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

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

Sept. 2011 (CLO): Learning is More Tech-Driven
**New Technologies =
New Delivery Methods…**

Learning Delivery
How Do You Deliver Learning?

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

	Beijing 2008	London 2012
Smartphones	139.3 million	657 million
Facebook	90 million	901 million
Twitter	<1 million	300 million
Tweets / day	1.1 million	140 million
Tablets	0	54.8 million
App store downloads	300+ million	25+ billion

Sources: Nielsen, eMarketer, Forrester, Apple

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

Mobile is the single most pervasive technology *ever* invented
Putting Global Mobile in Context

Learning is More Social

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

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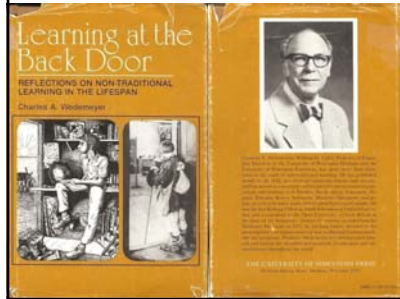**(Life as a CPA, 1981-1986)**

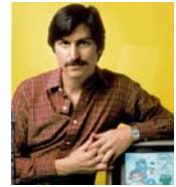Property of Museum of History & Industry, Seattle

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)

Looking to the Past...

Technology of the 1980s

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

April 12, 2011: Learning is More Free
NCTM Conference, Free Online Degrees;
Integration of Science, Mathematics, and Reflective Teaching (iSMART)
University of Houston

You see the big picture. You find the connections.
Make it official - become iSMART.

Jen Chauvot and Mimi Lee, Univ of Houston

June 2011: Learning is More Collaborative
Aces of Spaces, Campus Technology, Jennifer Demski

Aug 22, 2011: Learning is More Inclusive
Worldreader: What Makes Ed Tech Successful in the Developing World?, ReadWriteWeb, David Risher
http://www.readwriteweb.com/archives/what_makes_educational_technology_successful_in_th.php
http://www.worldreader.org/

February 18, 2002
Talking Dictionaries for Rare Languages
The Wall Street Journal
http://online.wsj.com/article/SB10001424052970204880404577228982976760026.html#articleTabs%3Dvideo

Talking the Talk, for Posterity
Oral Online Dictionaries Help Preserve Languages, Cultures Muted by Modernity

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Talking the Talk, for Posterity
Oral Online Dictionaries Help Preserve Languages,
Cultures Muted by Modernity, The Wall Street Journal,
February 18, 2002
http://online.wsj.com/article/SB10001424052970204880404577228982976760026.html#articleTabs%3Dinteractive

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Feb. 21, 2012: Learning is More Flipped
Rethinking Learning with Salman Khan
Stanford Graduate School of Business
http://www.youtube.com/watch?v=W-vj6BhQa5w
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

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

May, 2012
**Robots teaching English and Virtual Worlds
Dr. Meeyong Kim, Dajeon, Korea**

May 4, 2012
**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.
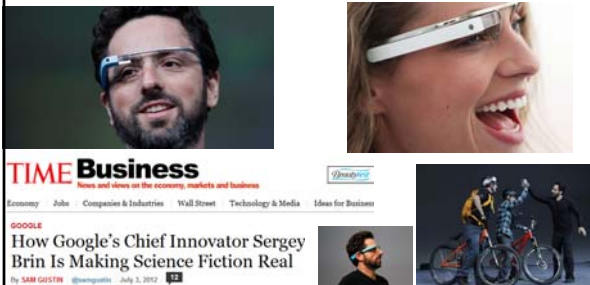
May 5, 2012
Shaq earns doctorate degree
http://www.youtube.com/watch?v=Szj6uQnBdjo
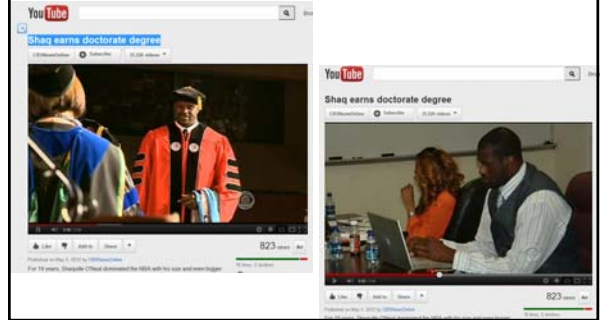
June 27, 2012. Google Glass.
ABC News, Google I/O Conference: Project Glass Prototype For Sale
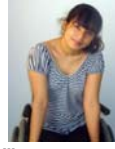http://abcnews.go.com/Technology/google-project-glass-prototypes-offered-google-io-conference/story?id=16663126

