

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

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Audience Poll:

Has learning technology 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.)



Looking to the Past...



Technology of the 1980s





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.

October 12, 2012

Radical rethink: how to design university courses in the online age, Paul, Wappett, The Conversation, Australia

<http://theconversation.edu.au/radical-rethink-how-to-design-university-courses-in-the-online-age-9237>

THE CONVERSATION

TRADITIONAL STUDY MODEL - LINEAR



October 12, 2012

Radical rethink: how to design university courses in the online age, Paul, Wappett, The Conversation, Australia

<http://theconversation.edu.au/radical-rethink-how-to-design-university-courses-in-the-online-age-9237>

THE CONVERSATION

ONLINE STUDY MODEL - DYNAMIC



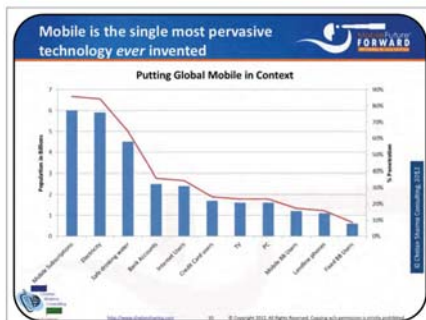
Learning is More Mobile

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

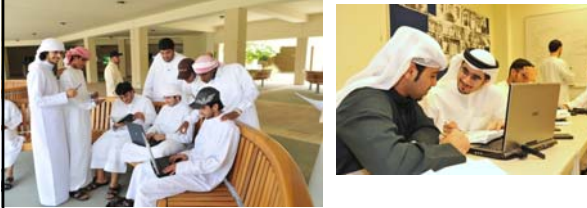
Judy Brown, Keynote talk, "Learning in Hand With Mobile Technology," Wisconsin Distance Teaching and Learning Conference, August 10, 2012



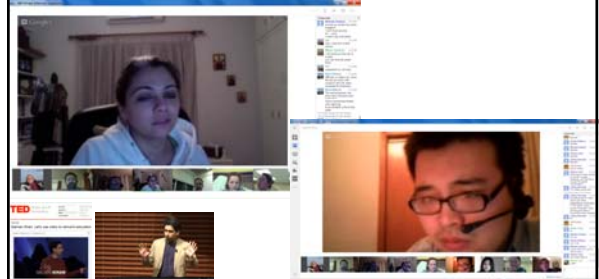
February 13, 2013
Learning is More Collaborative



Learning is More Social



January 29, 2013: Learning is More Flipped Collaboration and Discussion in Google Hangouts



August 17, 2012: Learning is More Online

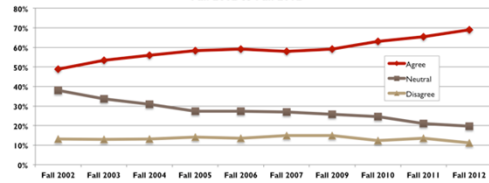
NFL gets serious about fan conduct (disruptive fans must take online courses), ESPN.com, Darren Rovell, http://espn.go.com/nfl/story/_/id/9278886/nfl-require-ejected-fans-take-online-fan-conduct-course



January 8, 2013 Changing Course: Ten Years of Tracking Online Education in the United States

Elaine Allen and Jeff Seaman, Sloan-C & Babson Survey Research Group

Online Education is Critical to the Long-term Strategy of my Institution – Fall 2002 to Fall 2012



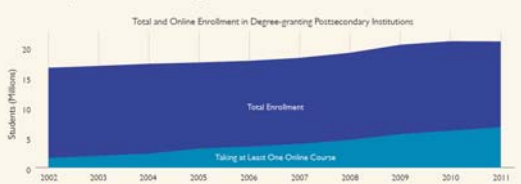
BABSON Survey Research Group

PEARSON SLOAN-C

January 8, 2013 Changing Course: Ten Years of Tracking Online Education in the United States

Elaine Allen and Jeff Seaman, Sloan-C & Babson Survey Research Group

How many students are learning online?



