

The Flat World Swung Open: How Web Technology Is Revolutionizing Education

Curtis J. Bonk, Professor, Indiana University
President, CourseShare, LLC
cjbok@indiana.edu
<http://php.indiana.edu/~cjbok>



Audience Poll: Has learning technology has ever transformed your life.



Looking to the Past...



Change not possible as an accountant...

(Life as a CPA, 1981-1986)



Knowledge Navigator (1987) Apple Computer

<http://www.youtube.com/watch?v=hb4Azf6wEoc>



Fast Forward 25+ Years... "Anyone can now learn anything from anyone at any time."

SKILLSHARE LEARN TEACH

Learn anything from
anyone, anywhere.



Join us! Start learning and discover unique classes in your city

Learning is Changing New Technologies = New Delivery Methods...



I. Learning is More Technology Driven Robots teaching English and Virtual Worlds Dr. Meeyong Kim, Dajeon, Korea, May 2012



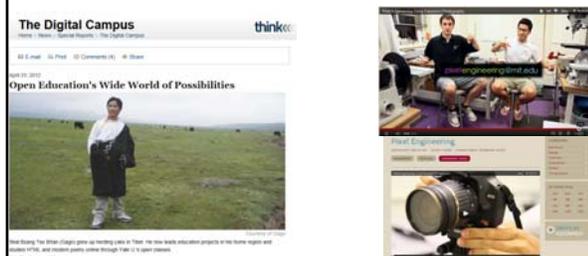
II. Learning is More Video-Based GETideas Channel, Cisco (Thought Leader Series uploaded to YouTubeUdu), July 22, 2011



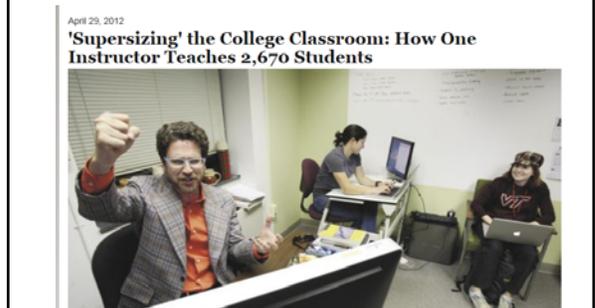
III. Learning is More Mobile Brown, Keynote talk, "Learning in Hand With Mobile Technology," Wisconsin Distance Teaching and Learning Conference, August 10, 2012



IV. Learning is More Open MIT+K-12: Making Video to Make a Difference, April 25, 2012 <http://k12videos.mit.edu/>



V. Learning is More Massive Open Education's Wide World of Possibilities Chronicle of Higher Ed, Katherine Mangan, April 29, 2012 http://chronicle.com/article/Open-Education-Wide-World-of-Possibilities/131672012-01/k12m_mangan



June 25, 2012

Massive Open Online Courses (MOOCs)
A Conversation With Bill Gates About the Future of Higher Education, Chronicle of HE, Jeffrey R. Young
http://chronicle.com/article/A-Conversation-With-Bill-Gates/1325217?cid=at&utm_source=at&utm_medium=em

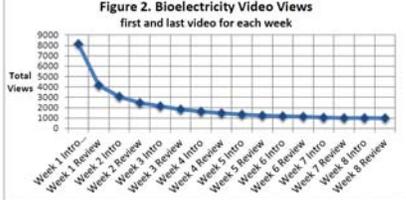
On the Meaning of MOOC's
 "Even though I only have a high school degree, I'm a professional student"



February 5, 2013

Bioelectricity: A Quantitative Approach, Duke University's First MOOC
http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/6216/Duke_Bioelectricity_MOOC_Fall2012.pdf

Figure 2. Bioelectricity Video Views
first and last video for each week



Bioelectricity: A Quantitative Approach
 Roger Colla, Duke
 Duke University



March 7, 2013

At South by Southwest Education Event, Tensions Divide Entrepreneurs and Educators, Jeffrey R. Young, Chronicle of HE
<http://chronicle.com/blogs/wiredcampus/at-south-by-southwest-education-event-tensions-divide-entrepreneurs-and-educators/42777>



Bonk Severance

April 16, 2013 (NovoEd)

New MOOC Provider Says It Fosters Peer Interaction
Chronicle of Higher Education, Jake New
<http://cnhce.com/>



NovoED
 Learn. Collaborate. Innovate.

