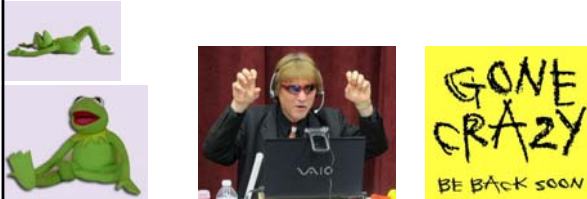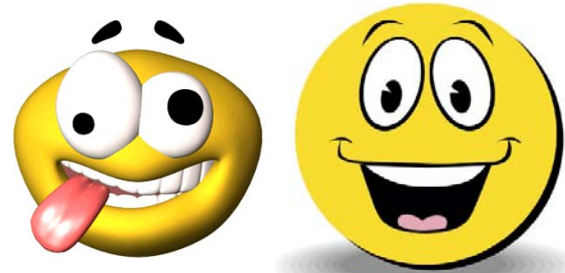**Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning**

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

I'm Happy...Are you Happy?

**New Technologies =
New Delivery Methods...**
CLO, September 2011

Learning Delivery

Sydney Centre for Innovation in Learning
http://www.scil.nsw.edu.au/

Saltire Centre
(Glasgow Caledonian University;
http://www.gcu.ac.uk/thesaltirecentre/)

Remaking the College Library, Bridget McCrea,
09/01/10, Campus Technology
Virtual Tour of Bedford Library-UK
http://www.youtube.com/watch?v=klouRhl_VpA

7 Tips for Building Collaborative
Learning Spaces, Campus Technology,
Matt Villano, June 2010

August 5, 2010
Remaking the College Campus,
Bridget McCrea, Campus Technology
http://campustechnology.com/Articles/2010/08/05/Remaking-the-College-Campus.aspx?Page=1

Remaking the College Library, Bridget McCrea,
1/08/09, Campus Technology
New Grand Valley State University Library, Michigan
http://www.youtube.com/watch?v=SbuDPopJxq0

Baker College of Muskegon,
Michigan
http://www.mlive.com/news/muskegon/index.ssf/2011/12/baker_college_of_muskegon_aimi.html

Stanford Design School
January 18, 2012

University of Minnesota
Active Learning Classrooms (ALC)

Ohio State Library
http://www.youtube.com/watch?v=ak7FEQjxqBY

IMU Student Technology
Center – Collaborative Space

Union Street Center
"Collaborative Café"

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

Change not possible as an accountant...
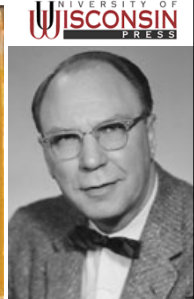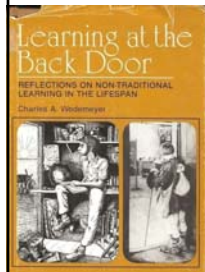(Life as a CPA, 1981-1986)

Property of Museum of History & Industry, Seattle

Decided to Read, Read, Read...
(e.g., People like Albert Bandura, Howard Gardner, Roger Schank, Elliot Soloway, etc.)

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

Learning at the Back Door
REFLECTIONS ON NON-TRADITIONAL LEARNING IN THE LIFESPAN
Charles A. Wedemeyer

UNIVERSITY OF WISCONSIN PRESS

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 more social and collaborative

The Next 30 Years, USA Today, August 23, 2012
http://www.usatoday.com/video/news/1839139560001

Sebastian Thrun
Stanford University Professor, Google VP

The next 30 years

Daphne Koller: What we're learning from online education, TED Talk, June 2012 (post August, 2012)
http://www.ted.com/talks/daphne_koller_what_we_re_learning_from_online_education.html

Online University For All Balances Big Goals, Expensive Realities, Claudio Sanchez, NPR, August 27, 2012
http://www.npr.org/blogs/alltechconsidered/2012/08/27/160116814/online-university-for-all-balances-big-goals-expensive-realities
Audio: http://www.npr.org/player/v2/mediaPlayer.html?action=1&t=1&islist=false&id=160116814&m=160135003
Students work at the University of the People student computer center in Haiti. Students from 129 countries are currently enrolled with the institution

Naylea Omayra Villanueva Sanchez says her location near the Amazon rain forest in Peru, combined with a disability, makes a traditional university education impossible.