BABSON Survey Research Group

PEARSON SLOAN-C

E-Learning and Blended Learning

(May 5, 2012, Shaq get Ed.D., Barry University)



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-Possibilities/1318727341-at&utm_source=at&utm_medium=em

August 27, 2012

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

<http://www.npr.org/blogs/alltechconsidered/2012/08/27/166116814/online-university-for-all-balances-big-goals-expensive-realities>
Audio: <http://www.npr.org/player/v2/mediaPlayer.html?action=1&t=1&list=1&id=166116814&m=166135003>
Students work at the University of the People student computer center in Haiti. Students from 129 countries are currently enrolled with the institution

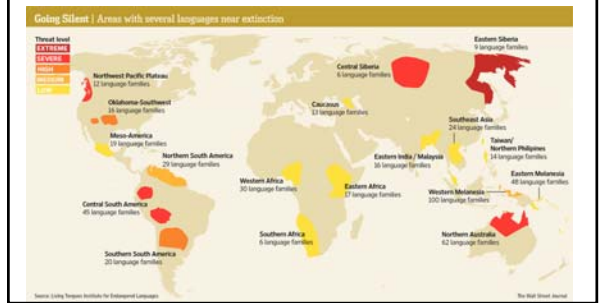
Naylea Omyra Villanueva Sanchez says her location near the Amazon rain forest in Peru, combined with a disability, makes a traditional university education impossible.

February 18, 2002
Talking Dictionaries for Rare Languages
The Wall Street Journal

<http://online.wsj.com/article/SB1000142405297020488040457228982976760026.html?articleTabs%3Dvideo>

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/SB1000142405297020488040457228982976760026.html?articleTabs%3Dinteractive>



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

January 12, 2013:
Learning is Less Open
Internet Activist, a Creator of RSS, Is Dead at 26,
Apparently a Suicide, NY Times, John Schwartz

http://www.nytimes.com/2013/01/12/technology/arnold-walsh-internet-activist-dies-at-26.html?pagewanted=all&_r=1

**Learning is More Tech-Driven
New Technologies =
New Delivery Methods...**



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



**May 4, 2012:
Learning is More Ubiquitous
Flexible displays bend what's possible for computers, Jon Swartz, USA Today**



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.

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

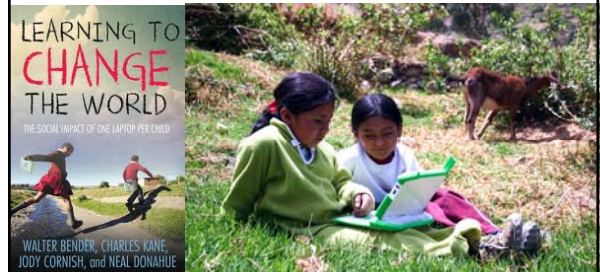


**January 10, 2013:
Learning is More Personal
iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman**

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



**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.**



October 19, 2012

Facebook to help overhaul ICT curriculum, Money, Andrew Marszal, Telegraph

<http://www.ashorath.co.uk/Education/educationnews/2643725/Facebook-to-help-overhaul-ICT-curriculum.html>

<http://money.cnn.com/2012/10/19/technology/facebook-users/>



January 7, 2013

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

http://www.nytimes.com/2013/01/07/science/digital-globes-a-new-way-to-view-the-world.html?_r=1&hp&hpid=hp_hp-top-table-main-science&hpt=hp-top-table-main-science



From Tinkering to Tottering to Totally Extreme Learning...



What did Jean-Luc Picard say?



That's right, Engage!



