

Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning

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Audience Poll #1: Has learning technology ever transformed your life.



1728: 1st correspondence course advertised Boston
(learn shorthand from Caleb Phillips thru weekly mailed lessons)
1728-1990s – Generally postal system based
1930s – phonograph and radio
1950s and 1960s – television
1970s and 1980s – VHS tapes
1980s and 1990s – DVD



February 26, 2013
Tablets Rock On: Education Tech Through The Ages, Information Week, The First Correspondence Course
(University of London, External Program, 1858)
<http://www.informationweek.com/education/leadership/educational-technology-across-the-ages/249149241>



William Rainey Harper, first president of the University of Chicago, developed the concept of extended education. Research Univ. had satellite colleges of education in the wider community.

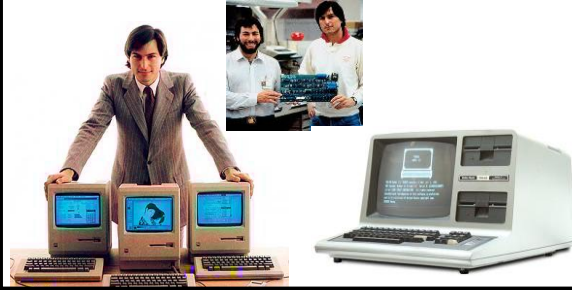
In 1892, he also encouraged the concept of correspondence school courses to further promote education, an idea that was put into practice by Columbia University.



May 10, 2013
10 ed-tech tools of the 70s, 80s, and 90s
eSchool News, Meris Stansbury
<http://www.eschoolnews.com/2013/05/10/10-ed-tech-tools-of-the-70s-80s-and-90s/print/>



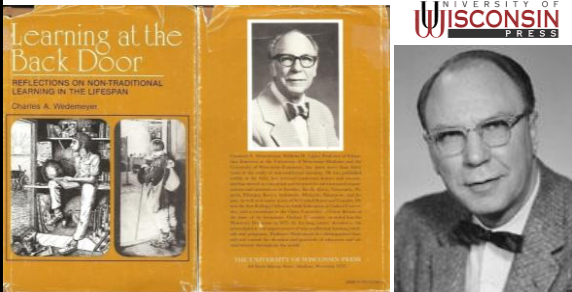
Looking to the Past...



Life as an accountant/CPA in a high tech company in the 1980s...



Took Correspondence & TV Courses (thanks to Bob Clasen and Charles Wedemeyer, the University of Wisconsin)



Knowledge Navigator (1987) Apple Computer

<http://www.youtube.com/watch?v=hb4zF5wEoc>



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



Learn anything from anyone, anywhere.

Join and Start learning and discover unique classes in your city.

February 26, 2013 Free Tablets for Everyone?

<http://www.informationweek.com/education/leadership/educational-technology-across-the-ages/240149241>

Tablets Rock On: Education Tech Through The Ages

From tablets to Google Glasses, education technology has a colorful history. Take a look back and a peek forward.

Comments | Mike Walker | February 26, 2013 08:33 AM

Not Your Father's Classroom

New digital educational devices don't just add convenience to the classroom.

Writing, arguably the first education technology, debuted as a product of the Stone Age. At the time, the education tool.

Although our definition of how computers might use today, we do know that the program was not used by the 20.

centuries of use, including being simplified and altered until it was supported by the Phoenician alphabet around the first.

century AD.

Writing today takes creative writing beyond the classroom. The internet search for new ways to capture and distribute knowledge. The search has provided cultural, political and



Actually Technology is Almost Free...



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.



The Next Generation is Here!



