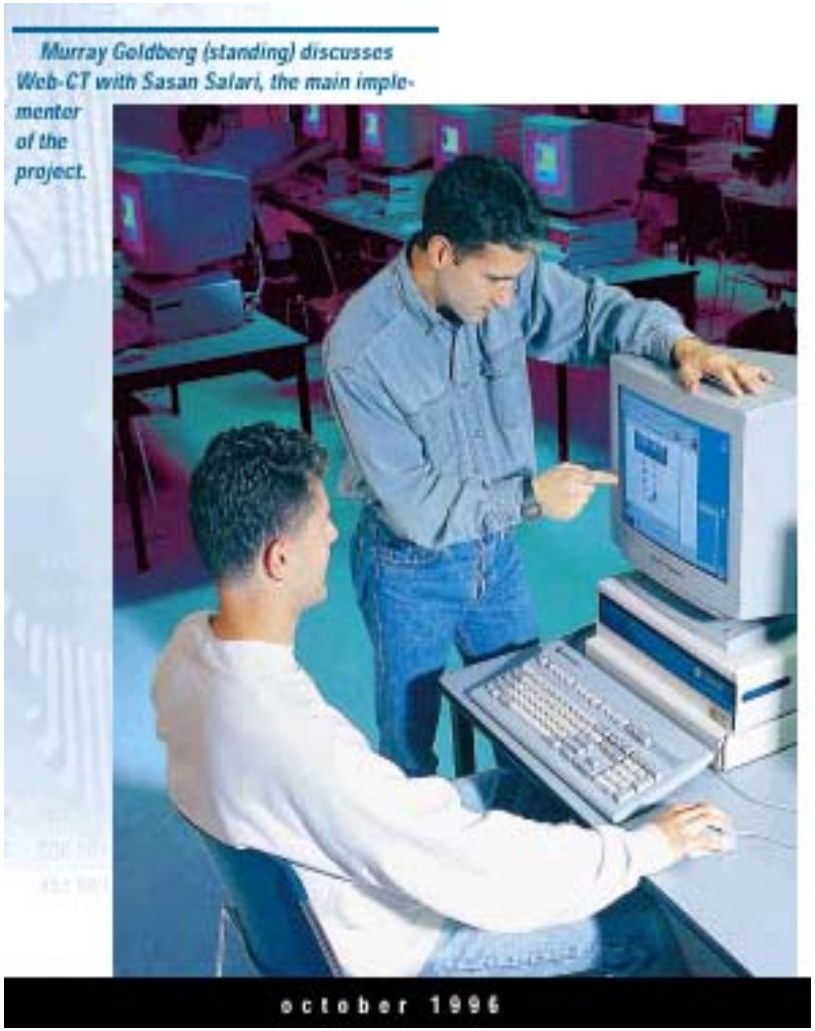
UBC

1996



Murray Goldberg (standing) discusses Web-CT with Sasan Salari, the main implementor of the project.