10 Tinkering Ideas



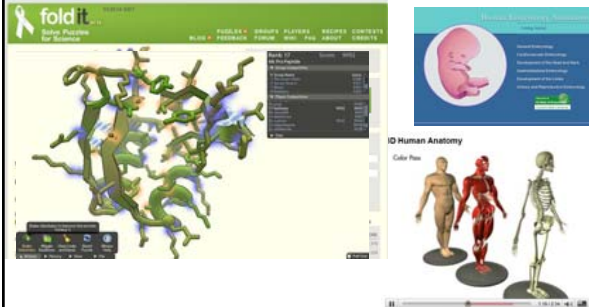
Tinker #1. Timeline Tools (e.g., MLK Memorial Timeline)

<http://www.usatoday.com/news/destinations/story/2011-08-25/Martin-Luther-King-Jr-Memorial-in-Washington-A-closer-look/50136470/1?top=3#news>


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
BUPUI

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/LhGeApsKiasr>
<http://www.labnews.co.uk/news/prehistoric-revolution/>
<http://www.youtube.com/embed/kjmNnRFHCzk?rel=0>

LaboratoryNews

A prehistoric revolution



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.obs.org/wnet/slavery/timeline/1857.html>



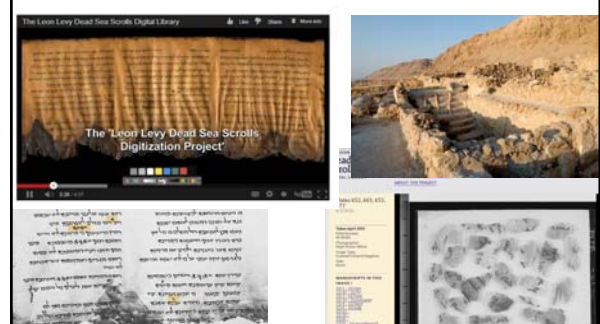
Tinker #11. A. React to Visuals

The happiest and saddest states according to Twitter
Heather Kelly, CNN Tech, February 19, 2013
<http://www.cnn.com/2013/02/19/tech/social-media/twitter-happiness/index.html>



Tinker #12. Unique OER (e.g., Dead Sea Scrolls)

<http://www.deadseascrolls.org.il/explorer-the-ancient>
<http://www.deadseascrolls.org.il/explorer-the-ancient>
<http://www.deadseascrolls.org.il/home>



Tinker #13. Something in the News (e.g., Fauja Singh, 101, finishes last race, February 24, 2013)

http://espn.go.com/sports/endurance/story/_/id/9929487/fauja-singh-101-cape-carer-10k-hong-kong

Fauja Singh, 101, finishes last race

HONG KONG — The world's oldest marathon runner ran his last race on Sunday at the age of 101.

Fauja Singh finished the Hong Kong marathon's 10-kilometer (6.25-mile) race in 1 hour, 32 minutes, 28 seconds.

Singh, a Sikh with a saffron turban and a flowing white beard, followed the route along the northern tip of Hong Kong island.

He was accompanied by a group from the city's local Sikh community, among about 72,000 other runners taking part in the marathon.

The Indian-born runner, nicknamed the "Furthest Frontier," had said that he would hang up his sneakers after the race in the southern Chinese city, just before his 103rd birthday.



Tinker #14. More Interactive Maps Where and Who the College Graduates Are, Chronicle of HE, February 24, 2013

http://chronicle.com/article/WhereWho-the-College/1375517?cid=at&utm_source=at&utm_medium=en

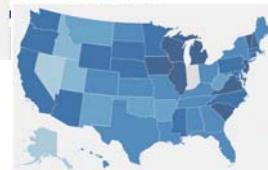
Where and Who the College Graduates Are

The National Bureau of Economic Research tracks each state's college graduates by region, gender, race, and type of school. See rates and scores for more information.



Where and Who the College Graduates Are

The National Bureau of Economic Research tracks each state's college graduates by region, gender, race, and type of school. See rates and scores for more information.



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.)

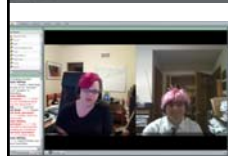


Totter 2. Global Class Videoconferencing and Remote Lands

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



Totter #3. Combining Asynchronous and Synchronous Events



Totter #4. Video Blogging

A screenshot of a YouTube video player. The video title is "World is Open Final Project.mkv". The video thumbnail shows two people sitting at a table. The video player interface includes a search bar, a video player with a play button, and a video description area.