How online courses will revoluntionize college, Mary Beth Marklein, USA TODAY, September 12, 2012
http://www.wtsp.com/news/article/273243/81/How-online-courses-will-revoluntionize-college

Seven ways mobile phones have changed lives in Africa, CNN, Stephanie Busari, September 14, 2012
http://www.cnn.com/2012/09/13/world/africa/mobile-phones-change-africa/index.html?lid=article_sidebar

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

Joe Alfonso, a financial adviser from Oregon, is taking the online finance course as a "refresher."

4 Massive Open Online Courses and How They Work, Ben Gose, October 1, 2012, 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 15, 2012
Designing a New Learning Environment,
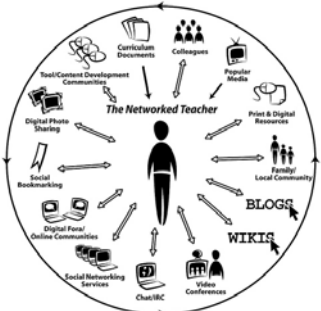**Stanford Online, Dr. Paul Kim**
http://venture-lab.org/education

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

The Web of Learning

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

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

Web Searching in the World of e-Books
E-Learning and Blended Learning
= = = = = = == = = = = = = = = = = = = = = =
Availability of Open Source and Free Software
Leveraged Resources and OpenCourseWare
Learning Object Repositories and Portals
= =
Learner Participation in Open Info Communities
Electronic Collaboration and Interaction
Alternate Reality Learning (e.g., MMOG, Second Life)
Real-Time Mobility and Portability (e.g., iPhone)
Networks of Personalized Learning (Blogs, RSS)

Audience Participation!
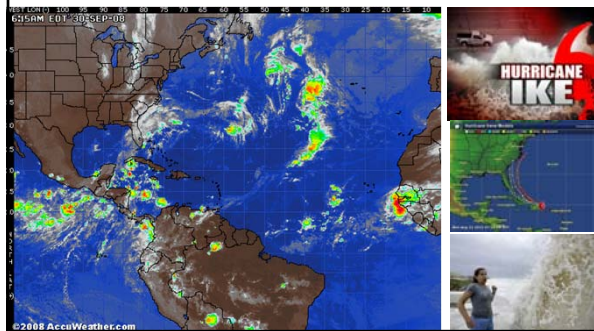
1. WE

2. ALL
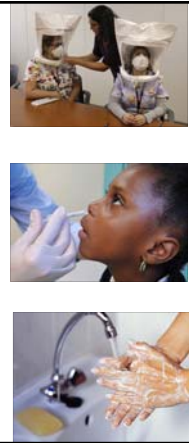
3. LEARN!!!

My dog is content….

I am not Content!!!

Who needs online and blended learning?
(Katrina, August 2005; Ike, Sept 2008; Irene, August 2011; Isaac, August 2012)

Those where there are diseases and outbreaks…(SARS, 2003; H1N1, 2009-2010)

Those in blizzards and ice storms…

Shovelware

May 24, 2010
Author Nicholas Carr, The Web Shatters
Focus, Rewires Brains, Wired
http://www.wired.com/magazine/2010/05/ff_nicholas_carr/

The Crisis in Higher Education, Nicholas Carr,
Technology Review, September 27, 2012
http://www.technologyreview.com/featured-story/429376/the-crisis-in-higher-education/

The Crisis in Higher Education, Nicholas Carr,
Technology Review, September 27, 2012
http://www.technologyreview.com/featured-story/429376/the-crisis-in-higher-education/

Data from Institute of Education Sciences and Pew Research Center.

September/October, 2012
The Siege of Academy,
Washington Monthly, Kevin Carey,
http://www.washingtonmonthly.com/magazine/septemberoctober_2012/features/_its_three_oclock_in039373.php?page=all

In defense of my stupidphone, CNN,
Jessica Ravitz, October 6, 2012
http://www.cnn.com/2012/10/05/living/our-mobile-society-stupidphone/index.html?iid=article_sidebar

September 21, 2012
As Online Courses Grow, Sites Offering Unauthorized Academic Help Get More Brazen, Chronicle of Higher Education, Alisha Azevedo
http://chronicle.com/blogs/wiredcampus/as-online-courses-grow-sites-offering-unauthorized-academic-help-get-more-brazen/40028?sid=pm&utm_source=pm&utm_medium=en

---

How can technology address diverse learner needs?