VI. Learning is More Flipped

Moorsville's Shining Example, February 12, 2012 (It's Not Just About the Laptops), ALAN SCHWARZ, NY Times
http://www.nytimes.com/2012/02/13/education/moorsville-school-district-a-laptop-success-story.html?_r=1&pagewanted=all




VII. Learning is More Empowering

iPad gives voice to kids with autism
Supraja Seshadri, CNN, May 14, 2012

iPad gives voice to kids with autism

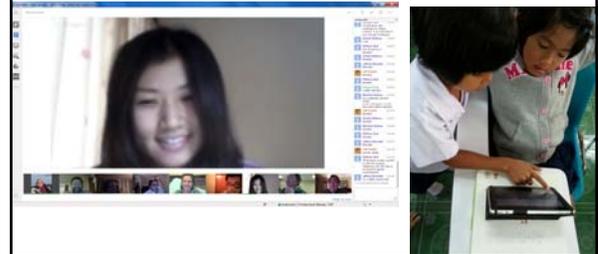


Sharia Siddiqui uses an iPad to help her communicate. Her father says it's "given her a sense of control she never had."

VIII. Learning is More Social
 Facebook to help overhaul ICT curriculum,
 Money, Andrew Marszal, Telegraph, Oct. 19, 2012



IX. Learning is More Collaborative
 Collaboration and Discussion in Google
 Hangouts or with iPad, Jan. 28, 2013
 (Carrie Gong from Beijing Normal University)



X. Learning is More Flexible
 New Learning Space Designs



XI. Learning is More Ubiquitous
 Flexible displays bend what's possible for computers,
 Jon Swartz, USA Today (May 4, 2012)



Components of the wrist-worn display prototype developed at HP Labs are shown in this illustration. When completed, the device will incorporate a working flexible display powered by solar cells.

**XII. Learning is More Pervasive
(i.e., Streamed)**
Google Glass (June 27, 2012)



April 9, 2013
Computer fashions face social test
Can wearable computers fit in?
Scott Martin, USA Today

<http://www.usatoday.com/story/tech/2013/04/09/google-glass-wearable-computer-microsoft-samsung/1979419/>



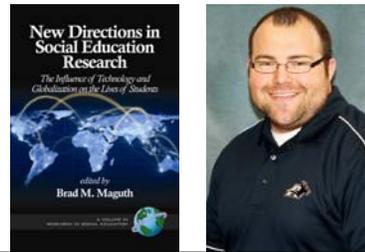
XIII. Learning is More Personal
iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman
(January 10, 2013)

<http://mashable.com/2013/01/10/ipotty/>



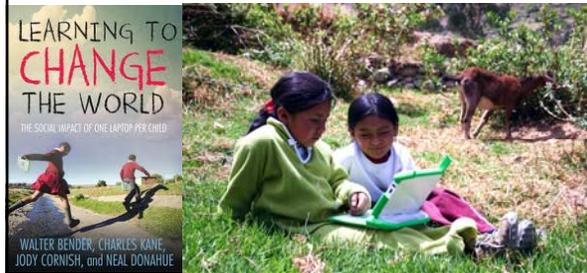
XIV. Learning is More Global
(Book Review by Dr. Mimi Miyoung Lee: Ed Tech Magazine, May-June 2013)

Maguth, Brad M. (Ed.). (2012). *New Directions in Social Education Research: The Influence of Technology and Globalization on the Lives of Students*. Charlotte, NC: Information Age Publishing, Charlotte, NC.



Learning is Changing the World
(Book Review: Ed Tech Mag, May-June 2013)

Walter Bender, Charles Kane, Jody Cornish, and Neal Donahue (2012). *Learning to Change the World: The Social Impact of One Laptop Per Child*. NY: Palgrave Macmillan.



Uruguay – Plan Ceibal
After 450,000+ notebooks



January 30, 2013

DataWind Prepared \$20 Tablet Computer for Indian Market

A Canada-based company believes it can revolutionize education in India by rolling out a \$20 tablet computer.

What can you buy for \$20? A lunch for two? A new shirt? A few groceries? For India's 220 million schoolchildren, \$20 may soon buy a tablet computer.



April 15, 2013

Google boss: Entire world will be online by 2020, Doug Gross, CNN

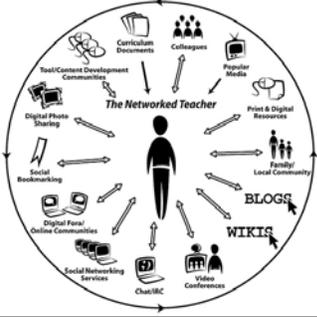
http://www.cnn.com/2013/04/15/tech/web/eric-schmidt-internet/index.html?hpt=hp_t3

Google boss: Entire world will be online by 2020

By Doug Gross CNN
Updated 1:20 PM EDT, 15th April 13, 2013 | First posted: Web



The Web of Learning




It is very open!
(Norway, the Philippines, Saudi Arabia, etc.)