May 20, 2013 The New Greatest Generation: Why Millennials will Save Us All, Time, Joel Stein

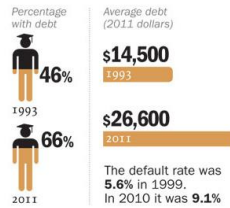
<http://www.time.com/time/magazine/article/0,9171,2143001,00.html>



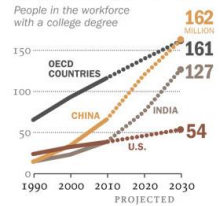
November, 2012 Degrees of Difficulty, Time

<http://nation.time.com/2012/10/18/degrees-of-difficulty/>

Student debt loads are increasing



Having fewer degrees threatens our global competitiveness



September/October, 2012 The Siege of Academy Washington Monthly, Kevin Carey,

http://www.washingtonmonthly.com/magazine/septemberoctober_2012/features/_its_three_edock_in039373.php?page=all



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



Audience Polls #2:

- I. Who remembers where they were when they found out that Steve Jobs passed away?
- II. Who remembers what they were doing on the day that John D. Kennedy was shot?
- III. Who remembers what they were doing on 911?
- IV. Who remembers what they were doing on 441?



Charles Vest (April 4, 2001)

<http://web.mit.edu/newsoffice/2001/ocw.html>

"This is about something bigger than MIT. I hope other universities will see us as educational leaders in this arena, and we very much hope that OpenCourseWare will draw other universities to do the same. We would be delighted if -- over time -- we have a world wide web of knowledge that raises the quality of learning -- and ultimately, the quality of life -- around the globe."



OCW Circuits and Electronics

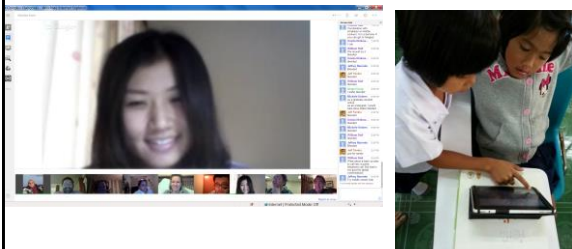
<http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-002-circuits-and-electronics-spring-2007/>

I. Learning is More Open

(80-Year-Old WGU Texas Grad Keeps His Promise, November 30, 2012, Reeve Hamilton, Texas Tribune)



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



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 Video-Based

Adora Svitak, WFP Youth Representative - 2013
ECOSOC Youth Forum, March 27, 2013

"Shaping tomorrow's innovators: Leveraging science, technology, innovation and culture for today's youth", Statement by the World Food Programme Youth Representative, Ms. Adora Svitak at the 2013 ECOSOC Youth Forum.
http://webtv.un.org/meetings/economic_socio_cultural_forum_meetings/article/adora-svitak-wfp-youth-representative-2013-ecosoc-youth-forum-shaping-tomorrow-innovators-leveraging-science-technology-innovation-and-culture-for-todays-youth-223797055003



V. Learning is More Social

Facebook reaches one billion users, CNN Money,
Aaron Smith, October 4, 2012



VI. 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/>



Mashable
iPotty Aims To Entertain Toddlers During Toilet Training

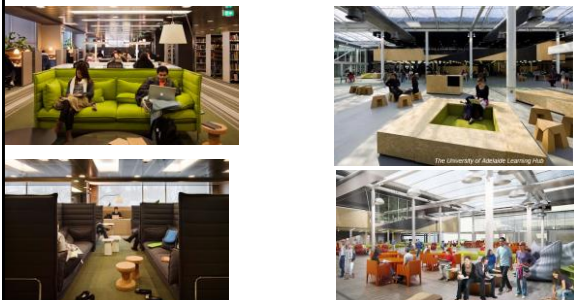
VII. Learning is More Modifiable

Inside Look: Learning Spaces, Meeting classroom teaching and collaboration expectations, University Business, Feb. 22, 2013
<http://www.universitybusiness.com/article/inside-look-learning-spaces>



VIII. Learning is More Comfortable

Design for Students, with Students, "Hub Central", the \$42 million University of Adelaide learning hub opened in October 2011, May 8, 2012, Mike Roberts
<http://designbuildsource.com.au/design-for-students-with-students>



IX. Learning is More Massive

April 16, 2013 (NovoEd)

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



January 23, 2013: The Bush MOOC Party?
 Academic Partnerships Launches MOOC2Degree Initiative
 Free, Open Online Courses As A First Step Toward A Degree

<http://www.mooc2degree.com/>

MOOC2DEGREE™

ABOUT US | PRESS ROOM | CONTACT US



Free, Open Online Courses As A First Step Toward A Degree

MOOC2Degree can help you achieve your academic goals, giving you the opportunity to try online learning for free. Academic Partnerships is collaborating with many of its 40 public university partners to launch the MOOC2Degree initiative which provides you with free, open online courses that lead to academic credit as a first step toward your degree.