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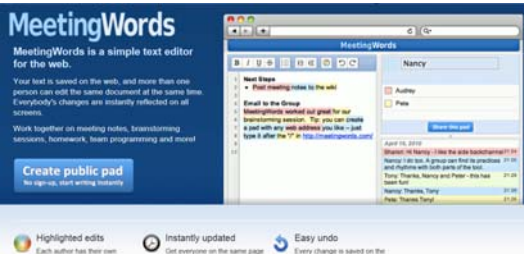
Reflect 2a. Discuss Videos
(e.g., Grockit Answers and Vialogues;
https://vialogues.com/)

**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

**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!

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/

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

**Framework #3: TEC-VARIETY for
Online Motivation and Retention**
1. **T**one/Climate: Psych Safety, Comfort, Belonging
2. **E**ncouragement, Feedback: Responsive, Supports
3. **C**uriosity: Surprise, Intrigue, Unknowns
   ...
4. **V**ariety: Novelty, Fun, Fantasy
5. **A**utonomy: Choice: Flexibility, Opportunities
6. **R**elevance: Meaningful, Authentic, Interesting
7. **I**nteractive: Collaborative, Team-Based, Community
8. **E**ngagement: Effort, Involvement, Excitement
9. **T**ension: Challenge, Dissonance, Controversy
10. **Y**ields Products: Goal Driven, Products, Success, Ownership

1. Tone/Climate:
A. Video Course Intros
B. Mood Walls
Yun Yun Chow, Open U Malaysia, Making Art Lessons Come Alive with Web 2.0
http://www.youtube.com/watch?v=BO9rgJD1GXo
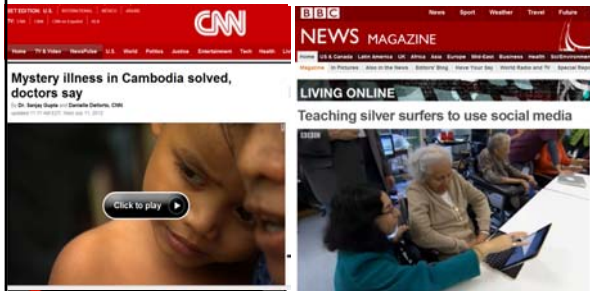http://www.youtube.com/moodwall_testtube

2. Encouragement, Feedback, etc.:
A. Create Screencasts Website Polling
B. GrammarCheck.net
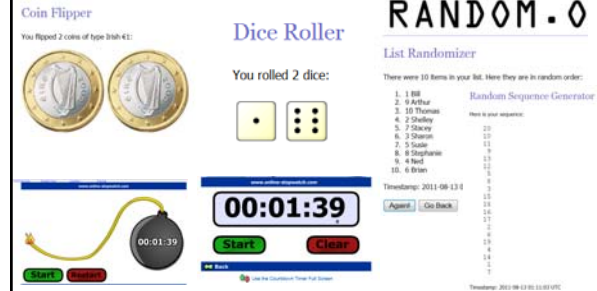**(e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)**
http://www.polleverywhere.com/

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.)

5. Autonomy, Choice:
A. 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/
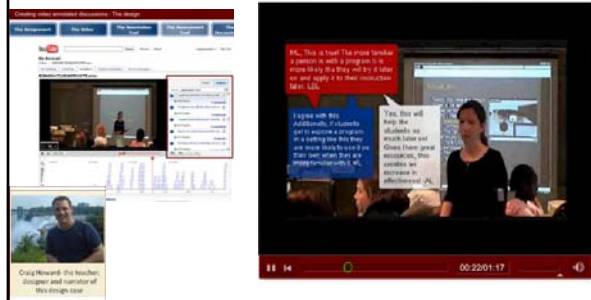10. Timeless Hemmingway: http://www.timelesshemingway.com/

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/ijdl/article/view/853/912

---

8. Engagement, Effort:
A. CNN (2011). Map: Impact of Japan tsunami and earthquake. *CNN*.
http://www.cnn.com/SPECIALS/2011/japan.quake/map/
also: Visualizing Emancipation

