

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

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



Learning Delivery

How Do You Deliver Learning?

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



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



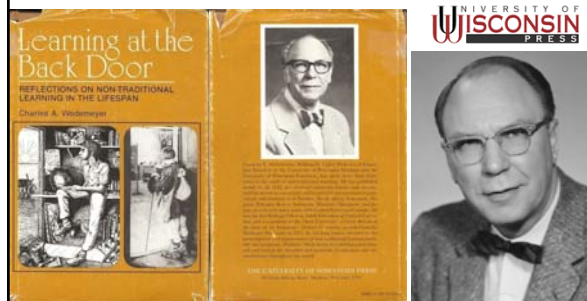
Property of Museum of History & Industry, Seattle




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




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



 **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.


**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

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



Marc Andreessen  
Partner, Andreessen Horowitz, Internet pioneer

The next 30 years

**Course Builder Intro Video, Sept 12, 2012**  
[http://www.youtube.com/watch?feature=player\\_embedded&v=GAY5iCoVnA8](http://www.youtube.com/watch?feature=player_embedded&v=GAY5iCoVnA8)



Course Builder Intro Video


20,804 views

**A world where grades will be left behind, Mary Beth Marklein, USA Today, Sept 14, 2012**  
<http://www.usatoday.com/news/national/story/2012-09-14/a-world-where-grades-dont-exist-and-learning-is-free/97778429/>

**A world where grades will be left behind**

by Mary Beth Marklein, USA TODAY Updated 10:29 am

As USA TODAY celebrates its 30th anniversary, we interviewed some of the USA's greatest visionaries to talk about the world of tomorrow: How we'll live, learn and travel, what we'll do and who we'll be.



PALO ALTO, Calif. — About a mile from the main quad at Stanford University, one of the nation's bastions of exclusive and expensive higher education, a street-level office building across the street from an Olive Garden houses the makings of an up-and-coming contender.

In this version of education, learning will be free and available to anyone who wants it while operating like a whimsical playground: No one is late for class, failure is not an option, and a lesson looks something like Angry Birds, the physics-based puzzle game that has been downloaded more than 1 billion times.

Google VP and professor Sebastian Thrun is photographed at 100kU, his education company in California that is seeking to revolutionize education.

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



Gina Centrello  
President and publisher of Random House Publishing Group

The next 30 years

**Florida Ponders Opening an Online-Only Public University,**  
**Sept 14, 2012, Angela Chen, Chronicle of HE**  
[http://chronicle.com/article/Florida-Ponders-Opening-an/134482/?cid=at&utm\\_source=at&utm\\_medium=en](http://chronicle.com/article/Florida-Ponders-Opening-an/134482/?cid=at&utm_source=at&utm_medium=en)

September 14, 2012  
**Florida Ponders Opening an Online-Only Public University**  
 By Angela Chen

Florida is considering creating a new state university, just months after Gov. Rick Scott defied the university system's board by signing legislation to turn a satellite campus into the state's 12th public university. Under the new proposal, the board itself would oversee the planned 13th university, which would have neither a campus quad nor a football team. The potential campus would be entirely online.

This past July, the system's Board of Governors hired a consulting firm to determine the feasibility of creating "OnlineU."

An online university is not the only option being explored, says Frank T. Brogan, the system's chancellor. The consulting group, Parthenon, will also consider the possibility of building a systemwide "portal" for universities to offer existing online courses to students on other campuses in the system. Such offerings are now available only to students enrolled at the university where the course originates.

**May 5, 2012**  
**Shaq earns doctorate degree**  
<http://www.youtube.com/watch?v=Szj6uQn8djc>

**May 7, 2012**  
**Google+ Hangouts On Air: broadcast your conversation to the world**  
<http://googleblog.blogspot.com/2012/05/google-hangouts-on-air-broadcast-your.html#12012/05/google-hangouts-on-air-broadcast-your.html>

