
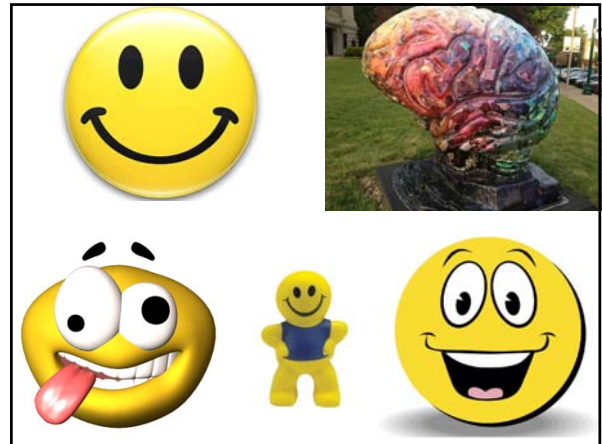
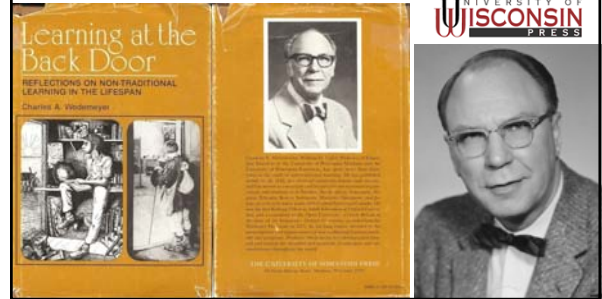


Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning


Curtis J. Bonk,
Professor, Indiana University
 cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>


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



June 21, 2011 (and February 16, 2012)
Ray Schroeder, U of Illinois at Springfield Guest Speaker on Open Education Movement
<http://breeze.iu.edu/p94lec5su62/>



August 2, 2011
Massive Open Online Courses (MOOC) and Graded Free OCW,
 Stanford U. Offers Free Online Course in Artificial Intelligence, Jie Jenny Zou, Chronicle of Higher Education (over 135,000 sign up as of August 27)
<http://www.ai-class.com/>



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

The screenshot shows the Udacity website with a navigation bar and a main content area. On the left, there are two course cards: 'CS 101: BUILDING A SEARCH ENGINE' and 'CS 373: PROGRAMMING A ROBOTIC CAR'. On the right, there is a video player showing Sebastian Thrun speaking, with a whiteboard in the background that has 'D-SEPARATION' written on it.

February 21, 2012
Rethinking Learning with Salman Khan
 Stanford Graduate School of Business
<http://www.youtube.com/watch?v=Wvj6BhQa5w>
 Khan Academy Founder Finds Simplicity Appeals in Online Education Experimentation
<http://www.gsb.stanford.edu/news/headlines/sal-khan-academy.html>
 Let's use video to reinvent education, TED, March 2011
http://www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education.html

The screenshot shows a YouTube video player with the title 'Rethinking Learning with Salman Khan' and a view count of 1,641. To the right, there is a TED talk slide titled 'Salman Khan: Let's use video to reinvent education' with a video thumbnail of Salman Khan.

April 18, 2012
Coursera
 Online-Education Start-Up Teams With Top-Ranked Universities to Offer Free Courses,
<https://www.coursera.org/>

The screenshot shows the Coursera website homepage. It features a large banner with the text 'Learn.' and 'Sign Up Now'. Below the banner, there are logos for Princeton University, Stanford University, MIT, and Penn. The website is for 'Healthcare, Medicine, and Biology'.

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

The screenshot shows the Pixel Engineering website. It features a video player showing a hand holding a camera lens. To the right, there is a sidebar with a 'STANCE LOG' and a 'GREATEST' section. Below the main content, there is a video player showing two people sitting at a table.

April 27, 2012
 Introduction to Blackboard/CourseSites MOOC, With
 Dr. Curt Bonk: "Instructional Ideas and Technology
 Tools for Online Success" (4,039 now enrolled)
<http://www.youtube.com/watch?v=rBNe8CuePTQ&feature=youtu.be>

The screenshot shows a Blackboard/CourseSites MOOC interface. It features a header with the text 'Empowering Learning Through Community' and 'Welcome to Instructional Ideas and Technology Tools for Online Success'. Below the header, there are several video thumbnails showing Dr. Curt Bonk speaking.