october 1996

WORLD WIDE WEB COURSE TOOLS

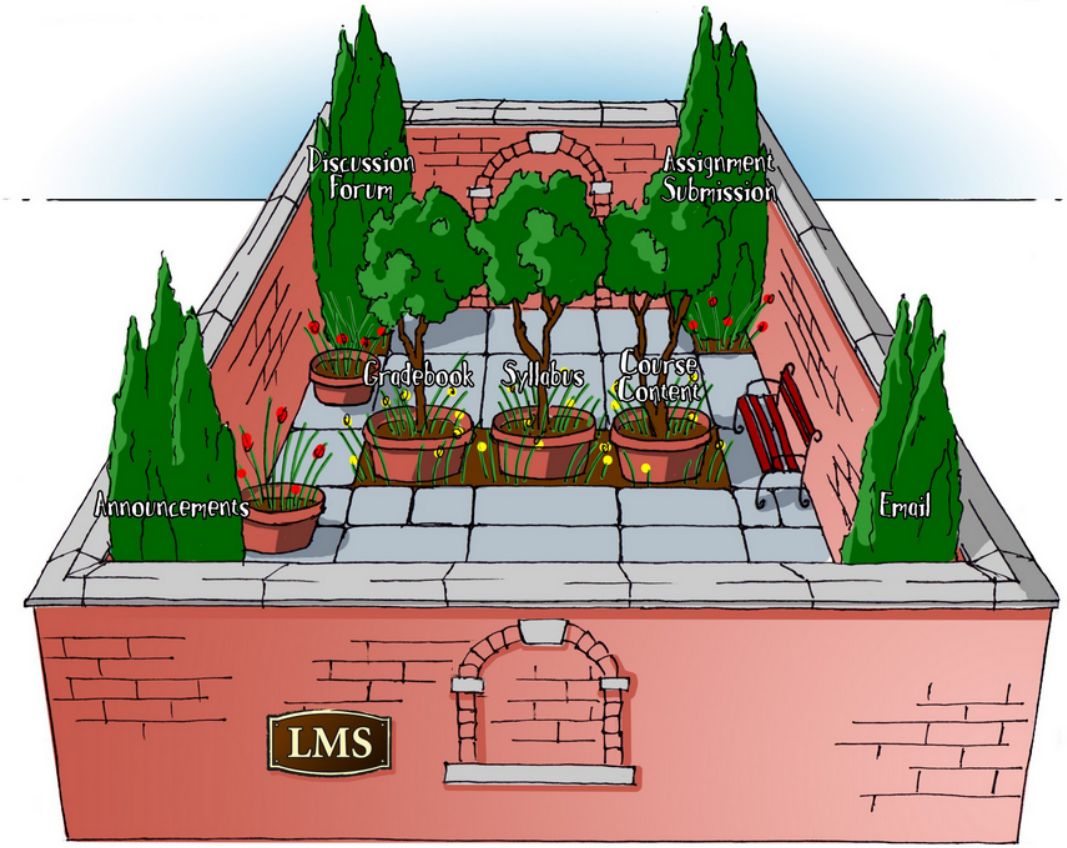
webct

WebCT is a tool that facilitates the creation of sophisticated World Wide Web-based educational environments by non-technical users. It can be used to create entire on-line courses, or to simply publish materials that supplement existing courses.

WebCT not only produces courses for the WWW, but also uses WWW browsers as the interface for the course-building environment. Aside from facilitating the organization of course material on the web, WebCT also provides a wide variety of tools and features that can be added to a course. Examples of tools include a conferencing system, on-line chat, student progress tracking, group project organization, student self-evaluation, grade maintenance and distribution, access control, navigation tools, auto-marked quizzes, electronic mail, automatic index generation, course calendar, student homepages, course content searches and much more.

WebCT is an easy-to-use environment for creating sophisticated WWW-based courses that are otherwise beyond the ability of the non computer programmer.

- More About WebCT
- Documentation
- Try Out WebCT Now!
- How To Get WebCT
- Related Papers
- Related Services
- Year 2000 and WebCT
- Contact Us



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MINDWIRES

http://mfeldstein.com/opening-lms-walled-garden/

Fall 2013: Significant Performance issues

2014-15: ECAR Survey & Consultation

What faculty said:

- 50% agree that they would be more effective if they were better skilled at integrating the LMS in their courses
- 80% use the LMS
- 44% believe it is critical to teaching
- 48% believe it enhances student learning

But…

18% satisfied overall

15% satisfied with ease of use

on par with Windows 1998 usability

the ham handed interface is like trying to eat dinner while wearing hockey goalie equipment.

Vision: Ecosystem

An Ecosystem that empowers faculty and students to achieve their teaching and learning goals by providing robust, dynamic and pedagogically sound tools and services that are time-efficient to learn and use.

Learning Ecosystem

Current use is widespread (about 200 million log-ins from September through April)

Top tools used in LMS:

- Content
- Announcements
- Communication
- Discussions
- Assessment

Learning Technology Functional Map

CONTENT

Content Authoring

- Adobe Creative Suite
- Articulate Studio
- Articulate Storyline 2
- Audacity
- Camtasia (*)
- Final Cut Pro
- Hot Potatoes
- Jing
- Keynote
- Lectora
- Lightboard (*)
- Livescribe
- MediaSite (*)
- Microsoft Excel
- Microsoft PowerPoint
- Office Mix
- One button Studio (*)
- Panopto
- Prezi
- Snagit
- Timeline JS
- VideoScribe (*)
- Zoomify