---

9. Tension, Challenge, etc.:
A. Game Show Final Project,
April 25, 2011, Kim Seeber
Website: http://mypage.iu.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=8cmCFWi9IW8
Shuya Xu and Yue Ma (Blog my online lrng): http://www.youtube.com/watch?v=im7GQM9fzhc
Cesur Dagli (Animal perspectives on course): http://www.youtube.com/watch?v=cDeTEIdO5lc

---

10. Yields Products, Goals:
B. I Done This, Milestone Planner, 43 Things

Time for Commitments:
Which principle(s) of TEC-VARIETY will you use?
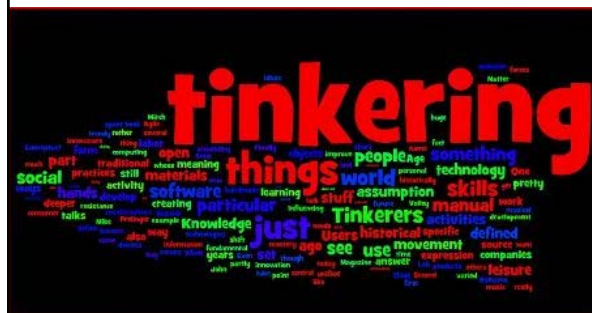
Tone/Climate
Encouragement, Feedback
Curiosity

Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products

From Tinkering to Tottering to Totally Extreme Learning...

Tinkering

Tinker #1. Online Art
**Google Art Project,
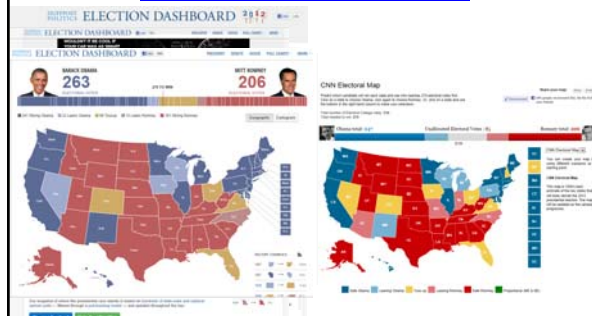NBC Nightly News, April 3, 2012**
http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508

Tinker #2. Predict outcomes (June 26, 2012)
(e.g., Interactive Political Maps: Huffington Post)
http://elections.huffingtonpost.com/2012/romney-vs-obama-electoral-map#cartogram

Tinkering #3.
Tracking the Life of a Scientist
(e.g., Brian J. Ford, independent scientist)
http://www.youtube.com/user/tellymonitor#p/a/u/1/LhGeApsKjasr
http://www.labnews.co.uk/news/prehistoric-revolution/
http://www.youtube.com/embed/kjmNnRFHCzk?rel=0

Tinker #4.
Using Online Encyclopedias
**(e.g, the Encyclopedia of Earth:
http://www.eoearth.org/)**
http://en.wikipedia.org/wiki/Encyclopedia_of_Earth

Tinker #5.
Educational Videos: TED-Ed
http://education.ted.com/

Tinker #6. 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

Tottering

Totter #1.
Wikibooks, Wiki-Glossaries, Wiki-Syllabi
(Ron Owston, York University, Toronto)

Totter #2.
Georgetown Learning Initiatives
Soliya Connect
http://cli.georgetown.edu/#soliya

Totter #3. Combining Asynchronous and Synchronous Events (flipping classes)

Totter #4. Uploading Mobile Books
(e.g., BookRix, http://www.bookrix.com/

Totter #5. Lessons on iPad
(e.g., ShowMe: http://www.showme.com/)
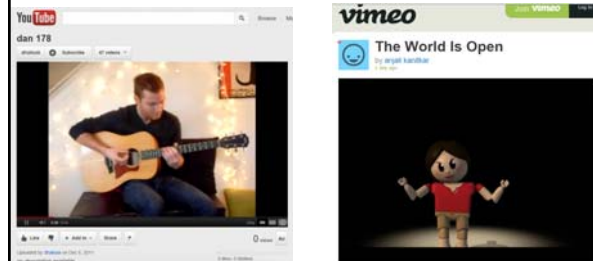
Totter #6. Student Collaborative
Knowledge Building and Sharing
(e.g., Popplet: http://popplet.com/