April 29, 2012
 Open Education's Wide World of Possibilities,
 Chronicle of Higher Education, Katherine Mangan
http://chronicle.com/article/Open-Educations-Wide-World-of/131672?cid=at&utm_source=at&utm_medium=en


The screenshot shows a Chronicle of Higher Education article page. It features a header with the text 'The Digital Campus' and 'thinkcc'. Below the header, there is a video thumbnail showing a person standing in a field.

April 29, 2012
'Supersizing' the College Classroom:
How One Instructor Teaches 2,670 Students
 Chronicle of Higher Education, Marc Parry
<http://chronicle.com/article/Slide-Show-Technology-for/131711/>



John Boyer teaches a megaclass in current events at Virginia Tech in person—and holds online office hours using Ustream.

May 2, 2012
MIT and Harvard announce edX
<http://www.edxonline.org/about.html>
EdX: The Future of Online Education is Now
<http://www.youtube.com/watch?v=SA6ELdIRRU>



June 18, 2012
Udacity to Launch 5 New Courses, from Statistics to Physics.
Shooting for Largest Online Class Ever, Open Culture
http://www.openculture.com/2012/06/udacity_to_launch_5_new_classes.html



June 19, 2012
Piazza Makes Stanford's iTunes U App Development Course Social, Forbes, Tomio Geron and
Stanford Social Network Class of 400,000



June 19, 2012
UW System to offer new 'flexible degree' program,
 Matthew DeFour, Wisconsin State Journal



July 2, 2012
Sign Up for Google's Power Searching Online Course to Boost Your Google-Fu
<http://lifehacker.com/5922804/sign-up-for-googles-power-searching-online-course-to-boost-your-google-fu>



July 3, 2012
Actor Andy Griffith dead at 86,
CNN, Michael Pearson

<http://www.cnn.com/2012/07/03/showbiz/andy-griffith-dead/index.html>
http://www.cnn.com/2012/07/03/showbiz/celebrity-news-gossip/tom-cruise-50-birthday/index.html?hpt=hp_12

The screenshot shows the CNN Entertainment homepage. The main headline is "Actor Andy Griffith dead at 86" by Michael Pearson. To the right is a gallery titled "Tom Cruise turns 50". Below the main headline is a photo of Andy Griffith with the caption "Andy Griffith through the years". Below the gallery is a photo of Tom Cruise with the caption "Happy birthday, Tom Cruise".

July 5, 2012
Of robots and history (and humans)
A timeline of select robotic moments
Jon Swartz, USA Today

<http://content.usatoday.com/communities/robotmoment/post/2012/07/report-apollo-the-moon-land-in-the-works-60c-76c-f6f/1>

The screenshot shows an article titled "Of robots and history (and humans)" by Jon Swartz. It features a timeline of robotic moments. The first item is "Aristotle" with a photo of the philosopher. The second item is "Mars Science Laboratory" with a photo of the rover. The article includes a quote: "If every first robot created, or even if its last, could be the work that built it - then there would be no need other of education for the master workers or of slaves for the bots."

Poll #1: Is this a revolution in education today?
A. Yes...
B. No...

The poll question is "Poll #1: Is this a revolution in education today?" with options "A. Yes..." and "B. No...". Below the poll are three book covers: "The World is Flat: A Brief History of the Twenty-First Century" by Thomas L. Friedman, "The World is Curved: Hidden Dangers to the Global Economy" by David M. Smick, and "The World is Open: How Web Technology is Revolutionizing Education" by Curtis J. Bonk. There is also a small image of a person with a red question mark.