Content Delivery

- Arts File Share
- Collaborative Learning (*) Annotation System (CLAS)
- **Connect (Content Management) (*)**
- Document Cameras
- DropBox
- Drupal (*)
- Dspace
- **edX (*)**
- Entrada
- Evernote
- **Exam Prep Database (*)**
- Explain Everything
- Github
- Google Docs
- HTML 5 Flash Cards
- iBooks
- **Kaltura (*)**
- LearnDash (WordPress) (*)
- **Library Online Course Reserves (LOCR) (*)**
- Lynx
- Modern Digital Image Database (MDID)
- Moodle (*)
- Omeka
- Owncloud
- Perusall
- **Piazza (*)**
- Plone
- Podcasts
- Reflector
- **Respondus Studymate (*)**
- SourceTree
- SugarSync
- **UBC Blogs (WordPress) (*)**
- UBC iTunes (*)
- UBC Wiki (*)
- UBC YouTube (*)
- Vimeo
- Vitalsource
- WebAssign
- Wikipedia
- Wikis
- Workspace (*)
- Zimbra

Publisher

- Aplia
- Cengage iLrn (*)
- Cengage (PIC) (*)
- Macmillan (PIC) (*)
- McGraw-Hill (PIC) (*)
- Pearson (PIC) (*)
- Sapling Learning (PIC) (*)
- Wiley (PIC) (*)

Simulations

- Google Cardboard
- Layar
- Mannequin Simulations
- Motion Control
- NeoReality
- Phet Simulations
- Praxis
- VCER

Portfolios

- Chalk and Wire
- **Connect (ePortfolio) (*)**
- Pep
- **UBC Blogs (WordPress) (*)**

ASSESSMENT

Assessment

- Adaptive Comparative Judgement (ACJ) (*)
- Auto Multiple Choice (AMC)
- Cengage iLrn (*)
- **Connect (Tests) (*)**
- **Connect (Assignments) (*)**
- ExamSoft
- **Form Builder (*)**
- LearnDash (WordPress) (*)
- Mechanical TA
- Moodle (*)
- Open Badges UBC (*)
- Pearson MyTest
- **Respondus Quiz (*)**
- Scantron
- Turnitin (*)
- WebAssign
- **Webwork (*)**

Peer Based

- Calibrated Peer Review (CPR) (*)
- Crowdmark
- **iPeer (*)**
- PeerScholar
- PeerWise (*)

INTERACTIONS

Discussion

- **Bb Collaborate Voice Tools (*)**
- **Connect (Discussions) (*)**
- **Piazza (*)**
- **PulsePress (*)**
- Slack
- **UBC Blogs (WordPress) (*)**

Survey Tool

- **Connect (Enterprise Surveys) (*)**
- **Connect (Surveys) (*)**
- **FluidSurveys (*)**
- Gravity Forms (WordPress)
- LimeSurvey
- Qualtrics
- Survey Monkey

Social Media

- Facebook
- Figure 1
- Google+
- LinkedIn
- Twitter

Response System

- **iClicker (*)**
- Kahoot!
- Learning Catalytics
- Poll Everywhere
- REEF polling (*)
- Top Hat

Video Conference

- Adobe Connect
- **Bb Collaborate Web Conf. (*)**
- Blueleaves (*)
- Google Hangouts
- Lifesize
- Skype
- Cisco TelePresence (MediT)
- WebEx

Bold = Integrated Tool
(*) = Supported by LT Hub

COURSE MANAGEMENT & EVALUATION

Analytics

- Arts Datamart
- **Bb Outcomes Assessment (*)**
- **Connect (Performance Center) (*)**
- Google Analytics
- IBM SPSS
- JMP
- Microsoft Excel
- **SEoT Datamart (*)**
- Stata
- Tableau
- xAPI / Learning Record Store (LRS)

Course Evaluation

- **Bb Outcomes Assessment (*)**
- **CourseEval (*)**
- **SEoT Datamart (*)**
- **TeachEval (*)**

Course Admin

- **Connect (Grade Center) (*)**
- Doodle
- Google Calendar
- Grade Grinder
- LearnDash (WordPress) (*)
- Moodle (*)
- One45
- Remark
- Turnitin (*)
- **UBC Blogs (WordPress) (*)**
- WebAssign