**WE-ALL-LEARN:**  
**Ten Forces that Opened the Learning World**

- W**eb Searching in the World of e-Books
- E**-Learning and Blended Learning
- =====
- A**vailability of Open Source and Free Software
- L**everaged Resources and OpenCourseWare
- L**earning Object Repositories and Portals
- =====
- L**earner Participation in Open Info Communities
- E**lectronic Collaboration and Interaction
- A**lternate Reality Learning (e.g., MMOG, Second Life)
- R**ead-Time Mobility and Portability (e.g., iPhone)
- N**etworks of Personalized Learning (Blogs, RSS)

**Audience Participation!**

**1. WE**

**2. ALL**


**3. LEARN!!!**

**Open Yale Courses:**  
<http://open.yale.edu>


Home

Downloadable Resources

**Khan Academy:**  
<http://www.khanacademy.org>

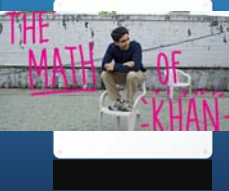


Home





Salman Khan: Math master of Internet

Assessment




THE MATH OF KHAN


**TED: Technology, Entertainment and Design**


**Link TV:** <http://www.linktv.org>



Home



Social News



Synchronous Forums

**GETideas Channel, Cisco (Education Thought Leader Series uploaded to YouTube)**  
<http://www.youtube.com/user/GETideas#q/u>



**CurrentTV**  
**Citizen Generated News**



'Sex, Lies & Cigarettes': Vanguard Trailer

watch more vanguard


**Jon Bowermaster :**  
<http://www.jonbowermaster.com>



Home



Blog



Videos

**Earthducation:** <http://it.umn.edu/earthducation>




Home




Field Update




**Polar Husky:** <http://www.polarhusky.com>



Home



Modules



Forums


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



**February 2012**  
**Seeds for Empowerment, Tanzania**  
**(Paul Kim turning it on!)**



**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 thinker. Therefore I tinker!"

tinkering things

## Tinker #1.

### Cases and Video Scenario Learning (Franklin University, cost and forensic accounting course)

<http://video.franklin.edu/Franklin/acct/managerialAccounting/cost-behavior-player.html>  
<http://video.franklin.edu/Franklin/acct/342/common/fraudScenario02.html>

**Cost Behavior**

**Variable Cost**  
 Variable costs are those that change in direct proportion to the level of production. They are also known as direct costs. Examples include raw materials and direct labor.

**Fixed Cost**  
 Fixed costs are those that do not change with the level of production. They are also known as indirect costs. Examples include rent, depreciation, and salaries of administrative staff.

**PATHOLOGY C091C602 CLINICAL CASES**

1. please approaching these clinical cases as if you were seeing a real patient. The subjects will give you their histories and the laboratory and x-ray departments are ready to work for you. You may find several links on each page and the smart person will click on each one. Each case has an index so you can bookmark your progress should you take a break. The quiz at the end of each case will help reinforce the major points in each exercise.

1. A case of fever
2. A man with chronic cough
3. Middle aged man with chest pain
4. A man presents with cough
5. This man complains of dyspareunia
6. Man with abdominal pain
7. A middle aged man with confusion
8. This elderly man has chest pain
9. A young woman with a breast mass
10. A young woman with blindness
11. A woman with morning stiffness

## Tinker #2. Webcast Lectures (Tegrity, Echo360, Mediasite, etc.)

**Magnetic Disks**

What are tracks and sectors?

Track is narrow recording band that forms full circle on disk

Sector stores up to 512 bytes of data

Formatting prepares disk for use and marks bad sectors as unusable

## Tinker #3. Timeline Tools (e.g., USA Today, August 26, 2011)

<http://www.usatoday.com/story/news/nation/2011/08/26/martin-luther-king-jr-memorial-in-washington-a-closer-look/346968>

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

## Tinker #4. Video Animations and Simulations

**fold it**

Protein Folding Game

Human Anatomy

## Tinker #5. Collaborative Groups (Google Docs, Ning, Google Groups, MSN Groups, Yahoo Groups)

**Ning in Education**

Using Ning for Educational Social Networks

## Tinker #6. Case Learning and Role Play (Kelley Direct, IU)

**KELLEY SCHOOL OF BUSINESS**  
 INDIANA UNIVERSITY  
 IUPUI

### Tinker #7. Online Experiments (e.g., psychology)



### Tinker #8. Reading from Open Access Journals; Listen to Open Access Podcasts



### Tinkering #9. 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/kimNnRFHCzk?rel=0>



### Tinker #10. 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 #10b. Online Art

Google Art Project,  
 NBC Nightly News, April 3, 2012  
<http://www.msnbc.msn.com/id/3032619/vp/46945508#46945508>