August 17, 2012: Learning is More Online
NFL gets serious about fan conduct (disruptive fans must take online courses), ESPN.com, Darren Rovell,
http://espn.go.com/nfl/story/_/id/8278886/nfl-require-ejected-fans-take-online-fan-conduct-course

August 27, 2012
Online University For All Balances Big Goals, Expensive Realities, Claudio Sanchez, NPR

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

Online University For All Balances Big Goals, Expensive Realities

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

Sept 18, 2012. User-Designed E-Books.
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_t3

October 19, 2012
Facebook to help overhaul ICT curriculum, Money, Andrew Marszal, Telegraph

http://www.telegraph.co.uk/education/educationnews/9619725/Facebook-to-help-overhaul-ICT-curriculum.html
(Facebook reached 1 billion users, Oct 4, 2012, CNN Money)
http://money.cnn.com/2012/10/04/technology/facebook-billion-users/index.html?hpt=hp_bn5

January 7, 2013
Digital Globes Offer a Dynamic Vision, New York Times, Mark Vanhoenacker

http://www.nytimes.com/2013/01/08/science/digital-globes-a-new-way-to-view-the-world.html?nl=todaysheadlines&emc=edit_th_20130108&_r=0

Digital Globes Offer a Dynamic Vision

January 10, 2013
iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman

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

iPotty Aims To Entertain Toddlers During Toilet Training

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

The Web of Learning

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

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!!!

January 16, 2013
Carmen Ortiz and Stephen Heymann: accountability for prosecutorial abuse
Glenn Greenwald, The Guardian
http://www.guardian.co.uk/commentisfree/2013/jan/16/ortiz-heymann-swartz-accountability-abuse

Who needs online and blended learning?
(Katrina, August 2005; Ike, Sept 2008; Irene, August 2011; Isaac & Sandy, August 2012)
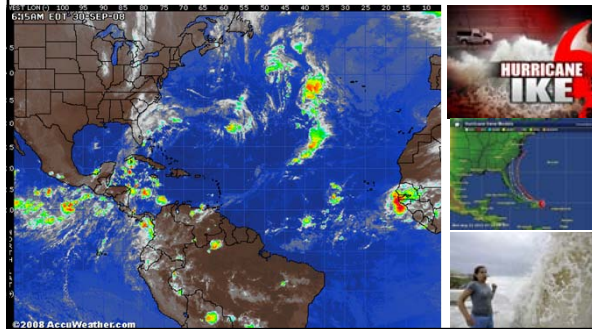
May 24, 2010
Author Nicholas Carr, The Web Shatters Focus, Rewires Brains, Wired
http://www.wired.com/magazine/2010/05/ff_nicholas_carr/
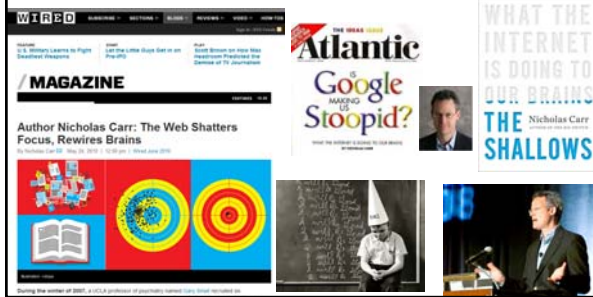
September 21, 2012
As Online Courses Grow, Sites Offering Unauthorized Academic Help Get More Brazen, Chronicle of Higher Education, Alisha Azevedo
http://chronicle.com/blogs/wiredcampus/as-online-courses-grow-sites-offering-unauthorized-academic-help-get-more-brazen/40302?cid=wc&utm_source=wc&utm_medium=en

We are entering a jumping off point...