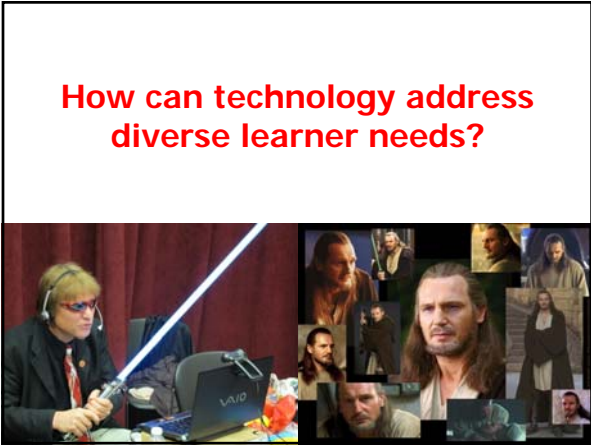
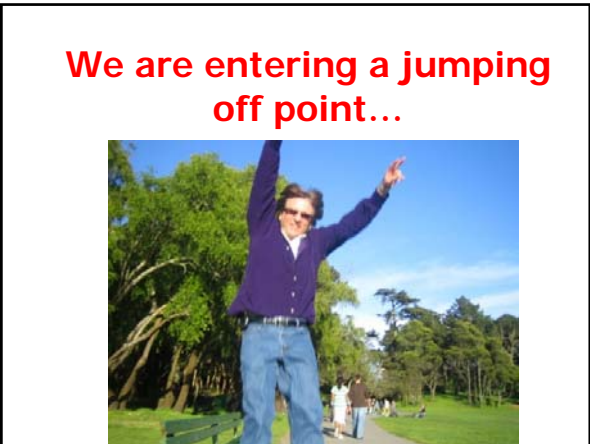
The Web of Learning

The diagram "The Web of Learning" features a central figure of a person. Surrounding this figure are various icons and labels representing educational and technological concepts: "The Networked Teacher", "Curriculum Development", "Colleagues", "Pop Culture Media", "Print & Digital Resources", "Family/Local Community", "BLOGS", "WIKIS", "Video Conferences", "Chat/IRC", "Social Networking Services", "Digital Peer/Online Communities", "Social Bookmarking", "Digital Photo Sharing", "Tool/Content Development Communities", and "Digital Documents". There are also images of a dog on a laptop and a squirrel at a computer.

**The World is Open...
 It is very open!**

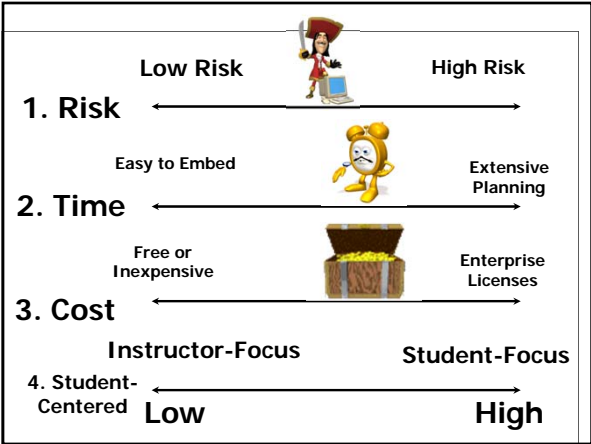
A collage of six photographs showing people at a conference or meeting. In several photos, people are raising their hands, suggesting an interactive or open environment. The photos show a large audience in a hall and smaller groups of people.





**Framework #1:
The R2D2 Method**

1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)



1. Auditory or Verbal Learners

- Auditory and verbal learners prefer words, spoken or written explanations.



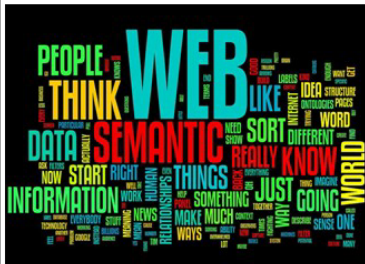
Read 1a. Learning Planet: Interactive Glossary

Umida Khikmatillaeva, Dec. 2011, P540
<http://learningplanet.shutterstock.com/>



Read 1b. Wordle

A Pedagogy of Abundance or a Pedagogy to Support Human Beings? Participant Support on Massive Open Online Courses, IRRODL, Kop, Fournier, & Sui Fai Mak, November 2011
<http://www.irrodl.org/index.php/irrodl/article/view/1041/2025>



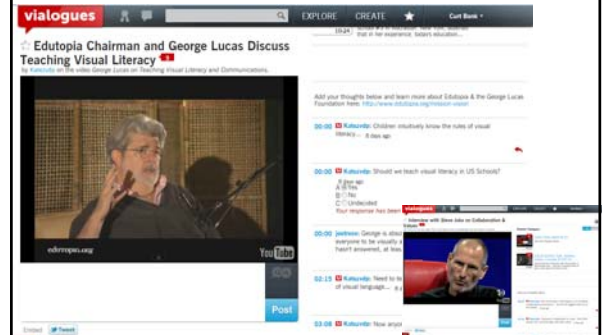
Instructional Ideas and Technology Tools for Online Success
 Massive Open Online Course



Dr. Cvet Bek, Indiana University
 Consortium for Blackboard
 IU

Figure 4. PLENK2010 Wordle.