Question:
What is the Web?

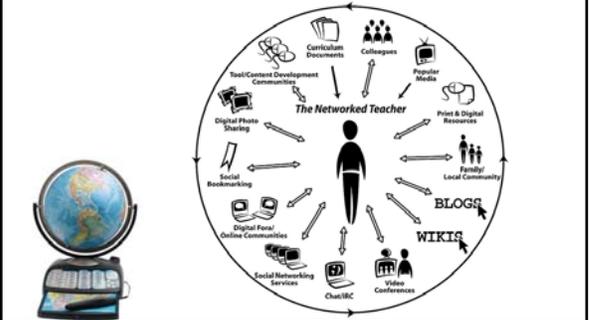
- An entertainment system?
- A writing aid?
- A communications system?
- A means to handle commercial transaction?
- A social networking device?

=====

No, it is a learning tool!



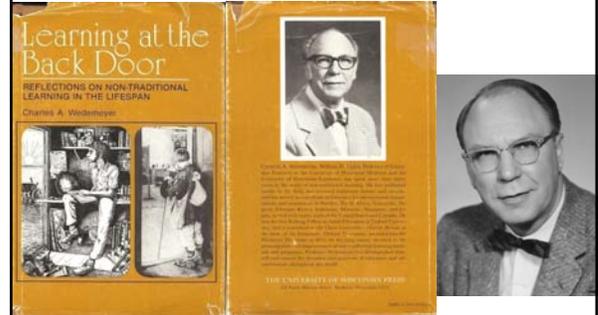
The Web of Learning



We are entering a jumping off point...

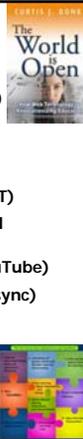


**Charles Wedemeyer,
University of Wisconsin**



Framework #1: WE-ALL-LEARN:
Ten Forces that Opened the Learning World

- **W**eb Searching in the World of e-Books (i.e., Darwin)
- **E**-Learning and Blended Learning
- **A**vailability of Open Source and Free Software (e.g., Moodle)
- **L**everaged Resources and OpenCourseWare (e.g., MIT)
- **L**earning Object Repositories and Portals (i.e., shared content)
- **L**earner Participation in Open Info Communities (YouTube)
- **E**lectronic Collaboration and Interaction (sync and async)
- **A**lternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- **R**ead-Time Mobility and Portability (e.g., iPhone)
- **N**etworks of Personalized Learning (Blogs, RSS)



Audience Participation!

1. WE

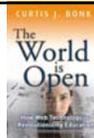
2. ALL

3. LEARN!!!

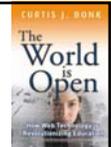
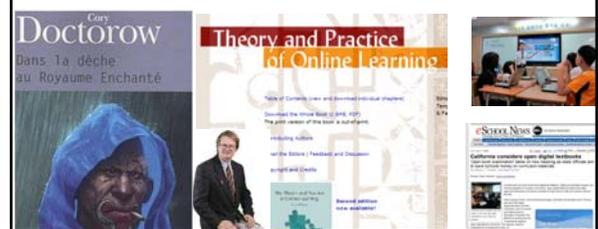


**Triple Learning Technology
Convergence of
"WE-ALL-LEARN"**

1. **Pipes:** The availability of tools and infrastructure for learning.
2. **Pages:** The availability of free educational content and resources (OER—Open Educational Resources).
3. **Participatory Learning Culture:** A move towards a culture of open access to information, international collaboration, and global sharing.



**Opener #1. Web Searching
(e.g., Google, MSN, Yahoo!) in
the World of e-Books (i.e.,
Darwin, Shakespeare, etc.)**



Trend #1. Web Searching in the World of e-Books.
What happens then?

WE



ALL

LEARN!!!