Totter #5. Uploading Mobile Books (e.g., BookRix, <http://www.bookrix.com/>)

A screenshot of the BookRix website. The website header includes the BookRix logo and a navigation menu. Below the header, there is a section titled "Mobile Devices & Learning" with the subtitle "How mobile devices are re-shaping the field of education" by Kate Nelson. To the right of this section is a thumbnail of a digital book page.

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

A screenshot of the Piazza website. The website header includes the Piazza logo and a navigation menu. Below the header, there is a section titled "Confused with Ipan" with a question "How to determine where you've ahead..." and an answer "I just can't figure out what to do function but don't know what it is".

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

A screenshot of the ShowMe website. The website header includes the ShowMe logo and a navigation menu. Below the header, there is a section titled "Solving One Step Equations" with a video thumbnail showing a person holding an iPad displaying a math problem.

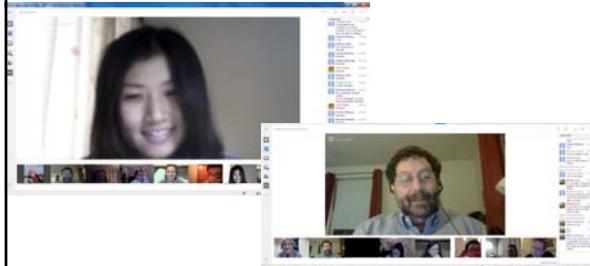
Totter #8. Student Collaborative Knowledge Building and Sharing (e.g., Popplet: <http://popplet.com/>)

A screenshot of the Popplet website. The website header includes the Popplet logo and a navigation menu. Below the header, there is a section titled "What is Popplet?" with a description "Popplet is a platform for your ideas." and a section titled "Check out these Popplets!" with a grid of various Popplet examples.

Totter #9. Using Google Hangouts for Class (January 2013)

A screenshot of a Google Hangout session. The main window shows a teacher speaking. Below the main window, there is a row of smaller windows showing other participants in the Hangout.

Totter #12. Collaboration and Discussion in Google Hangouts (January 29 and February 25, 2013)



Totter #13.

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)



Amy Burvall & Herb Mahelona - What I Learned from Napoleon and MTV - TEDxHonolulu 2011



Totter #14. Wikibook Chapter: Breaking the Mold: An Educational Perspective on Diffusion of Innovation

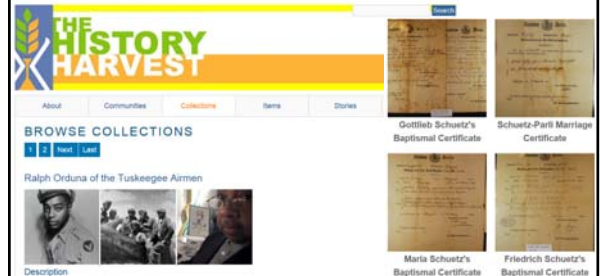
http://en.wikibooks.org/wiki/Breaking_the_Mold:_An_Educational_Perspective_on_Diffusion_of_Innovation



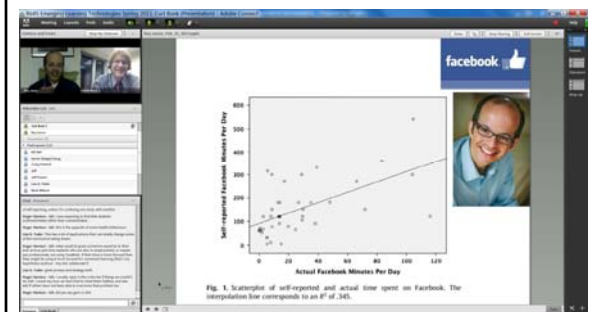
Totter #15. Community Oral Histories

(e.g., The History Harvest)

<http://historyharvest.unl.edu/collections>



Totter #16. Guest Speaker Quotes (Rey Junco, February 25, 2013)



Totter #17. Google Hangouts/Google On Air

(Jay Cross, 10 MOOC experts; February 27, 2013)