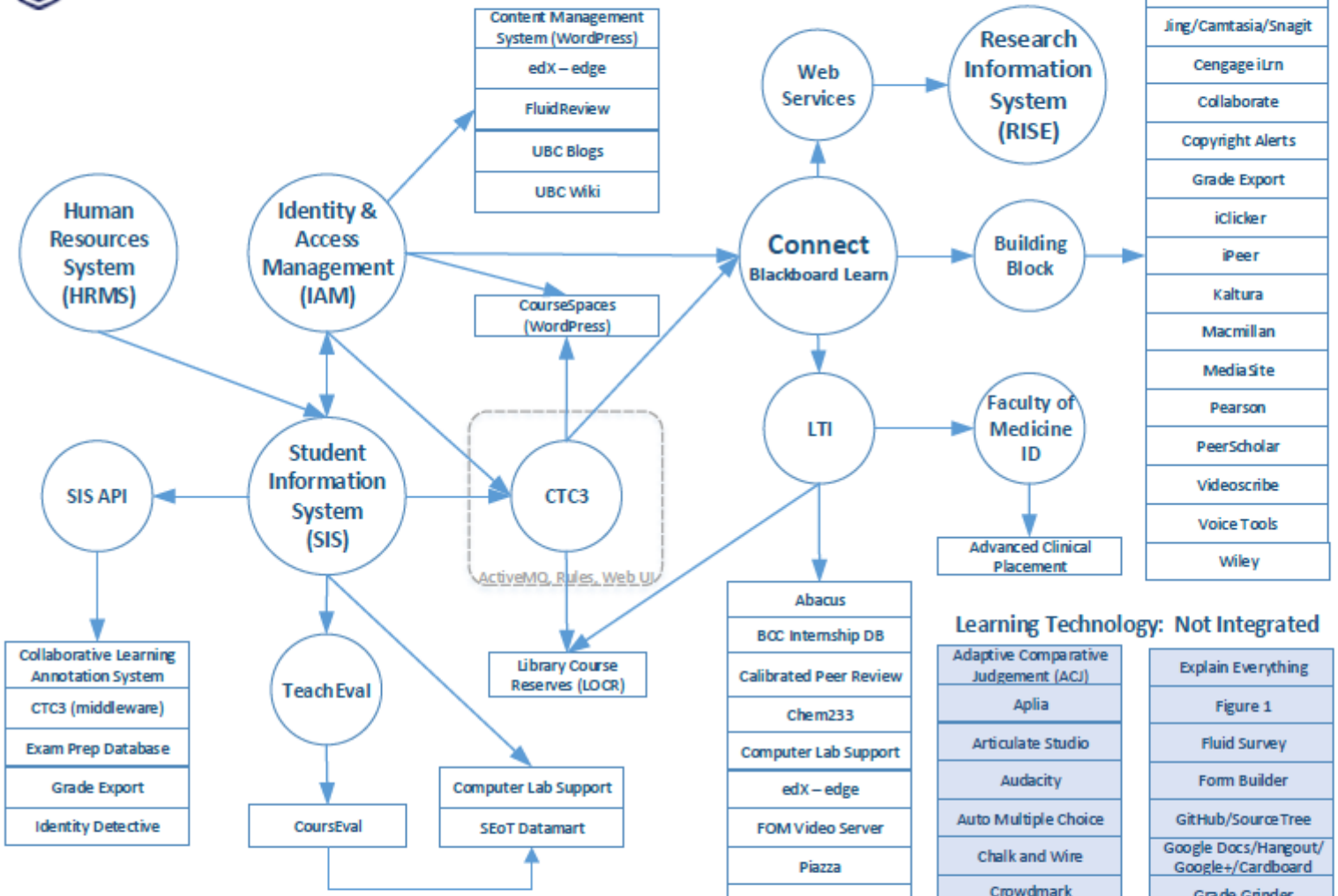
Other

- 3D printing
- Entrada
- Google Earth
- iStudiez Pro
- **OSCAR**
- **SCORM (*)**