Reflect 2a. Discuss Videos (e.g., Grockit Answers and Vialogues; <https://vialogues.com/>)



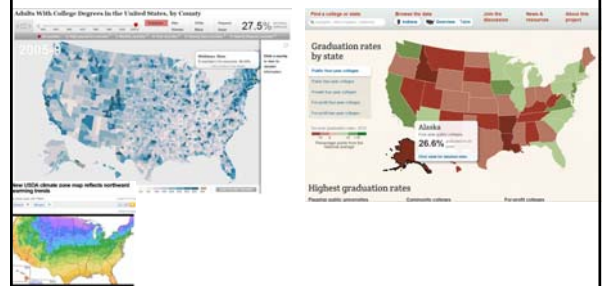
Display 3a. Segment Video Anchors (e.g., TubeChop of V-PORTAL: Video Primers in an Online Repository of e-Teaching and Learning; "Wikibooks Hooray for Us")

<http://www.tubechop.com/watch/378752>



Display 3b. Interactive Maps (adults with college degrees by county, May 7, 2012)

<http://todaycampus.com/article/Keith-Hampton-Interviews-Josh-Keller-on-Interactive-Graphics-for-Higher-Education>



Do 4a. Negotiate Meanings Online

(e.g.m MeetingWords: <http://meetingwords.com/>)

MeetingWords is a simple text editor for the web. Your text is saved on the web, and more than one person can edit the same document at the same time. Everybody's changes are instantly reflected on all screens. Work together on meeting notes, brainstorming sessions, homework, team programming and more!



Do 4b. Uploading Mobile Books

(e.g., BookRix, <http://www.bookrix.com/>)



We are not motivating students with the technologies that they love!



April 15, 2012

Can Colleges Manufacture Motivation?, Dab Berrett, Chronicle of Higher Ed

<http://chronicle.com/article/Can-Colleges-Manufacture/131564/>

April 15, 2012

Can Colleges Manufacture Motivation?

By Dan Berrett

Vancouver, British Columbia



Ok, Million Dollar Question:
How do you motivate online learners?
What Words come to mind?
(Please enter in chat window)



Framework #2: TEC-VARIETY for Online Motivation and Retention

1. Tone/Climate: Psych Safety, Comfort, Belonging
2. Encouragement, Feedback: Responsive, Supports
3. Curiosity: Surprise, Intrigue, Unknowns
- ...
4. Variety: Novelty, Fun, Fantasy
5. Autonomy: Choice: Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactive: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Excitement
9. Tension: Challenge, Dissonance, Controversy
10. Yields Products: Goal Driven, Products, Success, Ownership

1. Tone/Climate: A. Video Course Intros
(examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

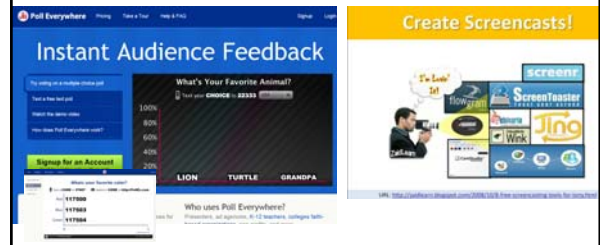
Yun Yun Chow, Open U Malaysia, Making Art Lessons Come Alive with Web 2.0
<http://www.youtube.com/watch?v=BO9rqJD1GXo>



2. Encouragement, Feedback, etc.:

A. Create Screencasts Website Polling
(e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)

<http://www.poll everywhere.com/>



3. Curiosity, Intrigue:

A. Online News

(CNN, July 8, 2012, BBC, June 26, 2012)