### Tinker #11. Using Online Encyclopedias

(e.g, the Encyclopedia of Earth:  
<http://www.eoearth.org/>)  
[http://en.wikipedia.org/wiki/Encyclopedia\\_of\\_Earth](http://en.wikipedia.org/wiki/Encyclopedia_of_Earth)



### Tinker #11.

## Educational Videos: TED-Ed

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

TED-Ed Launches on YouTube

### Tinker #12. 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>

### Tinker #13. Predict outcomes (June 26, 2012)

(e.g., Interactive Political Maps: Huffington Post)

<http://elections.huffingtonpost.com/2012/romney-vs-obama-electoral-map#cartogram>

## Tottering

### Flipped Classrooms?

## Chronicle of HE, February 19, 2012

[http://chronicle.com/article/How-Flipping-the-Classroom/130857?cid=pmBtm\\_source=pmBtm\\_medium=ec](http://chronicle.com/article/How-Flipping-the-Classroom/130857?cid=pmBtm_source=pmBtm_medium=ec)

February 19, 2012

### How 'Flipping' the Classroom Can Improve the Traditional Lecture

Joseph Bousquet for The Chronicle

Andrew Martin's teaching techniques get students out of their seats during his class on evolutionary biology at the U. of Colorado at Boulder. Some students enjoy the "flipped" lectures that require them to help one another understand the material. Others resist being forced to work in groups.

By Paul Bennett

### February 21, 2012

## Rethinking Learning with Salman Khan, Stanford Graduate School of Business

<http://www.youtube.com/watch?v=W-vj6BhCa5w>  
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](http://www.ted.com/talks/Salman_Khan_let_s_use_video_to_reinvent_education.html)



**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

**March 20, 2012**  
**Georgetown Learning Initiatives**  
**Wikipedia Public Policy Initiative**  
<http://gii.georgetown.edu/#soliva>

**Totter #2.**  
**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)

**March 20, 2012**  
**Georgetown Learning Initiatives**  
**Social Justice Documentary**  
<http://gii.georgetown.edu/#soliva>

**Totter #3. Bridges to World of Expert and Practitioners**  
 (e.g., Invite, Watch, or Listen to Online Conferences, Expert interviews, blogs, chats, etc.)

**Totter #4. Global Class**  
**Videoconferencing and Remote Lands**

### Totter 4b. Global Class Videoconferencing and Remote Lands

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

### March 20, 2012 Georgetown Learning Initiatives Soliya Connect

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


### Totter #5. Combining Asynchronous and Synchronous Events

### Totter #6. Multi-Site Events (e.g., William and Mary, March 3, 2011)

### Totter #7. Podcast Productions and Virtual Performances for students of pronunciation class (e.g., Tzu-Su Chen, Taiwan)

### Totter #8. Video Blogging

### Totter #9. Uploading Mobile Books (e.g., BookRix, <http://www.bookrix.com/>)



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

### Totter #10. Podcasting Medical Lectures (School of Dentistry, University of Michigan)



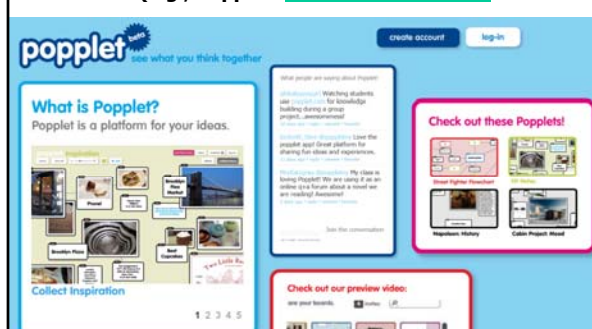
### Totter #11. Online Instructor Q&A April 1, 2012, Piazza: <https://piazza.com/>