April 5, 2016

Learning Technology Ecosystem: Current State

March 2016



Learning Technology: Not Integrated

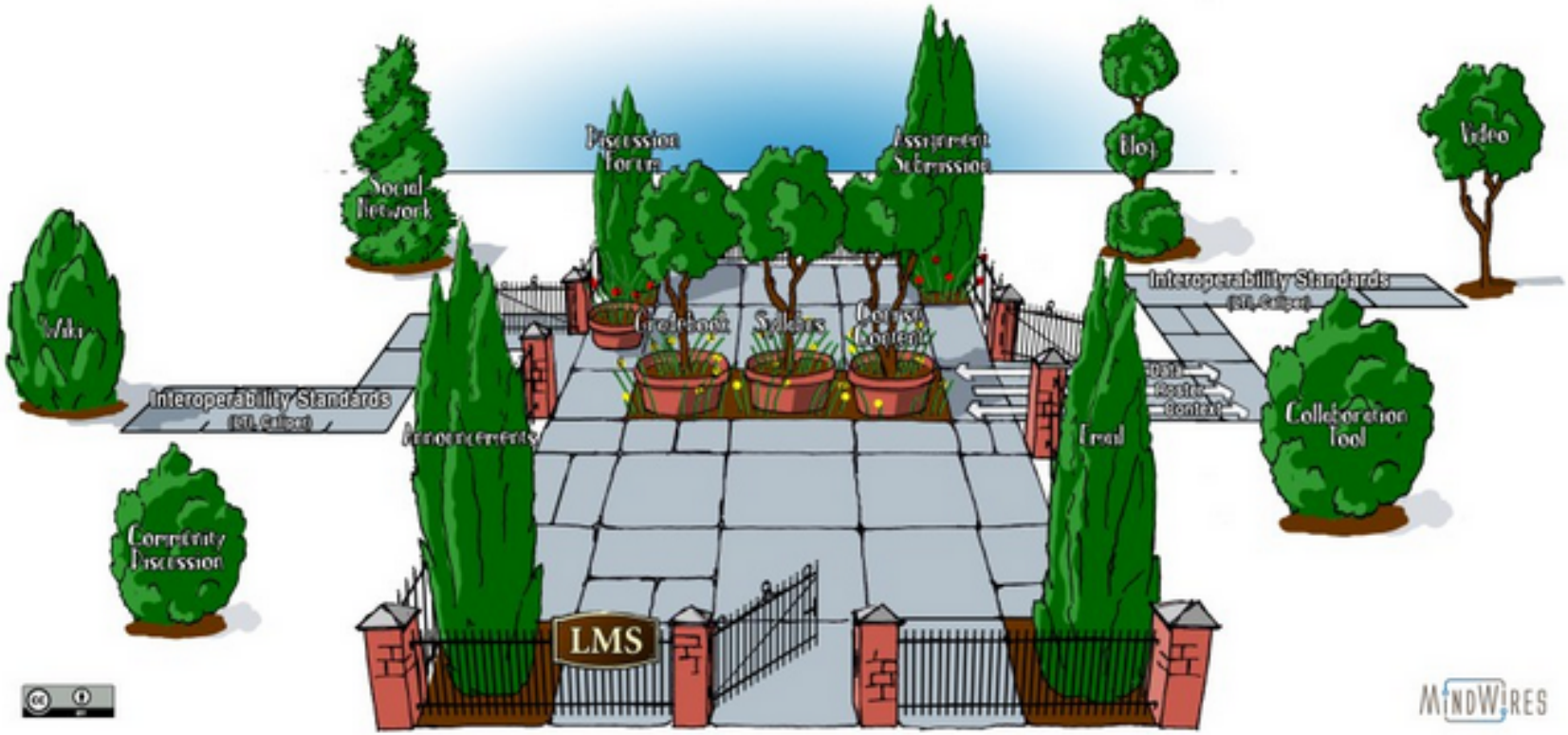
Adaptive Comparative Judgement (ACJ)	Explain Everything	
Aplia	Figure 1	
Articulate Studio	Fluid Survey	
Audacity	Form Builder	
Auto Multiple Choice	GitHub/SourceTree	
Chalk and Wire	Google Docs/Hangout/ Google+/Cardboard	
Crowdmark	Grade Grinder	
Drupal	Hot Potatoes	
dSpace (cIRcle)	HTML 5 Flash Cards	
Entrada	iStudiez Pro	
ExamSoft	Kahoot!	
	Layar	

Not Integrated (cont'd)

- Learning Catalytics
- Lectora
- Lime Survey
- Livescribe
- Lyryx
- Mannequin Sims
- Mechanical TA
- Moodle
- Motion Control
- NeoReality
- Omeka
- One45
- Open Badges UBC
- Owncloud/Dropbox/ SugarSync
- Panopto
- PeerWise
- Perusall
- PEP
- Phet Simulations
- Plone
- Poll Everywhere
- Praxis
- Respondus
- SurveyMonkey
- TopHat
- Turnitin
- VCER
- WebAssign
- Wistia/YouTube

Productivity Tools as Learning Tools (as described by faculty)

- Adobe Creative Suite
- BlueJeans
- Doodle
- Evernote
- Final Cut Pro
- iBooks
- KeyNote
- Lifesize
- MS Excel
- MS Powerpoint
- Office Mix
- Skype
- WebEx



http://mfeldstein.com/opening-lms-walled-garden/

Future state: core functionality

- Includes:
  - Ability to store and provision access to content
  - Tools for communication within a course, between instructor and students and between students
  - Tools for assessment and grade management
  - Framework for integrating 3rd party tools

How do we ensure that the LTE is agile, supportive of teaching innovation and still ensure students have a cohesive experience?