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/>



Krissa Swain, of Knoxville, Tenn., is taking "Operations Management" online to help develop her management skills.

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

October 27, 2012
 Travel for Office Hours

Chuck Severance, (U Michigan/Coursera) in Barcelona
<http://www.youtube.com/watch?v=3z2NHVmsv8TI>



November 2, 2012
 The Year of the MOOC,
 New York Times, Laura Pappano,

http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html?_r=1



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).

April 20, 2013
 Two Cheers for Web U!
 A. J. Jacobs, New York Times

http://www.nytimes.com/2013/04/21/opinion/sunday/upgrading-the-moc-university.html?pagewanted=all&_r=3&mc-cel114



May 6, 2013
 Faculty Backlash Grows Against Online Partnerships
 Chronicle of Higher Education, Steve Kolowich

<http://chronicle.com/article/Faculty-Backlash-Grows-Against-139049/>



Michael Sussel, a Harvard professor, taught an online course that San Jose State U. asked its philosophy professors to use in place of their own instruction. They said no.

By Steve Kolowich

June 19, 2013
2013 is "The Year of the Anti-MOOC"
George Siemens, UW-Madison Summit
<http://jgsbahighered.wordpress.com/european-mooc-in-global-context/>



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



XI. Learning is More Instantaneous
 April 9, 2013

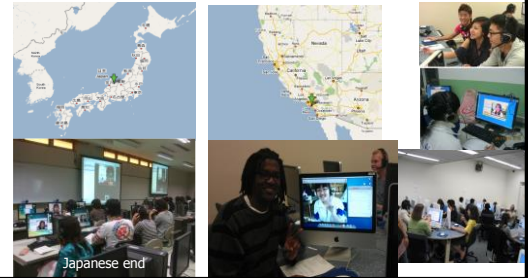
HER Computer fashions face social test: Can wearable computers fit in? Scott Martin, USA Today
 (i.e., magnify moles or injuries, see vital signs, live stream surgeries, access previous PT sessions, access research and drug info, etc.)
<http://www.facebookhealthcare.com/story/google-glasses-could-have-strong-potential-healthcare-use/2013-03-18>



XI. Learning is More Global
 UC Irvine (2013 report)

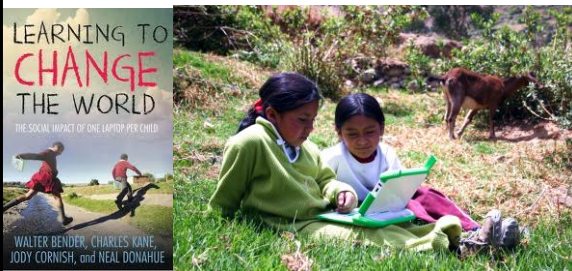
Example 3: Fundamentals of Japanese

Dr. Hidemi Riggs, Fall 2012 & Winter 2013, Tech-enhanced: [EEE AdvancedWebSpace \(Dreamweaver\)](#),
 Skype video conferencing tool: [ActiveLectures](#). Format: 5 - 1A lectures (24 students maximum); 3 - 2A lectures (24 students maximum); 2 - 3A lectures (24 students maximum)



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.



April 15, 2013
World will soon be "Webified"

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_13



Question: What is the Web?

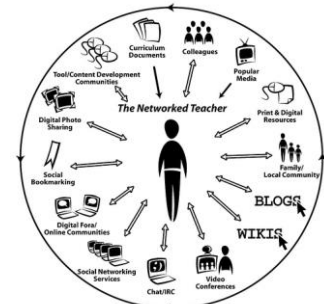
- An entertainment system?
- A writing aid?
- A communications system?
- A means to handle commercial transaction?
- A social networking device?