<http://www.jaycross.com/wp/2013/02/businessmoocs-the-hangout-recording/>

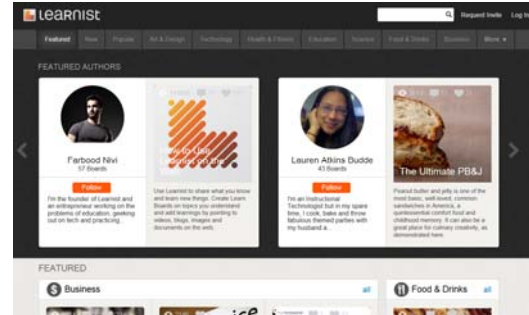


Totter #18. Interactive Stories
(e.g., Meograph
<http://www.meograph.com/>)



Totter #19. Student Expertise
(e.g., Learnist)

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



We are entering a jumping off point...



Totally Extreme Learning...

Cameras stream Canadian polar bear migration

Published: October 28, 2011 10:54 AM
By The Associated Press. MATT VOLZ (Associated Press)



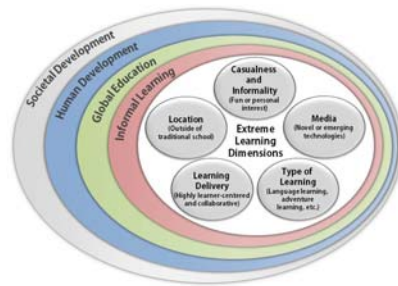
road chose me
100 kms of ebb and flow



February 22, 2013
NASA's spacey Google+ Hangout shows off zero-G antics – and cats!
http://www.nasa.gov/pdf/20130222_1205298main-zero-gravity-hangout-show-off-zero-gravity-and-cats



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_tech_1



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 Statesman, June 27, 2012

<http://www.statesman.com/business/technology/remotecommonpuffincolonyup-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.

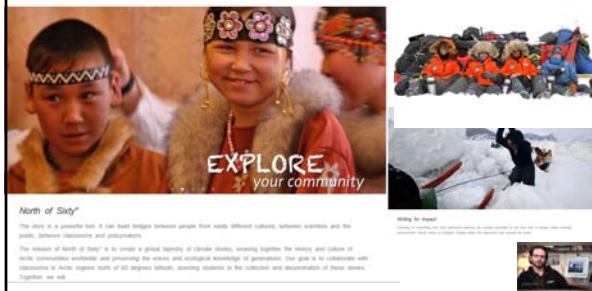
Totally Extreme #3. Live Science

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



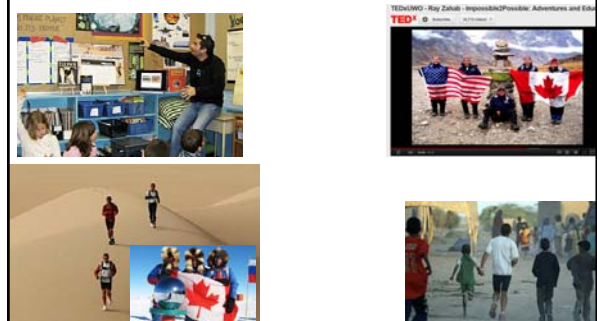
Totally Extreme #4. Adventure Learning about the Environment

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



Totally Extreme #5. Impossible2Possible

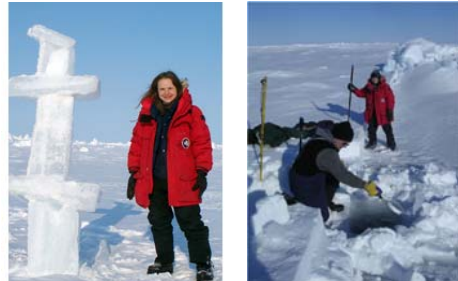
<http://impossible2possible.com/home>



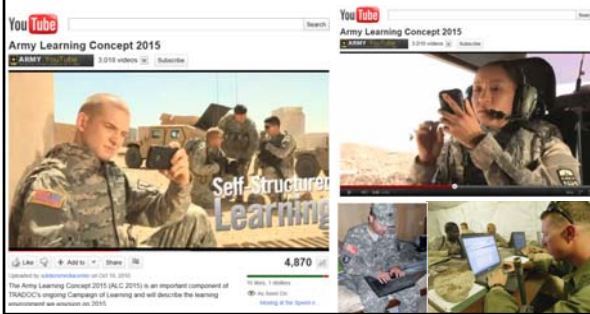
Totally Extreme #6.
Michael Perham (Sept 17, 2012)
<http://www.mikeperham.tv/>