Totter #7.
Student Films and Documentaries
http://vimeo.com/33090590/ (Verily)
http://vimeo.com/33123125 (Anjali)
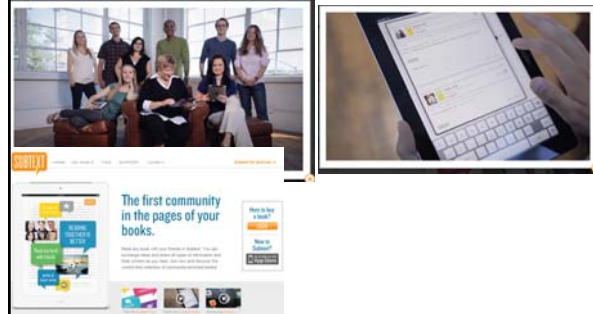http://www.youtube.com/watch?v=IQZHvuZ3rbw&feature=youtu.be (Yue)

Totter 8. Global Class Videoconferencing
and Remote Lands
(e.g., Global Nomads Group, Int'l Studies in Schools (i.e., ISIS);
RoundSquare (http://www.roundsquare.org/) and
Taking it Global (http://www.tigweb.org/)

Totter #9. Social Books
(e.g., Subtext)

We are entering a jumping off point…

You Want Totally Extreme?
Apple's new 'spaceship' campus: What will the neighbors say?, Doug Gross, CNN, May 22, 2012
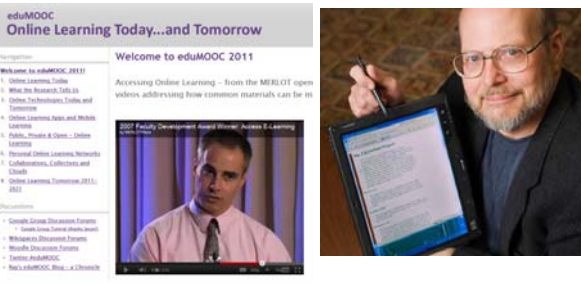http://www.cnn.com/2012/05/22/tech/innovation/new-apple-campus/index.html?hpt=hp_bn11

October 5, 2012
First woman to cross Antarctic solo: I've never felt so alone, Ivana Kottasova, CNN,
http://www.cnn.com/2012/10/05/travel/felicity-aston-antarctic-explorer/index.html?hpt=hp_c1

Totally Extreme #1.
Blogging Field Archeology Research
(e.g., Lily Henry Roberts, UCLA digging in Hope, BC, Stó:lō First Nation people from 12,000 years ago)

Totally Extreme #2. Open Teaching and Massive Open Online Courses (i.e., MOOC, David Wiley, George Siemens, Ray Schroeder)

Totally Extreme #3. June 27, 2012
Google Glass
ABC News, Google I/O Conference: Project Glass Prototype For Sale
http://abcnews.go.com/Technology/google-project-glass-prototypes-offered-google-io-conference/story?id=16663176
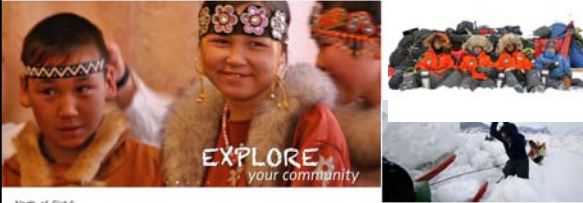
Totally Extreme #4. June 27, 2012
Remote Animal Streaming
Remote Maine puffin colony up close on HD web cam
Clarke Canfield, The Stateman, June 27, 2012
http://www.statesman.com/business/technology/remote-maine-puffin-colony-up-close-on-hd-2405257.html

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 #5. Adventure
Learning about the Environment
(e.g., North of 60, GeoThentic, Earthducation, see Aaron Doering, Chasing Seals; http://chasingseals.com/)

Michael Perham
(Sept 17, 2012)
http://www.mikeperham.tv/
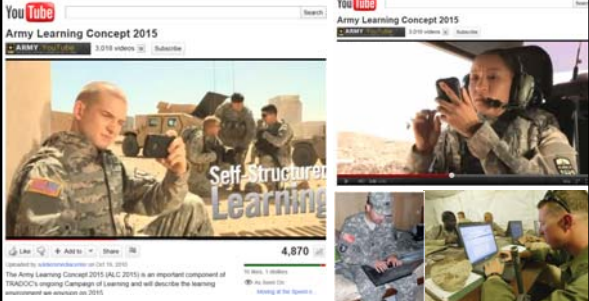
Totally Extreme #6.
iPod Learning from MIT OCW
(e.g., Wendy Ermold, University of Washington)

Totally Extreme #7.
MBAs from War Zones...!