=====

No, it is a learning tool!

The Web of Learning



It is very open! (at least in Norway & the Philippines)



We are entering a jumping off point...



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**eal-Time Mobility and Portability (e.g., iPhone)
- **N**etworks of Personalized Learning (Blogs, RSS)



Audience Participation!

WE

ALL

LEARN!!!



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



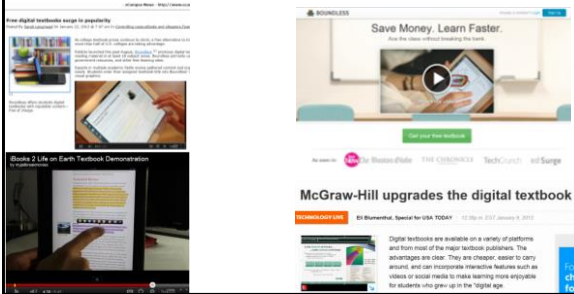
1. **Pipes:** The availability of tools and infrastructure for learning.
2. **Pages:** The availability of free educational content and resources (OER—Open Educational Resources).
3. **Participatory Learning Culture:** A move towards a culture of open access to information, international collaboration,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

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

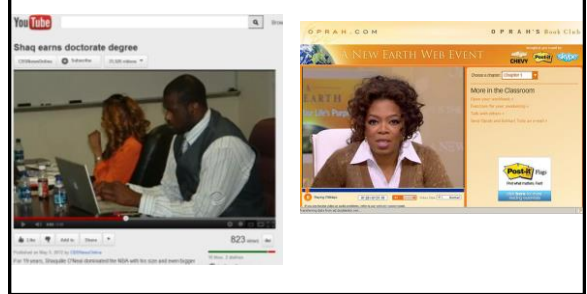


January 22, 2013 Free digital textbooks surge in popularity, Sarah Langmead, Assistant Editor, eCampus News,

<http://www.ecampusnews.com/featured-on-ecampus-news/free-digital-textbooks-surge-in-popularity/>



Opener #2. E-Learning and Blended Learning

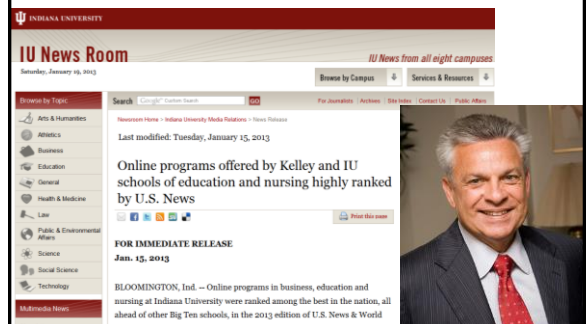


E LEARNING

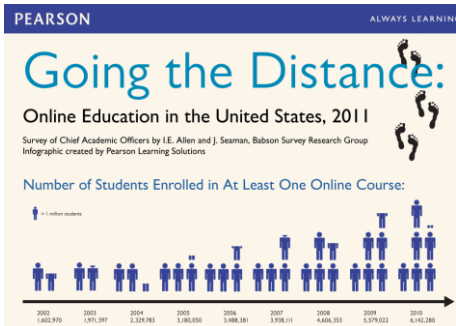


January 15, 2013 Online programs offered by Kelley and IU schools of education and nursing highly ranked by U.S. News, IU News Room

<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



August 5, 2013
Free Online Higher Education: 5 Best MOOCs
 By **Kannan Sankaran, Epoch Times**
<http://www.theepochtimes.com/n3/229540-5-best-moocs-for-free-online-higher-education/>

MOOC at UPenn; Recession Fuels Explosion of Online Learning
<http://www.youtube.com/watch?v=52rFIM40ISw>



Opener #3. Availability of Open Source and Free Software Moodle (July 18, 2013: 72 million users in 237 countries, 84,518 sites, 7.6 million courses)