UNIVERSITY
OF THE FRASER VALLEY

At UFV we use Blackboard with several added tools

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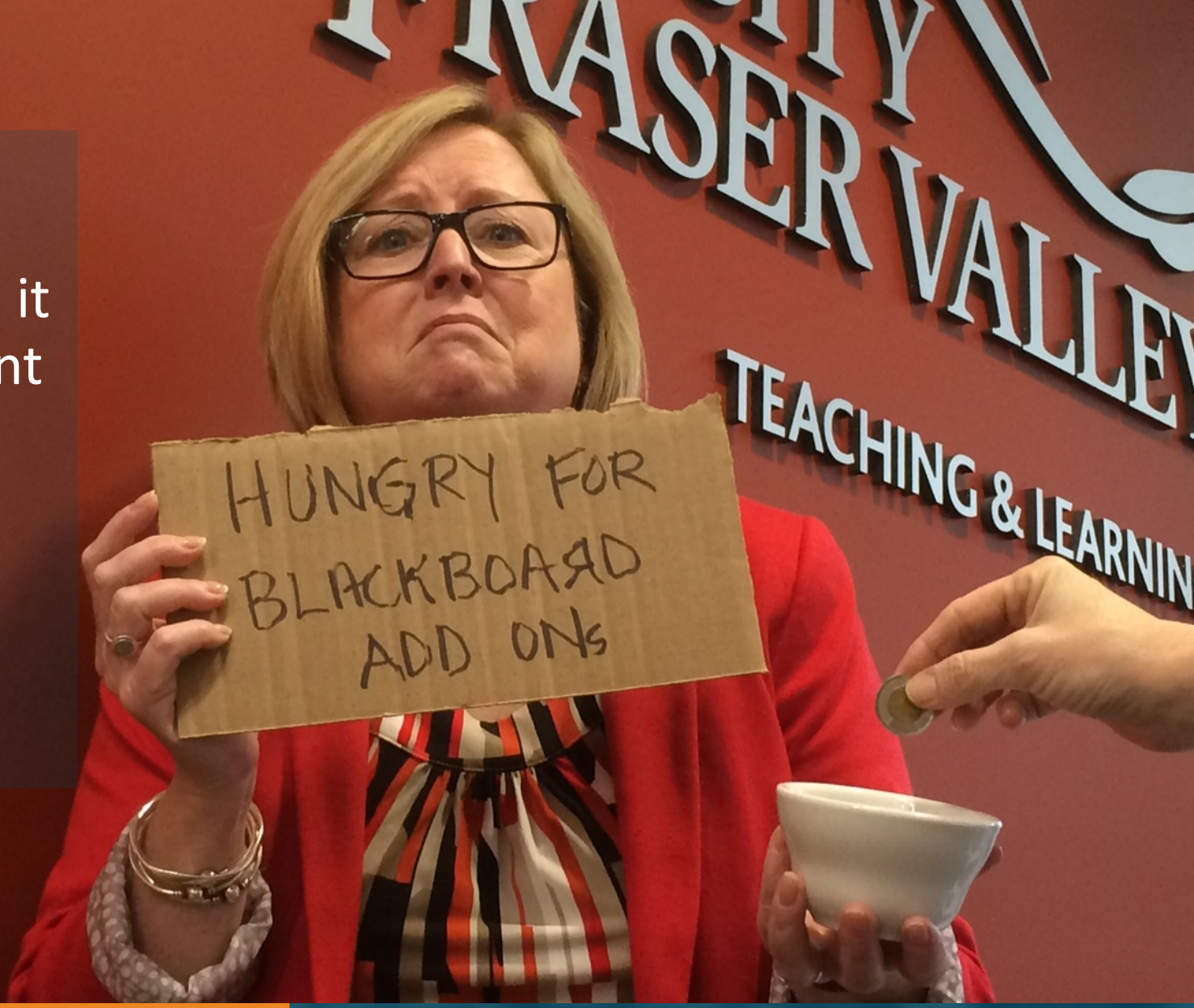
Technology changes how we do things