Totally Extreme #8.
Kids Learn Online, Teach Online
(e.g., the World's Youngest Teacher; Adora Svitak)

Totally Extreme #9. 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
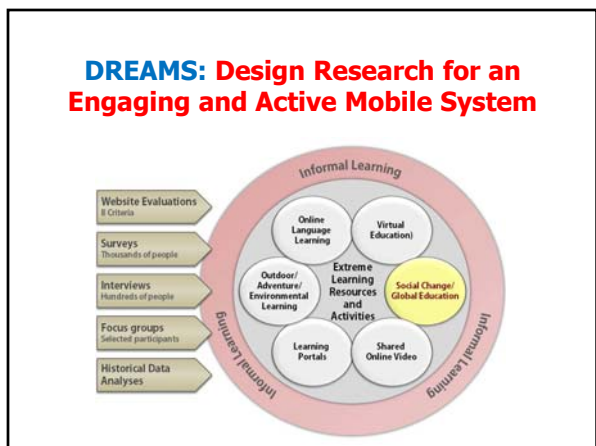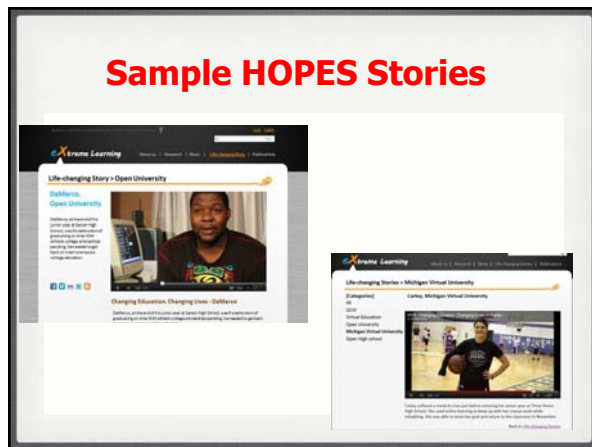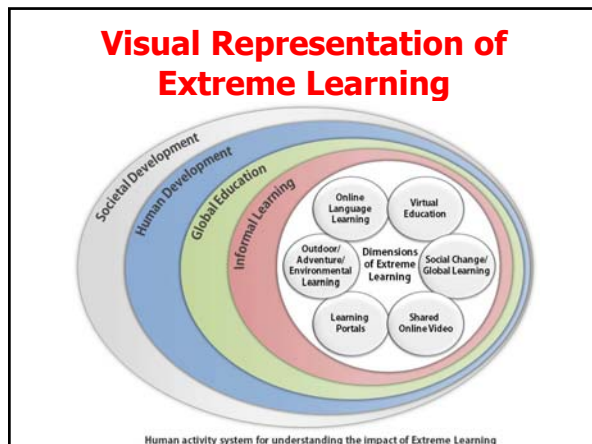

Totally Extreme #10.
Online Language Learning and Conversations
(e.g., PalTalk, iTalki, OpenLanguage, Babbel)

Totally Extreme #11. 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 #12. Pocket School in Developing World (Paul Kim, Stanford and Seeds for Empowerment in Rwanda, India, Mexico, Tanzania, etc.)

February 2012
SMILE: Stanford Mobile Inquiry-based Learning Environment

February 2012
Seeds for Empowerment, Tanzania
Getting Juice for Technology (generator)

Extreme Learning Website
www.extreme-learning.com

Visual Representation of Extreme Learning

Human activity system for understanding the impact of Extreme Learning

HOPES: Humanity's Open Platform for the Exchange of Stories

Sample HOPES Stories

DREAMS: Design Research for an Engaging and Active Mobile System

Extreme Learning "Stretches the Edges" of Humanity

Humanity   Open Culture

Document, Catalog, Grasp, Connect, Inspire Others

What 3 things did you learn?

What are your Extreme Learning HOPES and DREAMS?
Website: www.Extreme-Learning.com
Slides at: TrainingShare.com
Book: http://worldisopen.com/
Dr. Curt Bonk – CJBonk@Indiana.edu