4. Variety, Novelty, Fun:

A. Random Lists (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)



4. Variety, Novelty, Fun:

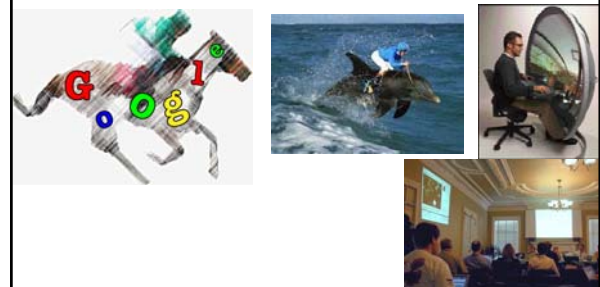
B. History for Music Lovers

The French Revolution ("Bad Romance" by Lady Gaga)
Trojan War ("Tainted Love" by Soft Cell)
Charlemagne ("Call Me" by Blondie)
The Vikings ("Personal Jesus" by Depeche Mode)
The Crusades ("Eyes Without a Face" by Billy Idol)
Constantine ("Come On, Eileen" by Dexy's Midnight Runners)
<http://www.youtube.com/user/historyteachers>



5. Autonomy, Choice:


A. Online Resource Search
(Class Google Jockeys)
(links to text, soundtracks, video clips, etc.)



5. Autonomy, Choice:


B. Web Exploration Assignments

1. Complete Works of Charles Darwin Online: <http://darwin-online.org.uk/>
2. The Complete Works of William Shakespeare: <http://shakespeare.mit.edu/>
3. Edgar Allan Poe Society of Baltimore: <http://www.eapoe.org/>
4. Einstein Archives Online: <http://www.alberteinstein.info/>
5. Federal Resources for Educational Excellent project: <http://free.ed.gov/>
6. Global Text Project: <http://globaltext.org/>
7. iBerry (Open Courseware Directory): <http://iberry.com/>
8. Jane Austen: <http://www.janeausten.org/>
9. The Jane Goodall Institute: <http://www.janegoodall.org/>
10. Timeless Hemmingway: <http://www.timelesshemingway.com/>



6. Relevance, Meaningfulness:


A. Online Cases (e.g., Mark Braun, IU)



7. Interactive, Collaborative:


A. Collaborative Video Annotations and Discussions (Craig Howard, IU)

<http://scholarworks.iu.edu/journals/index.php/ijdi/article/view/853/912>



7. Interactive, Collaborative:

B. Cross-Cultural Videoconference (e.g., Global Nomads Group, Int'l Studies in Schools (i.e., ISIS); Chinese, Niger, Sudan, Life in Eastern Europe, History of Mexico)



8. Engagement, Effort:

A. Interactive Event Timeline

Arab spring: an interactive timeline of Middle East protests, The Guardian, Garry Blight & Sheila Pulham, July 12, 2011


<http://www.guardian.co.uk/world/interactive/2011/mar/22/middle-east-protest-interactive-timeline>



8. Engagement, Effort:

B. Visualizing Emancipation (June 12, 2012. Chronicle of HE, Angela Chen, Interactive Map Traces Slaves' Path to Emancipation)

<http://dsl.richmond.edu/emancipation/>



8. Engagement, Effort:
 C. CNN (2011). Map: Impact of Japan tsunami and earthquake. *CNN*.
<http://www.cnn.com/SPECIALS/2011/japan.quake/map/>

9. Tension, Challenge:
 A. Predict outcomes (June 26, 2012)
 (e.g., Interactive Political Maps: Huffington Post)
<http://elections.huffingtonpost.com/2012/ramney-vs-obama-electoral-map/#!/>

9. Tension, Challenge, etc.:
 B. Game Show Final Project,
 April 25, 2011, Kim Seeber
 Website: <http://mypage.ltu.edu/~kseeber/web2.0technology.swf>

10. Yields Products, Goals:
 A. Student YouTube Products

Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW9IW8>
 Shuya Xu and Yue Ma (Blog my online Irng): <http://www.youtube.com/watch?v=Im7GQM9rzhc>
 Cesar Dagli (Animal perspectives on course): <http://www.youtube.com/watch?v=cDeTEIdG8Ic>

Time for Commitments:
 Which principle(s) of TEC-VARIETY will you use?