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



Saylor.org
<http://www.saylor.org/>
RedHoop
<http://redhoop.org/>



February 16, 2012

Online Badges and Certifications from OER University of Illinois at Springfield, Ray Schroeder
<https://sites.google.com/site/opencontinuinged/>

Badges and other alternative certifications

Some sample badges:

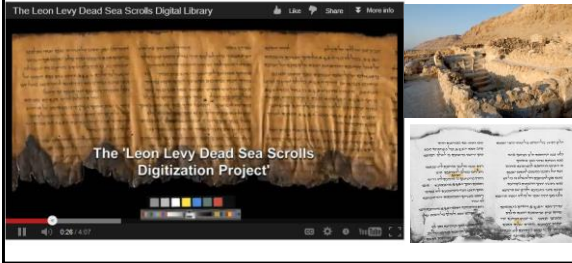


How Will Mozilla's Open Badges Project Affect Higher Ed? by Audrey Watters, Hack [Higher] Education - Inside Higher Ed

"The Open Badges Project is a recognition that "learning looks very different today than traditionally imagined. Legitimate and interest-driven learning occurs through a multitude of channels outside of formal education, and yet much of that learning does not "count" in today's world. There is to demonstrate that learning and transfer it across contexts or use it for real results," Mozilla's Erin Knight told me in an interview for O'Reilly.

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

<http://www.deadseascrolls.org/j/explore-the-archive>
http://www.deadseascrolls.org/j/explore-the-archive/search?site_en=Qumran_Cave_4
<http://www.deadseascrolls.org/j/home>



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?brend=6&ob=5&plf12/KJULC0jsgdA>

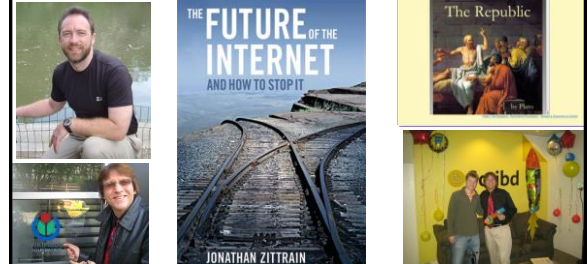


October 2010, The V-PORTAL (Bonk, IU)
"Video Primers in an Online Repository for e-Teaching and Learning" V-PORTAL, TravelinEdMan (27 free/open YouTube videos)

<http://www.youtube.com/user/TravelinEdMan>



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



Opener #7. Electronic Collaboration and Interaction (synchronous & asynchronous)

Soliya Connect

<http://gli.georgetown.edu/#soliya>

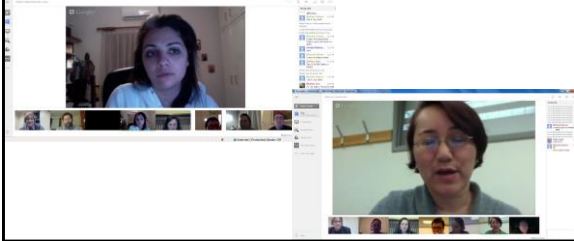


February 26, 2013
Tablets Rock On: Education Tech Through The Ages, Information Week

<http://www.informationweek.com/education/leadership/educational-technology-across-the-ages/249149241>



Google Hangouts Class Sync Collaboration and Discussion (Spring, 2013)



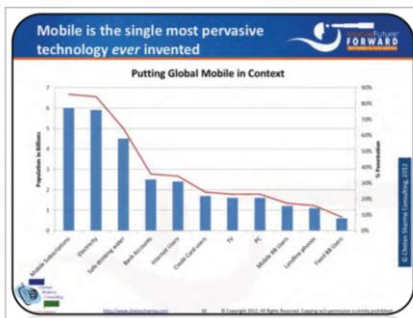
Opener #8. Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)