For many faculty, they have to change how they teach to fit the technology

Many students like standard structures where it is easy to navigate (LMS as repository)

When Blackboard is not available, it is inconvenient

Add-ons are addictive and expensive



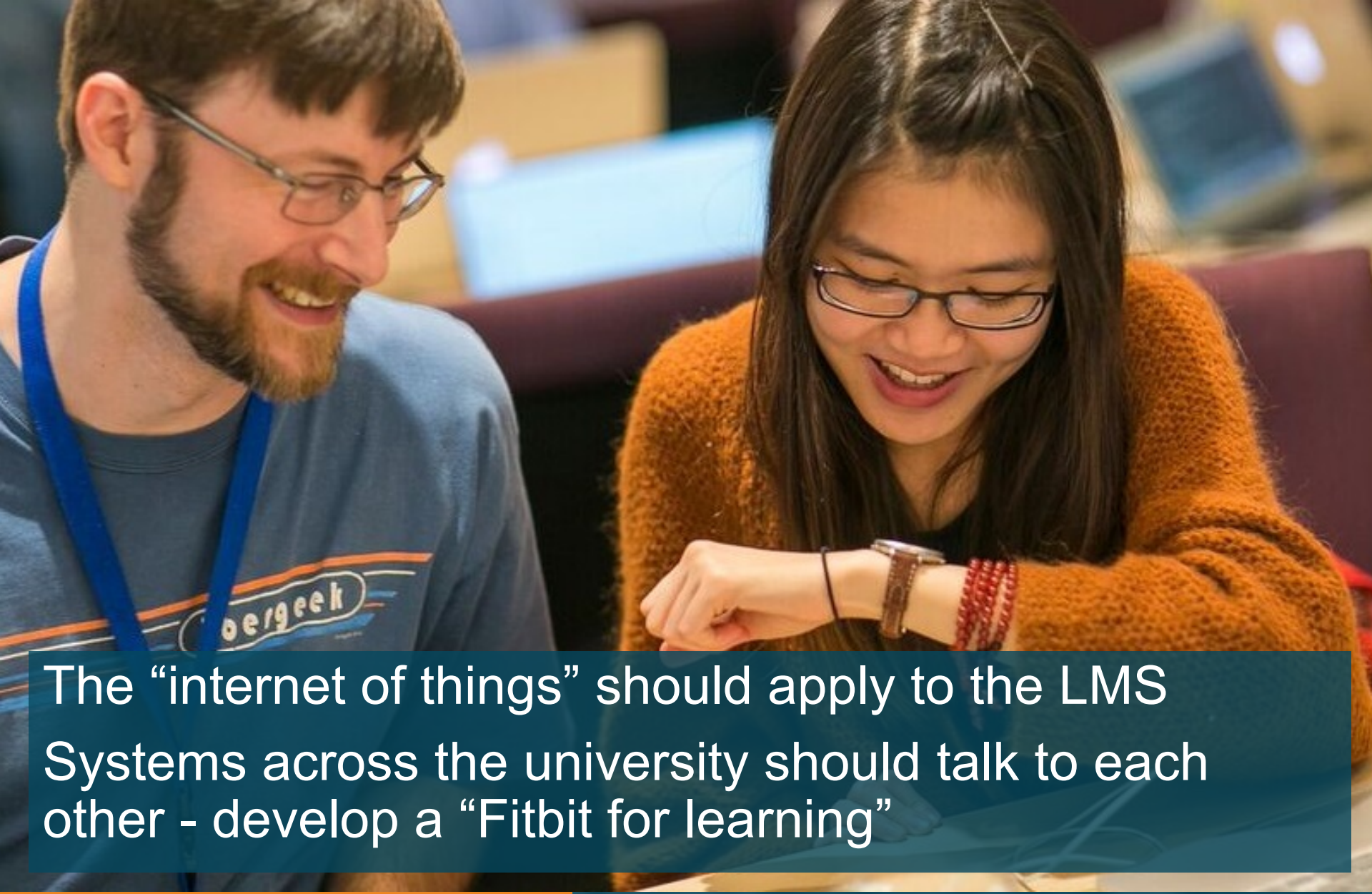
LMS needs to move from *administration* of learning to *enabling* learning

LMS should put the student in the centre.