From Tinkering to Tottering to Totally Extreme Learning...
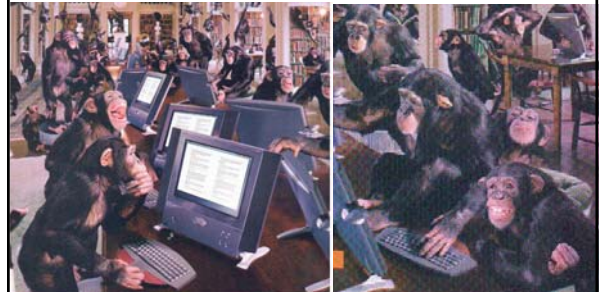
10 Tinkering Ideas
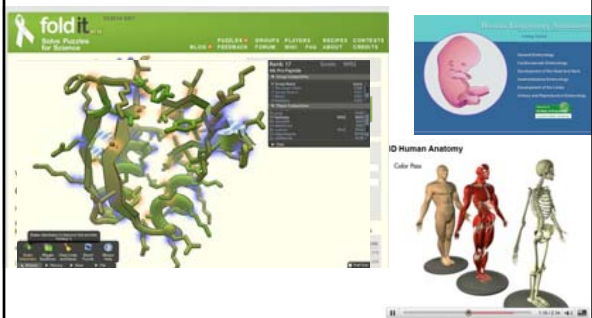
TINKERING

"I'm a thinker therefore I tinker!"

Tinker #1. Timeline Tools
(e.g., MLK Memorial Timeline)
http://www.usatoday.com/news/destinations/story/2011-08-25/Martin-Luther-King-Jr-Memorial-in-Washington-A-closer-look/50136470/1?csp=34news

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

Tinker #2. Video Animations and Simulations

Tinker #3. Case Learning and Role Play (Kelley Direct, IU)

KELLEY SCHOOL OF BUSINESS
INDIANA UNIVERSITY
IUPUI
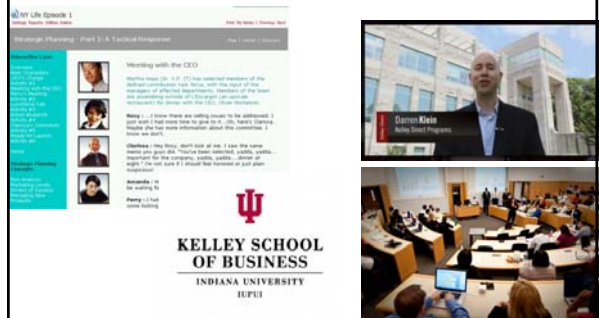
Tinker #4. Online Experiments
(e.g., psychology)

Tinkering #5.
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 #6. Online Portals of Rich Data
United Nations Opens World Digital Library, Turning
the Pages from the British Library, etc. (history,
culture, literature, writing, art, etc.)
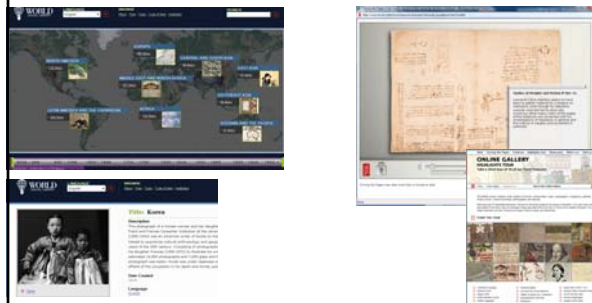
Tinker #7. Online Art
Google Art Project,
NBC Nightly News, April 3, 2012
http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508

Tinker #8.
Using Online Encyclopedias
(e.g, the Encyclopedia of Earth:
http://www.eoearth.org/)
http://en.wikipedia.org/wiki/Encyclopedia_of_Earth

Tinker #9.
Educational Videos: TED-Ed
http://education.ted.com/

Tinker #10. **Timelines with Oral Histories, Slavery and the Making of America Time and Place**
http://www.pbs.org/wnet/slavery/timeline/1857.html

10 Tottering Ideas

Totter #1. **Bridges to World of Expert and Practitioners**
(e.g., Invite, Watch, or Listen to Online Conferences, Expert interviews, blogs, chats, etc.)