- Tone/Climate
- Encouragement, Feedback
- Curiosity

- Variety
- Autonomy
- Relevance
- Interactive
- Engagement
- Tension
- Yields Products

Framework #3:
From Tinkering to Tottering to
Totally Extreme Learning...

Tinkering

WE WERE REDUCED TO MAKING SHADOW PUPPETS.

THE HANDBOOK OF BLENDED LEARNING

TINKERING

"I'm a Tinker therefore I Tinker!"

tinkering things

Tinker #1. Timeline Tools

(e.g., USA Today, August 26, 2011)

<http://www.usatoday.com/story/national/2011-08-26/Martin-Luther-King-Jr-memorial-in-Washington-A-closer-look/5013670/1?top=34news>

Martin Luther King Jr. Memorial in Washington: A closer look

Tinker #2.

Video Animations and Simulations

fold it!

3D Human Anatomy

Tinker #3.

Tracking the Life of a Scientist

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

Origin of Humans: <http://www.youtube.com/user/tellymonitor#p/u/2/SW9wVEd8cU>

Tellymonitor's Channel: <http://www.youtube.com/user/tellymonitor>

BBC programs omit living cells: <http://www.youtube.com/watch?v=rDnT6C6eY>

Secret Weapons: <http://www.youtube.com/watch?v=EDn-SrpJaJ&list=UJHjic8-ydUg857pE1fSGR&index=6&feature=plcp>

Dinosaurs (Laboratory News, April 1, 2012): <http://www.labnews.co.uk/news/prehistoric-revolution/>

Laboratory News

A prehistoric

Tinker #4. Online Portals

(e.g., Google Art Project)

NBC Nightly News, April 3, 2012

<http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508>

NIGHTLY NEWS

NIGHTLY NEWS

STATE of the Art

Tinker #5.

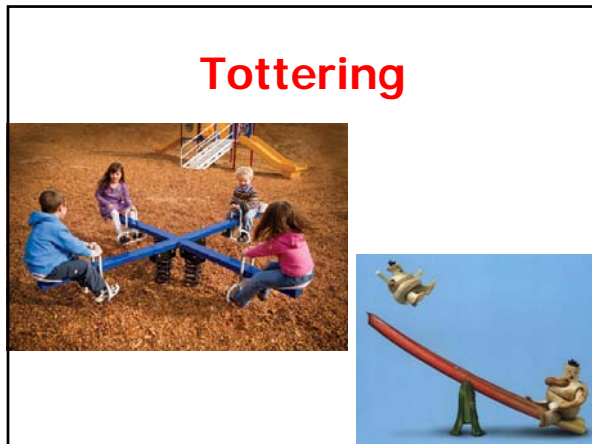
Educational Video Anchors

TED-Ed: <http://education.ted.com/>

TED-Ed

LESSONS WORTH SHARING

TED-Ed Launches on YouTube



Totter #1.

Wikibooks, Wiki-Glossaries, Wiki-Syllabi (Ron Owston, York University, Toronto)

Web 2.0 and Emerging Learning Technologies
From Wikibooks, the open-content textbooks collection

Totter #2. Global Class

Videoconferencing and Remote Lands

RoundSquare (<http://www.roundsquare.org/>) and
Taking it Global (<http://www.tigweb.org/>)

Totter #3. Flip the Class

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

Totter #4.

Student Films and Documentaries

<http://vimeo.com/33090590/> (Verily)
<http://vimeo.com/33123125/> (Anjali)
<http://www.youtube.com/watch?v=1Q7hw73rBw&feature=youtu.be> (Yue)

Totter #5. Student Collaborative Knowledge Building and Sharing

(e.g., Popplet: <http://popplet.com/>)

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/how-apple-campus/index.html?hpt=hp_tech_11

Totally Extreme #1. May 4, 2012
Bendable Displays/Screens
 Flexible displays bend what's possible for computers, Jon Swartz, USA Today
http://mediagallery.usatoday.com/Flexible+screen+displays/G3657_A12064

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.

Totally Extreme #2. May 2012
Robots Teaching English
 Sejong City, South Korea
 The robot assists English teacher & teaches students English, too. The first "Smart School" was a big issue in Korea lately.