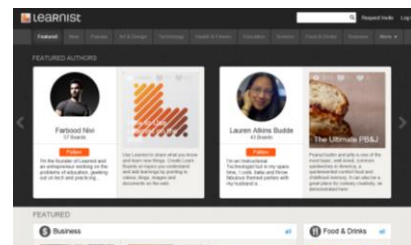
Opener #9. Real-Time Mobility and Portability (e.g., iPhone, low cost wireless devices) 60,000 earthlings/hour get mobile



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



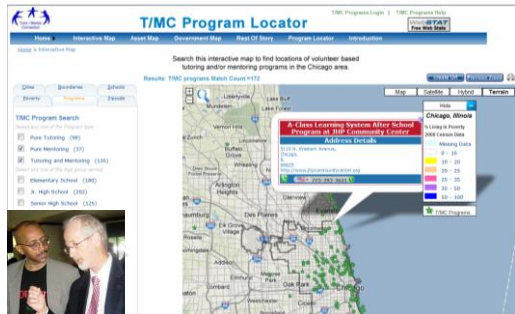
Opener #10. Networks of Personalized Learning (Blogs, Podcasts, MySpace, Flickr, and RSS)



June 3, 2012

Tutor/Mentor Connection (Chicago)

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



What about the Instructor in the Open World?



1. Instructor as Credit Manager



7. Instructor as Conductor



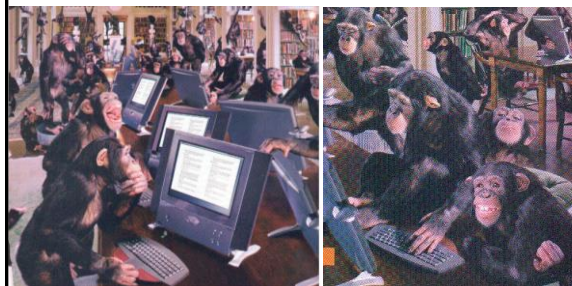
9. Instructor as Curator



10. Instructor as Concierge



From Tinkering to Tottering to Totally Extreme Learning...



Tinkering



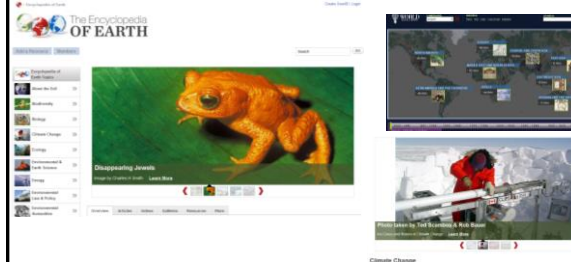
Tinker #1.

Using Online Encyclopedias

(e.g, the Encyclopedia of Earth:

<http://www.eoearth.org/>)

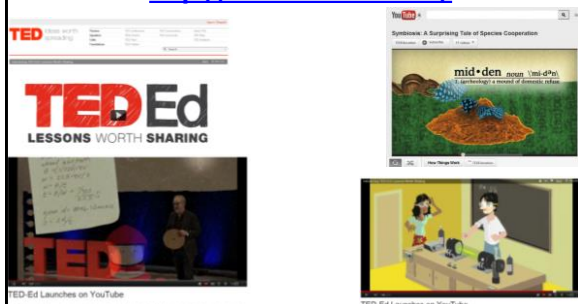
http://en.wikipedia.org/wiki/Encyclopedia_of_Earth



Tinker #2.

Educational Videos: TED-Ed

<http://education.ted.com/>



Tinkering #3.

Tracking the Life of a Scientist

(e.g., Brian J. Ford, independent scientist)

<http://www.youtube.com/user/tellymonitor#p/u/3/LhGeApsKjastr>

<http://www.labnews.co.uk/news/prehistoric-revolution/>



Tottering



Totter #1. Combining Asynchronous and Synchronous Events (flipping classes)

Figure 1: Blended Instructional Classroom Models (2011)