Totter 2. **Global Class Videoconferencing and Remote Lands**
RoundSquare (http://www.roundsquare.org/) and Taking it Global (http://www.tigweb.org/)

Totter #3. **Combining Asynchronous and Synchronous Events**

Totter #4. **Video Blogging**
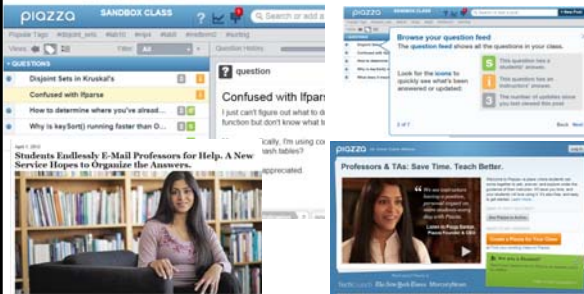
Totter #5. Uploading Mobile Books
(e.g., BookRix, http://www.bookrix.com/

Totter #6. Crowdsourced Q&A
April 1, 2012, Piazza: https://piazza.com/

Totter #7. Lessons on iPad
(e.g., ShowMe: http://www.showme.com/)

Totter #8. Student Collaborative
Knowledge Building and Sharing
(e.g., Popplet: http://popplet.com/
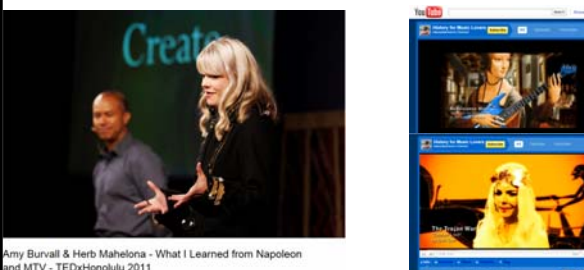
Totter #9. Using Google
Hangouts for Class
(January 2013)

Totter #10.
Shared Online History Videos
(e.g., "History for Music Lovers" with over 50 songs including:
Trojan War "Tainted Love" by Soft Cell; Charlemagne "Call Me"
by Blondie, Cleopatra, Napoleon, Shakespeare, the Vikings)

We are entering a jumping off point...

Totally Extreme Learning...

Visual Representation of the Dimensions and Impact of Extreme Learning
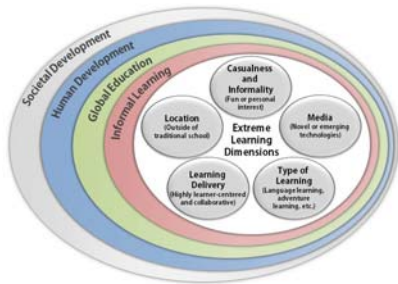
You Want Totally Extreme?

**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

Totally Extreme #1. 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
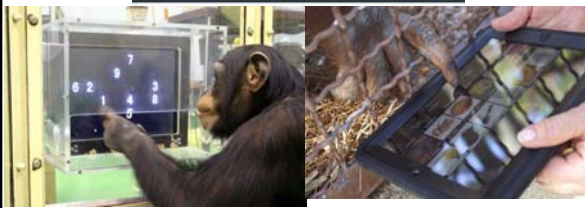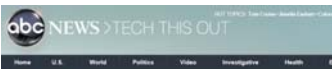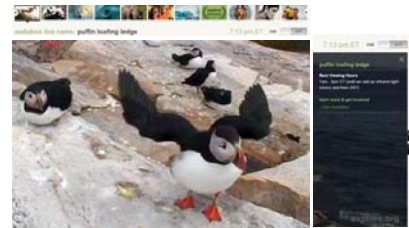

Totally Extreme #2. June 27, 2012
Remote Animal Streaming
Remote Maine puffin colony up close on HD web cam
Clarke Canfield, The Stateman, June 27, 2012
http://www.statesman.com/business/technology/remote-maine-puffin-colony-up-close-on-hd-2405257.html

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

Totally Extreme #4. Adventure
Learning about the Environment
(e.g., North of 60, GeoThentic, Earthducation, see
Aaron Doering, Chasing Seals; http://chasingseals.com/)

Totally Extreme #5.
Impossible2Possible
http://impossible2possible.com/home

Totally Extreme #6.
Michael Perham (Sept 17, 2012)
http://www.mikeperham.tv/

Totally Extreme #7.
iPod Learning from MIT OCW
(e.g., Wendy Ermold, University of Washington)

Totally Extreme #8.
MBAs from War Zones...!