Worldreader, August 22, 2011
What Makes Ed Tech Successful in the Developing World?, ReadWriteWeb, David Risher
http://www.readwriteweb.com/archives/what_makes_educational_technology_successful_in_the_world/
<http://www.worldreader.org/>



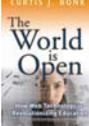

March 24, 2012
In South Korean classrooms, digital textbook revolution meets some resistance, Washington Post

In South Korean classrooms, digital textbook revolution meets some resistance




AP Photo/Young-ju Park. Teacher Yeon Eun-jung, right, helps student Jeong Ho-seok study on a tablet PC during a lesson at Insoo Elementary School in Gwansu, South Korea in July. The country is now scaling back a plan to digitize classrooms by 2015.

Opener #2. E-Learning and Blended Learning





March 2013
Commonwealth of Learning
http://www.col.org/news/Connections/2013Mar/Documents/Connections_March2013.pdf

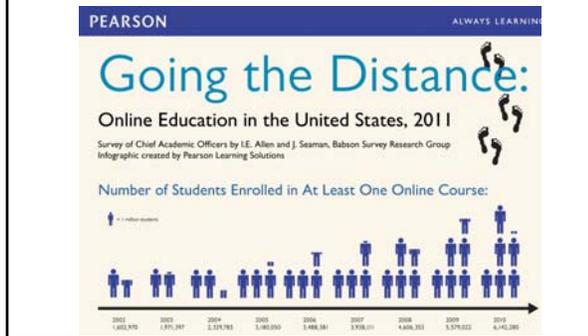


ONLINE COURSE DEVELOPMENT FOR TEACHER EDUCATION IN JAMAICA

January 15, 2013
Online programs offered by Kelley and IU schools of education and nursing highly ranked by U.S. News, IU News Room
<http://newsinfo.iu.edu/news/page/normal/23687.html>




More than six million post-secondary students are taking online classes in the USA; growing by 10% per year.
http://sloanconsortium.org/publications/survey/going_distance_2011



Opener #3. Availability of Open Source and Free Software Moodle (April 17, 2013: 68 million users in 232 countries, 79,400 sites, 7.2 million courses)



Opener #4. Leveraged Resources and OpenCourseWare (OCW) (e.g., free courses from Harvard Edx, MITx, CORE, OOPS)

MIT OPEN COURSEWARE
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OOPS
 OpenSource OpenCourseware Prototype System
 The Foundation of Family Culture and Arts

OOPS
 OpenSource OpenCourseware Prototype System
 開放式課程計劃

January 23, 2012
Udacity- Sebastian Thrun
<http://www.udacity.com/>

UDACITY

CS 511: BUILDING A SEARCH ENGINE
 CS 373: PROGRAMMING A ROBOTIC CAR

University 2.0 - Sebastian Thrun

May 2, 2012
MIT and Harvard announce edX
EdX: The Future of Online Education is Now
<http://www.edxonline.org/about.html>
<http://www.youtube.com/watch?v=SA6ELdIRKRU>

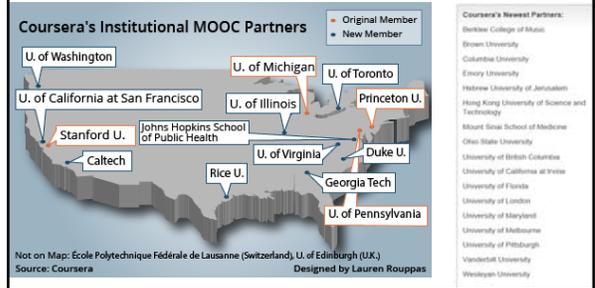
MIT **edX** **HARVARD**

MIT and Harvard announce edX

EdX: The Future of Online Education is Now

MIT Professor

July 17, 2012
(Expanded Sept 19, 2012)
Into the Fray, Steve Kolowich, Inside Higher Ed
<http://www.insidehighered.com/news/2012/07/17/ava-and-11-others-become-latest-plan-moocs#ixzz20uzDjXwW>



November 13, 2012
College credit for online courses gains momentum. USA Today, Mary Beth Marklein,
<http://www.usatoday.com/story/news/nation/2012/11/18/more-on-board-with-online-education-trend-of-moocs/1713079/>

October 1, 2012: MOOC Students
4 Massive Open Online Courses and How They Work, Ben Gose, Chronicle of HE
<http://chronicle.com/blogs/techtherapy/2012/10/03/episode-99-what-wearable-computers-could-mean-for-campuses/>

Rajeev Bajpai, an airline pilot based in Mumbai, took an online computer-science course to gain programming skills.