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



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

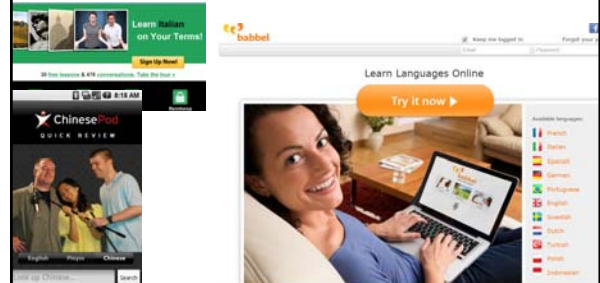
The Biggest OCW Localization Volunteer Group in the World



Totally Extreme #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



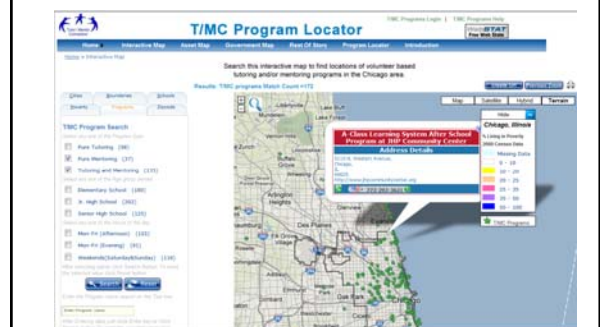
Totally Extreme #13. Online Language Learning and Conversations
 (e.g., PalTalk, iTalki, OpenLanguage, Babbel)



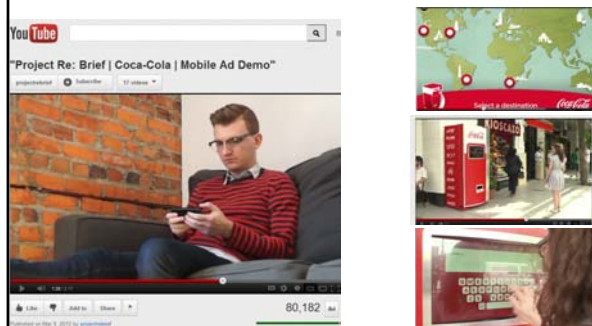
Totally Extreme #14. Virtual Mentoring
 South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN, January 14, 2011
<http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2>



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 Raset, 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)



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)

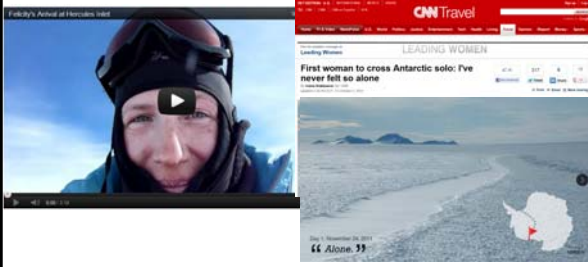


Totally Extreme #20.
Google Earth Archeology Research
 (e.g., 450 sites of interest in Afghanistan found by
 David Thomas, La Trobe Univ., Melbourne, Australia)



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/2012/03/09/us/politics/teenage-polyglot.html?_r=1



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://nytimes.com/2012/10/15/india/schools-lack-teacher-and-textbooks-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