Totally Extreme #9.
Kids Learn Online, Teach Online
(e.g., the World's Youngest Teacher; Adora Svitak)
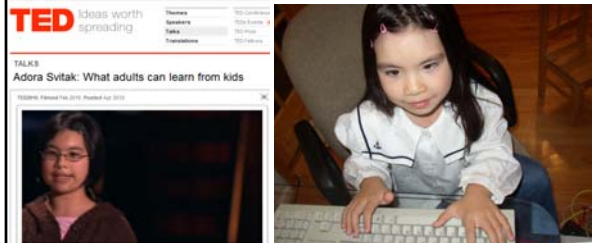
Totally Extreme #10.
An 80-Year-Old Graduate With an Online Marketing Degree Kept His Promise, The Texas Tribune, December 9, 2012
http://www.nytimes.com/2012/11/30/us/80-year-old-graduate-of-wgu-texas-kept-his-promise.html?ref=education&_r=0

Totally Extreme #11.
Learning from Localized OER and OCW
(e.g., Opensource Opencourseware Prototype System (OOPS), Lucifer Chu, Janitor of OOPS)

Totally Extreme #12. **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 #13.
Online Language Learning and Conversations
(e.g., PalTalk, iTalki, OpenLanguage, Babbel)
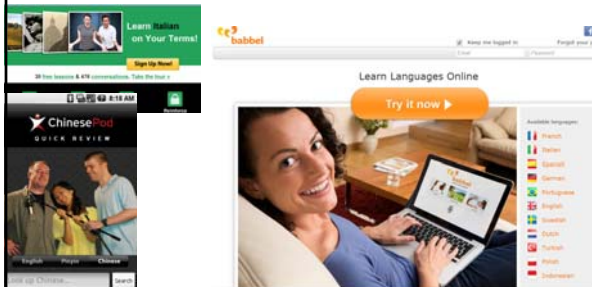
Totally Extreme #14. **Virtual Mentoring**
South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN, January 14, 2011
http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2

Totally Extreme #15. June 3, 2012
Tutor/Mentor Connection (Chicago)
http://www.tutormentorprogramlocator.net/InteractiveMap.aspx

Totally Extreme #16. May 8, 2012
"Project Re: Brief | Coca-Cola | Mobile Ad Demo"
http://www.youtube.com/watch?v=45Z-GevoYB8&feature=relmfu

Totally Extreme #17. February 2012
Pocket School and SMILE: Stanford Mobile Inquiry-based Learning Environment

February 2012
Seeds for Empowerment, Tanzania (Alex Bonk and the kids...)

December 26, 2012
**Paul Kim, SMILE project, Thailand,
SMILE Running on Thai government's OTPC
(One Tablet Per Child).**

These first graders are creating their own math and Thai language questions to share with their peers. All students solve the peer-generated questions and rate them. All questions and answers are analyzed in real-time for teachers. Students who came up with the highest ranking questions and those who answered most number of questions correctly were given a candy today! I can see that these first graders use the tablets with ease. We are in Plak Raet, a rural area, public school. Pictures are attached. Going back to more workshops...Paul Kim

Totally Extreme #18. Immediate Science
Ida (a transitional species) *47-Million-Year-Old Fossil the Missing Link?* (May 20, 2009)

15

Totally Extreme #19.
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 #20.
Google Earth Archeology Research
(e.g., 450 sites of interest in Afghanistan found by
David Thomas, La Trobe Univ., Melbourne, Australia)

**Totally Extreme #21. October 5,
2012** (Felicity Aston, UK)
**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 #22. Adventures of
a Teenage Polyglot, New York Times,
March 9, 2012, *John Leland*
http://www.nytimes.com/2012/03/11/nyregion/a-teenage-master-of-languages-finds-online-fellowship.html?_r=1&pagewanted=all

Timothy posts videos of himself speaking several languages on YouTube.