October 27, 2012
Chuck Severance
(U Michigan/Coursera) in Barcelona
<http://www.youtube.com/watch?v=JzNHvmSv8TI>

November 2, 2012
The Year of the MOOC,
New York Times, Laura Pappano,
<http://www.nytimes.com/2012/11/04/education/edtech/moocs-gain-mooc-courses-are-multiplying-at-a-rapid-pace.html?pagewanted=all>

Clockwise, from top left: an online course in circuits and electronics with an M.I.T. professor (edX); statistics, Stanford (Udacity); machine learning, Stanford (Coursera); organic chemistry, University of Illinois, Urbana (Coursera).

Opener #5. Online Learning
Object Repositories and
Portals (shared content)

The Learning World is Open

A Single Group Helps Trigger an Online-Publishing Explosion
 The Public Knowledge Project, a nonprofit group, estimates that the online-publishing software it offers free has given rise to more than 5,000 open-access academic journals around the world. Below is their geographic distribution, by continent, as of last month.

December 31, 2012
Dead Sea Scrolls
<http://www.deadseascrolls.org.il/explorer-the-archaeology>
http://www.deadseascrolls.org.il/explorer-the-archaeology/search?article=Cheridan_Cave_4
<http://www.deadseascrolls.org.il/>

February 18, 2012
 Talking the Talk, for Posterity
 Oral Online Dictionaries Help Preserve Languages,
 Cultures Muted by Modernity, The Wall Street Journal,
<http://online.wsj.com/article/SB10001424062970204880403577228982976760026.html?articleTabs%3Dinteractive>

**Center for Open Educational Resources
 and Language Learning**
<http://www.coerll.utexas.edu/coerll/>
LRC (Language Resource Center)
<http://www.nflrc.org/>

April 3, 2012
 Google Art Project, NBC Nightly News
<http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508>

September 2011
 Online Encyclopedias
 (e.g, the Encyclopedia of Life,
 Encyclopedia of Earth, etc.)
<http://www.eoearth.org/> <http://eol.org/>

March 13, 2012
 Educational Videos: TED-Ed
<http://education.ted.com/>

October 2010, The V-PORTAL (Bonk, IU)
 "Video Primers in an Online Repository for
 e-Teaching and Learning" V-PORTAL,
 TravelinEdMan (27 free/open YouTube videos)
<http://www.youtube.com/user/TravelinEdMan>

Opener #6. Learner Participation in Open Information Communities
(e.g., Slashdot, Digg, Wikipedia, YouTube)

The Learning World is Open

December 21, 2012
Community Oral Histories
(e.g., The History Harvest)
<http://historyharvest.unl.edu/collections>

October 2011 (E-learn Conference)
History for Music Lovers, Washington Post
The French Revolution ("Bad Romance" by Lady Gaga)
Trojan Way ("Tainted Love" by Soft Cell)
Charlemagne ("Call Me" by Blondie)
<http://www.youtube.com/user/historyteachers?blend=6&ob=5&pf//12/kJULC0jsqdA>

April 6, 2011
Eric Whitacre: A virtual choir 2,000 voices strong
<http://www.youtube.com/watch?v=6WhWDCw3Mng>

Opener #7. Electronic Collaboration and Interaction
(synchronous & asynchronous; Leonardo Tosi, project manager in the ICT and education area of the INDIRE institute)

The Learning World is Open

April 15, 2013
Guest Speakers
Sara de Freitas and Jim Hensman (<https://connect.iu.edu/p2le1yx6z6z/>)
Jay Cross (<https://connect.iu.edu/p4bytsorohb/>)

March 20, 2012
Georgetown Learning Initiatives
Soliya Connect
<http://oll.georgetown.edu/#soliya>

January 14, 2011
South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN
<http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2>

June 29, 2011 and July 6, 2012
Google+ Hangouts and Facebook Video calling
http://www.youtube.com/watch?v=K1f9zFvTA&annotation_id=annotation_389852&feature=youtu.be

May 7, 2012
Google+ Hangouts On Air: broadcast your conversation to the world
<http://googleblog.blogspot.com/2012/05/google-hangouts-on-air-broadcast-your.html#m1e1201205/google-hangouts-on-air-broadcast-your.html>

Opener #8. Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)

Augmented Reality, May 17, 2011:
USA Today, Edward Baig, Augmented reality has potential to reshape our lives.
 (e.g., ZooBurst, Craig Kapp, NYU, pop-up books)
 Verity Tan, Recollections from R685, Fall 2011, <http://vimeo.com/33090590/>

February 20, 2013
 UW-Madison to expand distance learning with Massive Open Online Courses, Kari Knutson, University of Wisconsin-Madison News
http://www.news.wisc.edu/215207utm_source=UW&utm_medium=email&utm_campaign=UW2013-02-21