Totally Extreme #3. June 24, 2012
Primate Intelligence
 What Was He Thinking? Study Turns to Ape Intellect
 ABC News, SETH BORENSTEIN
<http://abcnews.go.com/Technology/wireStory/thinking-study-turns-ape-intellect-16638414>

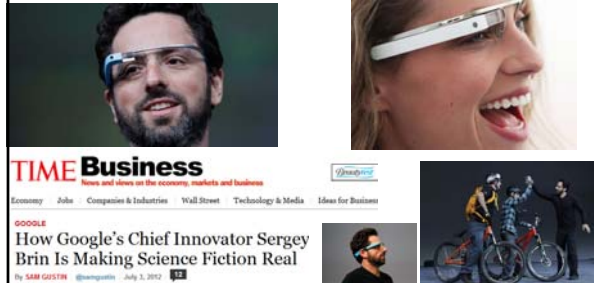
Totally Extreme #4. June 25, 2012
Massive Open Online Courses (MOOCs)
 A Conversation With Bill Gates About the Future of Higher Education, Chronicle of HE, Jeffrey R. Young
http://chronicle.com/article/A-Conversation-With-Bill-Gates/1325917?cid=ak&utm_source=ak&utm_medium=en

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

Q: You have been interested in education for quite a while. I was looking back at your 1993 book, *The Road Ahead*, and you laid out a vision of education and how it could be transformed with technology. It seems like some of that vision is still only just emerging, so many years later. Did it take longer than you thought it would?

Totally Extreme #5. June 26, 2012
AI Learning...from 10 million YouTube Videos
 Google's Artificial Brain Learns to Find Cat Videos, Liat Clarke, Wired
<http://www.technology.com/2012/06/26/google-artificial-brain-watches-youtube-learns-to-see-cats/print/>

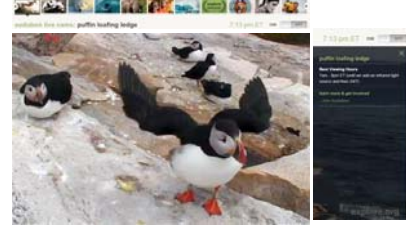
Totally Extreme #6. June 27, 2012 Google Glass ABC News, Google I/O Conference: Project Glass Prototype For Sale



Totally Extreme #7. June 27, 2012 Remote Animal Streaming

Remote Maine puffin colony up close on HD web cam
Clarke Canfield, The Statesman, June 27, 2012

<http://www.statesman.com/business/technology/remote-maine-puffin-colony-up-close-on-hd-2405257.html>



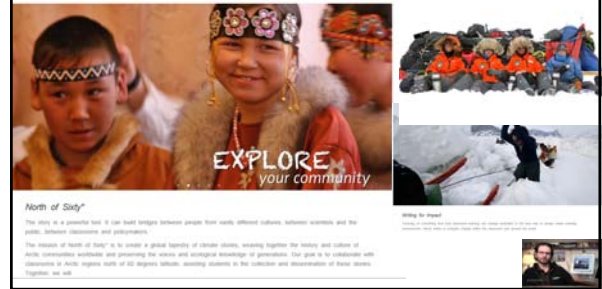
This still frame from streaming online video, provided by explore.org, the Annenberg Foundation and the National Audubon Society, shows puffins on the shore of Seal Island, Maine, Wednesday, June 27, 2012. The island is the habitat for the largest puffin colony in the U.S.

Totally Extreme #8. Live Science (Nautilus Live allows people to watch expeditions live & listen to scientists in control rooms a discoveries made)



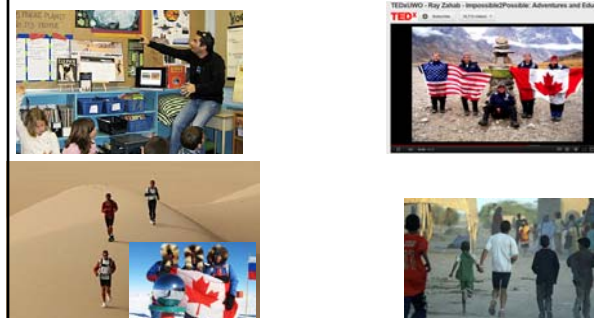
Totally Extreme #9. Adventure Learning about the Environment

(e.g., North of 60, GeoThentic, Earthducation, see Aaron Doering, Chasing Seals; <http://chasingseals.com/>)



Totally Extreme #10. Impossible2Possible

<http://www.apple.com/pro/profiles/impossible2possible/index.html>



Totally Extreme #11. iPod Learning from MIT OCW (e.g., Wendy Ermold, University of Washington)



Totally Extreme #12.
MBA's from War Zones...!