Totally Extreme #23. Lacking Teachers
and Textbooks, India's Schools Turn to Khan
Academy to Survive, New York Times, October
15, 2012, Anupama Chandrasekaran
http://india.blogs.nytimes.com/2012/10/15/lacking-teachers-and-textbooks-indias-schools-turn-to-khan-academy-to-survive/

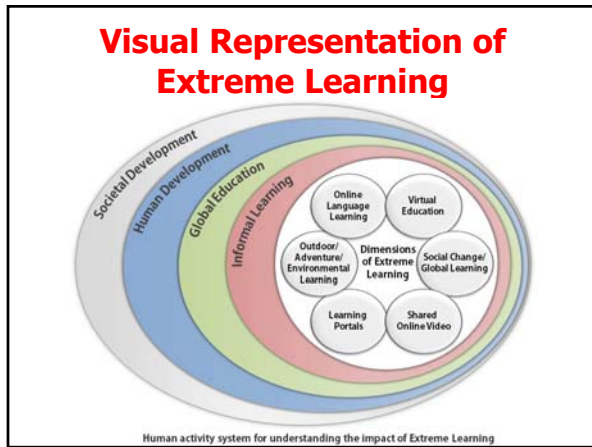The New York Times | International Herald Tribune

Students at Sree Karpagavalli Vidhyalaya school in Chennai, Tamil
Nadu, watching Khan Academy math videos.

Totally Extreme #24.
Virtual High School Learning by Boat
(e.g., Bridey Fennell and her family sailing and
learning in the Caribbean)

Extreme Learning Website
www.extreme-learning.com

Extreme Learning Areas

1. Adventure Learning and environmental education,
2. Virtual Education (formal as well as informal),
3. Social Change and Global Learning,
4. Language Learning,
5. Shared online video,
6. Learning portals.

Visual Representation of Extreme Learning

Human activity system for understanding the impact of Extreme Learning

1. Virtual Education

Open High School of Utah, Khan Academy, Michigan Virtual School

2. Online Language Learning

ChinesePod, LiveMocha, Babbel

3. Portals of OER

OER Commons, Open College Textbooks, WorldBridges.net

4. Social Change and Global Education

SierraClub, Longitude, iCivics

5. Shared Online Video

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TED, CurrentTV, YouTube, Explo.TV, ClipChef, Big Think, etc.

6. Adventure and Environmental Learning

PenguinScience, Impossible2Possible, EARTHduction

"Coolest" Extreme Learning Websites

Categories	Coolest websites	
1. Online Language Learning	Live Mocha BBC Learning English	Englishpod Chinese Pod
2. Virtual Education	MIT OpenCourseWare (OCW) MIT OpenCourseWare (OCW) Highlights for High School Khan Academy Open University UK- OPenLearn Ed Tech talk	John Hopkins OpenCourseWare NASA for Educators Florida Virtual School Smithsonian
3. Social Change/Global Education	iCivics	
4. Adventure/Outdoor Learning	Earth education Jon Bowermaster	Nautilus Live Explore
5. Learning Portals	MERLOT	
6. Shared Online Videos	National Geographic Education Academic Earth Discovery News Video	Wonder How To Videos Explo.tv Link TV

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

Sample HOPES Stories

Web Platform Storytelling System

HOPES Mobile Platform Storytelling Entrance

DREAMS: Design Research for an Engaging and Active Mobile System
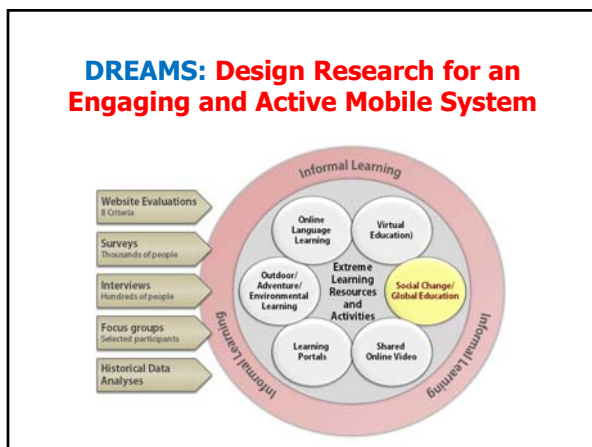
Extreme Learning "Stretches the Edges" of Humanity

Humanity   Open Culture

Document, Catalog, Grasp, Connect, Inspire Others…

What 3 things did you learn?

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