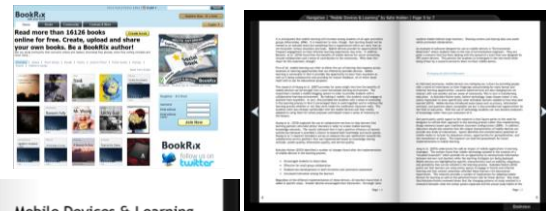
Figure 2: Blended Instructional Classroom Models (2011)

Totter #2. Multiple Guest Experts

Sara de Freitas and Jim Hensman, U of Coventry, UK
(<https://connect.liv.edu/p2161.vyr65k/>)
Jay Cross, Berkeley (<https://connect.liv.edu/p4thystoroh/>)



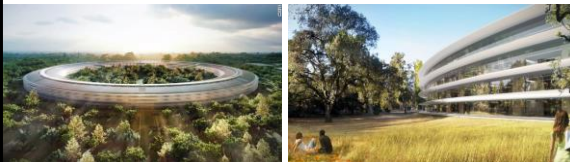
Totter #3. Uploading Mobile Books (e.g., BookRix, <http://www.bookrix.com/>)



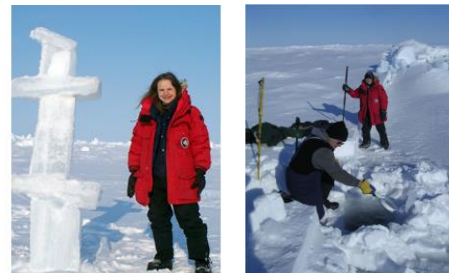
Mobile Devices & Learning
How mobile devices are re-shaping the field of education

You Want Totally Extreme?

Apple's new 'spaceship' campus: What will the neighbors say?, Doug Gross, CNN, May 22, 2012
(http://www.cnn.com/2012/05/22/tech/innovation/new-apple-campus/index.html?hpt=hp_hp1)



Totally Extreme #1. iPod Learning from MIT OCW (e.g., Wendy Ermold, University of Washington)



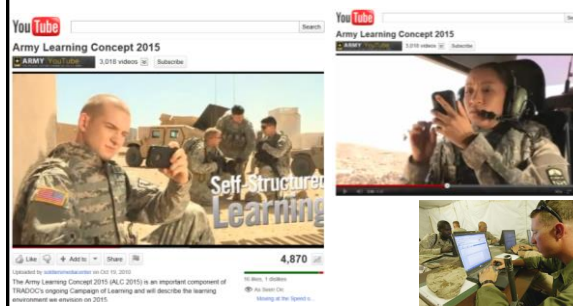
Totally Extreme #2.

February 22, 2013 and May 12, 2013
NASA's spacey Google+ Hangout shows off zero-G antics – and cats!

<http://csmklog.alcnews.com/news/101/10122113/021313-0106-spacey-google-hangout-shows-off-zero-g-antics-and-cats?ie>
Space Oddity - Chris Hadfield video onboard ISS with Larrivée Guitard
International Space Station Commander, Chris Hadfield, performs a revised version of David Bowie's Space Oddity.



Totally Extreme #3. MBAs from War Zones...!



Totally Extreme #4. Blog Adventures

Tracing the fate of Algal Carbon Export in the Ross Sea, Antarctica

TRACERS: The NBP13-02 Cruise, February 12 to April 5, 2013

<http://tracers-nbp1302.blogspot.com/p/the-project.html>

From: Cassandra Brooks [cbrooks1@stanford.edu]

Sent: Thursday, January 31, 2013 12:09 AM

Subject: I'm heading out today to New Zealand, then flying to Antarctica where we pick up our NSF icebreaker. We'll be at sea for about 54 days.



Totally Extreme #5. Video Walls of Experts



Totally Extreme #6. Interactive Globes

(e.g., NY Times Interactive Photo Globe)

http://www.nytimes.com/interactive/2010/05/03/blog/a-moment-in-time.html?_r=0



Who is Content Now? And Who is Stretched Now?

Website: www.Extreme-Learning.com

Slides at: TrainingShare.com

Book: <http://worldisopen.com/>

Dr. Curt Bonk – CJBonk@Indiana.edu