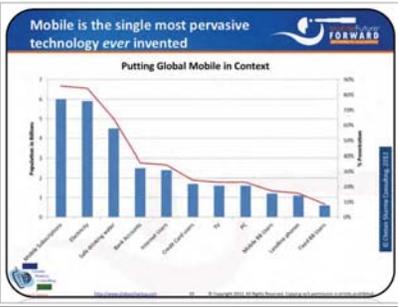
Opener #9. Real-Time Mobility and Portability (e.g., iPhone, low cost wireless devices)

15m people/month mobile in India
 40,000/week Rwanda
 60,000 earthlings/hour






August 10, 2012
 Judy Brown, Keynote talk, "Learning in Hand With Mobile Technology," Wisconsin Distance Teaching and Learning Conference



Mobile is the single most pervasive technology ever invented

FORWARD

February 2012
 Commonwealth of Learning (COL)
http://www.col.org/news/Connections/2012Feb/Documents/COL%20Connections_Esk%20web_150.pdf

IN FOCUS



MEASURING THE IMPACT OF LIFELONG LEARNING FOR FARMERS

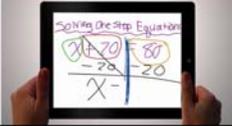
February 2012
 SMILE: Stanford Mobile Inquiry-based Learning Environment





Lessons on iPad
 (e.g., ShowMe: <http://www.showme.com/>)





Sept 18, 2012
How to turn Wikipedia into an e-book,
John D. Sutter

http://www.cnn.com/2012/09/18/tech/mobile/wikipedia-e-book/index.html?hpt=hp_13



STORY HIGHLIGHTS
 CNN — Wikipedia this week created a new feature that allows readers of that online encyclopedia to create their own e-books with...

March 19, 2013
Samsung: We're making a smart watch, too
Doug Gross, CNN Tech

http://www.cnn.com/2013/03/19/tech/mobile/samsung-watch/index.html?hpt=hp_bn5



Opener #10. Networks of
Personalized Learning
(Blogs, Podcasts, MySpace,
Flickr, and RSS)

The Learning World is Open



The Samsung DualView TL225

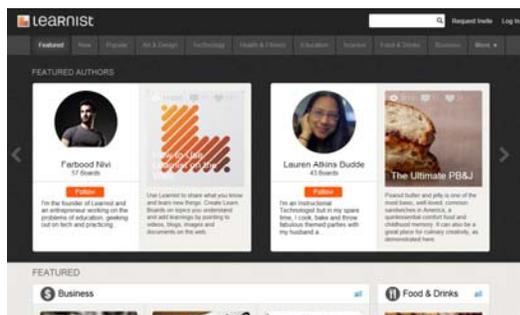
DreamBox Learning

<http://www.dreambox.com/>



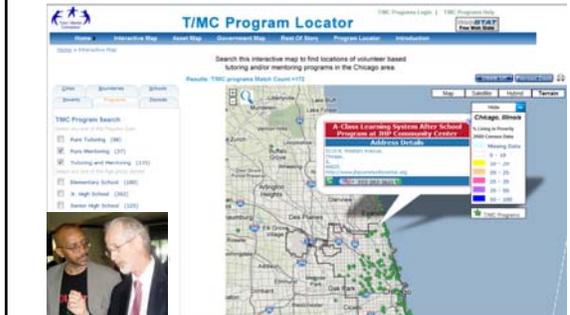
Student Expertise
(e.g., Learnist)

<http://learni.st/category/featured#/category/featured>



June 3, 2012
Tutor/Mentor Connection (Chicago)

<http://www.tutormentorprogramlocator.net/InteractiveMap.aspx>



December 16, 2010
Introducing Word Lens
<http://www.youtube.com/watch?v=h2OfQdYrHRs>

Online Language Learning
 (e.g., Livemocha, ChinesePod, EnglishCentral, iTalki, Palabea, Babbel)

July 12, 2011
An interactive timeline of Middle East protests,
 The Guardian, Garry Blight, and Sheila Pulham,
<http://www.guardian.co.uk/world/interactive/2011/mar/22/middle-east-protest-interactive-timeline>

May 7, 2012
Interactive Maps
 (adults with college degrees by count)

Are you happy now?

Slides at: TrainingShare.com
 Papers: PublicationShare.com
 Book: <http://worldisopen.com/>

WE
ALL
LEARN!!!

OOPS
 開放式課程計劃