Enable flexible learning, dynamic content.

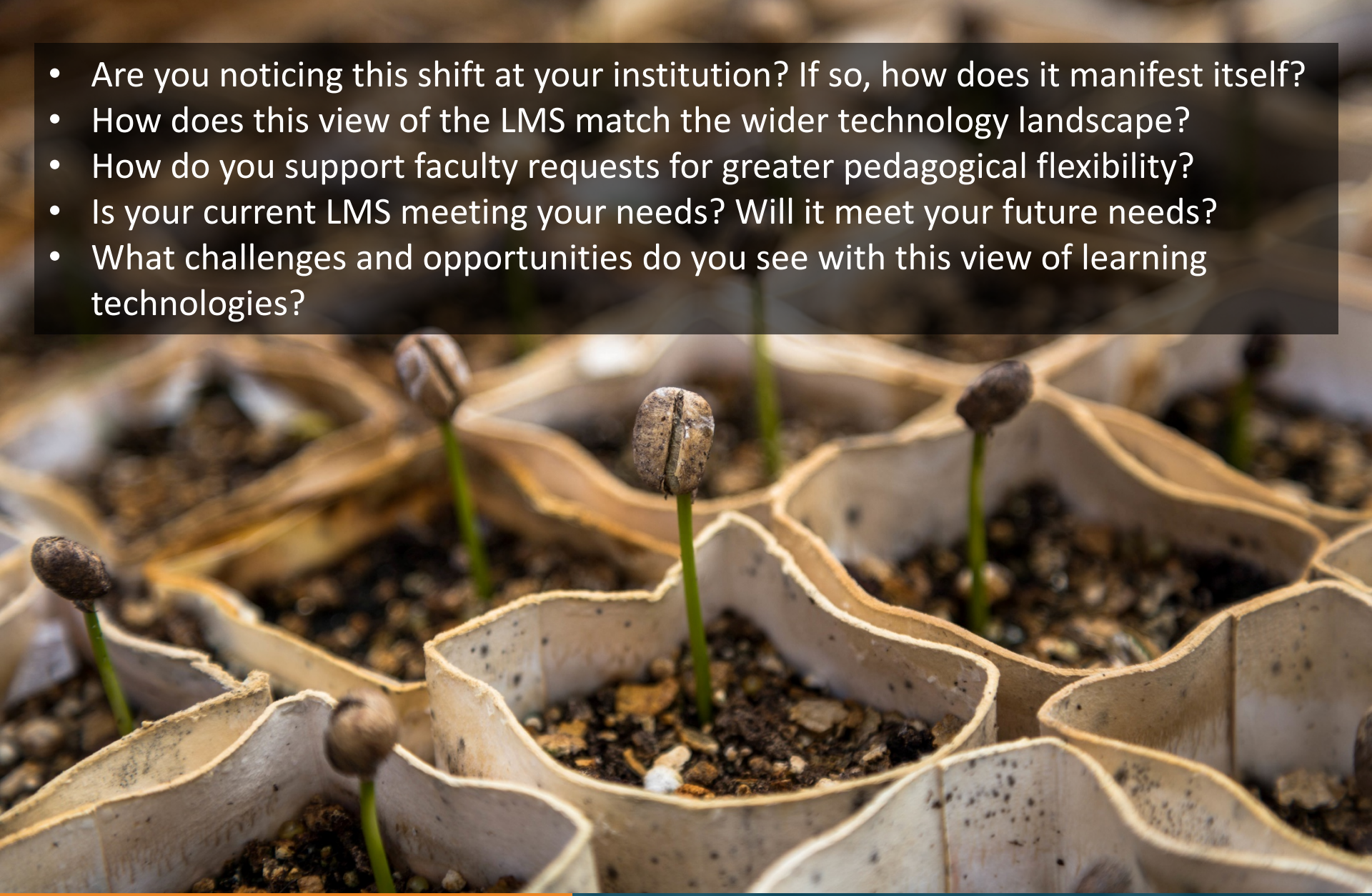
Disciplinary *and* interdisciplinary learning.

Student experience evolves from *receiving* content to *creating* content and sharing it with others



The “internet of things” should apply to the LMS

Systems across the university should talk to each other - develop a “Fitbit for learning”



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Thank you

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