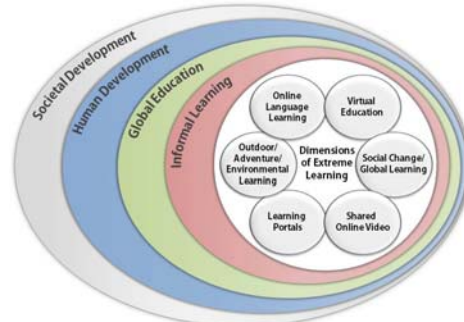
www.extreme-learning.com



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



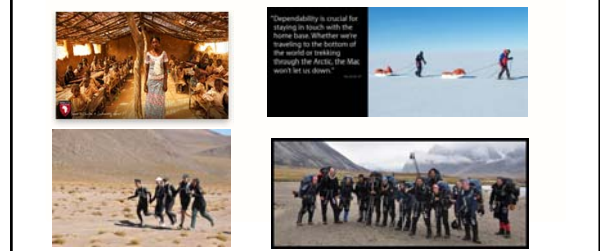
5. Shared Online Video

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



6. Adventure and Environmental Learning

PenguinScience, Impossible2Possible, EARTHducation



"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 iCivics	John Hopkins OpenCourseWare NASA for Educators Florida Virtual School Smithsonian
3. Social Change/Global Education		
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

Students need to know that these things are available.

By: Al Adnan (aladnan)

Click the "Quote" button to add the selected text to "Quotation"

Established in 1962, Ahmadu Bello is Nigeria's largest university, with 35,000 students. Though the university boasts a large and well-maintained physical infrastructure, its Internet access - that of almost all Nigerian universities - is severely limited.

Even the computer lab does not have a Web connection.

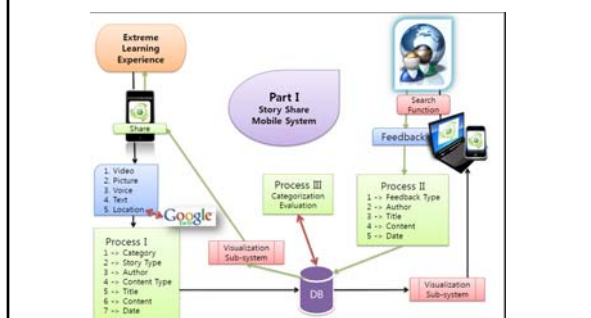
And because of the large number of students and the limited number of terminals, students can sign up for only 20 minutes each week on university computers.

Getting access

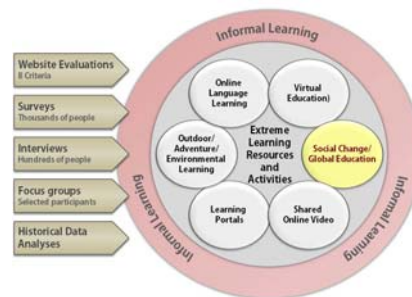
When Adajumo was first introduced to MIT OpenCourseWare through a CD-ROM in the university computer lab he had only 20 minutes to look through the material. Impressed with the content, he saved the computer lab for a copy of the CD, when they were unable to give him one, Adajumo decided to find the site on his own, and copied down the Web address.

From his home computer, he has enjoyed regular access to OER, and has used it to complement the course materials he has gotten through Ahmadu Bello.

HOPES Mobile Platform Storytelling Entrance



DREAMS: Design Research for an Engaging and Active Mobile System



Extreme Learning "Stretches the Edges" of Humanity



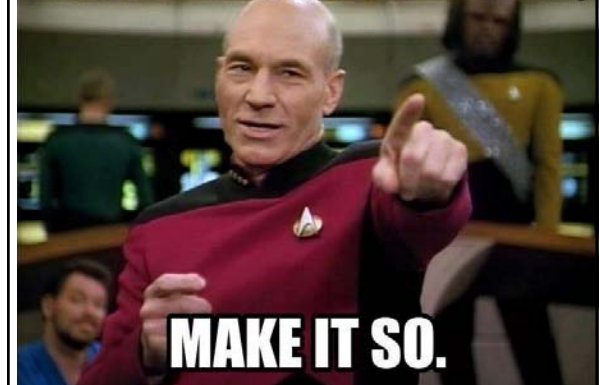
How was the view?



What 3 things did you learn?



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MAKE IT SO.

Questions?

Website: www.Extreme-Learning.com

Slides at: TrainingShare.com

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

Dr. Curt Bonk – CJBonk@Indiana.edu