Totally Extreme #13.
Kids Learn Online, Teach Online
(e.g., the World's Youngest Teacher; Adora Svitak)

Totally Extreme #14.
Learning from Localized OER and OCW
(e.g., Opensource Opencourseware Prototype System (OOPS), Lucifer Chu, Janitor of OOPS)

The Biggest OCW Localization Volunteer Group in the World

Totally Extreme #15. The Last Ocean Project, Ice Stories, and Shark Theater
(24 foot inflatable screen (and outdoor ocean theater) to tiny island communities) <http://www.lastocean.com/> and <http://lastocean-project.org/>; Cassandra Brooks

Totally Extreme #16.
Telepresence, Virtual Presenters, and Teleportec Systems (e.g., Cisco and HP)

Totally Extreme #17.
Online Language Learning and Conversations
(e.g., PalTalk, iTalki, Palabea, Babbel)

Totally Extreme #18. Virtual Mentoring
 South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN, January 14, 2011
<http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2>

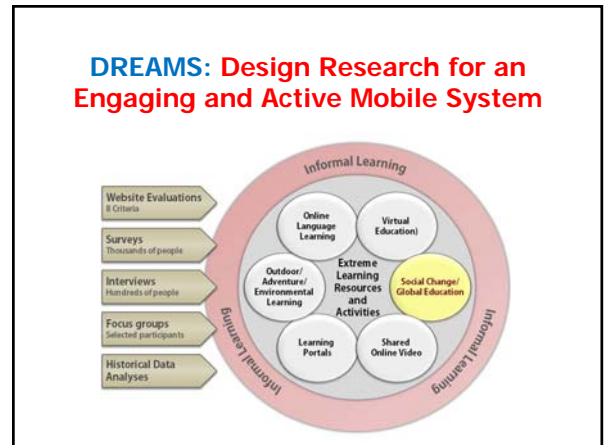
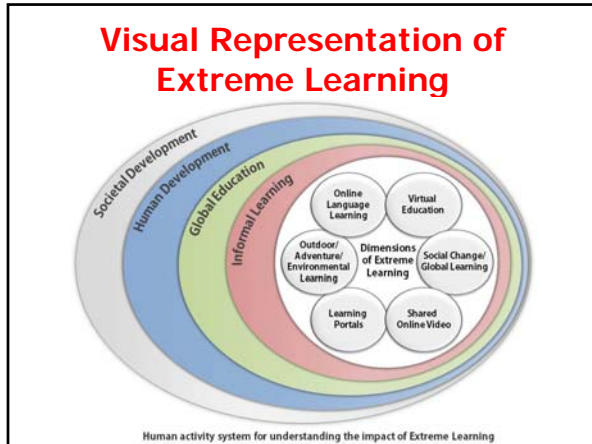
Totally Extreme #19. June 3, 2012
Tutor/Mentor Connection (Chicago)
<http://www.tutormentorprogramlocator.net/InteractiveMap.aspx>

Totally Extreme #20. May 8, 2012
 "Project Re: Brief | Coca-Cola | Mobile Ad Demo"
<http://www.youtube.com/watch?v=45Z-GevoYB8&feature=relmfu>

Totally Extreme #21. February 2012
Pocket School and SMILE: Stanford Mobile Inquiry-based Learning Environment

Extreme Learning Stories
 Mobile Storytelling and Pocket Schools
 (e.g., Paul Kim, Stanford & Seeds for Empowerment)

Extreme Learning Website
www.extreme-learning.com



Any Questions? Try the R2D2 Model! Try TEC-VARIETY too...

Slides at: TrainingShare.com
Papers: PublicationShare.com
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