### Totter #12. Lessons on iPad (e.g., ShowMe: <http://www.showme.com/>)

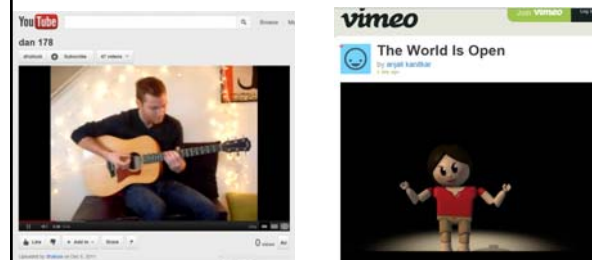


### Totter #13. Student Collaborative Knowledge Building and Sharing (e.g., Popplet: <http://popplet.com/>)



### Totter #14. Student Films and Documentaries

<http://vimeo.com/33090590/> (Verily)  
<http://vimeo.com/33123125/> (Anjali)  
<http://www.youtube.com/watch?v=1QZHvuZ3rhw&feature=youtu.be> (Yue)



## We are entering a jumping off point...



## Totally Extreme Learning...

### Cameras stream Canadian polar bear migration

Published: October 28, 2011 4:14 AM  
By The Associated Press, WATV/VOZ (Associated Press)



PHOTO COURTESY OF THE THOMPSONS. THE 2011 polar bear hunt is less extensive and less risky. Experts can observe a polar bear in the remote wilds of the Canadian tundra equipped but to complete around the world through a new program that aims to document in real time the annual migration of hundreds of polar bears outside Churchill in Manitoba, Canada. A polar bear sanctuary group from Texas International, an island in Houston, Texas, has set up a webcam to monitor bear migration as far as 1,000 miles from the Hudson Bay, to those bear to begin their annual migration, your photo gallery entry.



## Extreme Learning Defined (Bonk, 2011)

"Extreme learning can involve learning while on a boat at sea near the North Pole or when sailing around the world. It also occurs when tracking the blog and podcasts postings of those in similar adventures such as riding a bike or a car around the world or through the Americas. Extreme learning also includes more sedate and passive forms of learning including watching an online video in TED, LinkTV, CurrentTV, or YouTube."



## Extreme Learning continued... (Bonk, 2011)

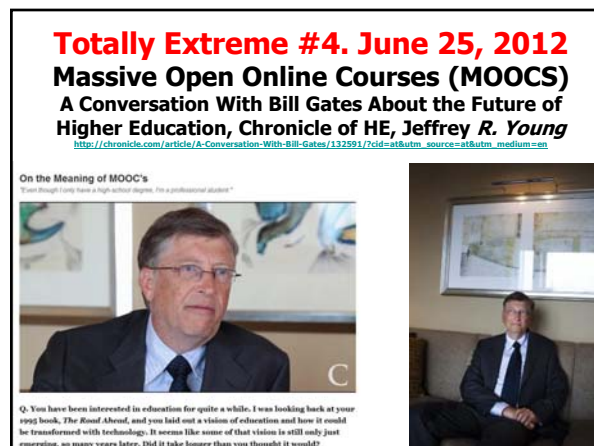
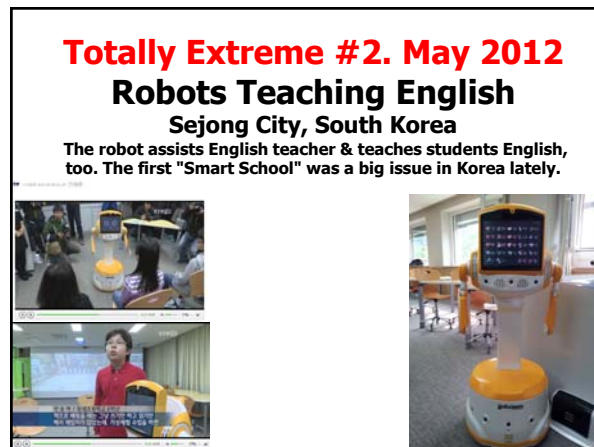
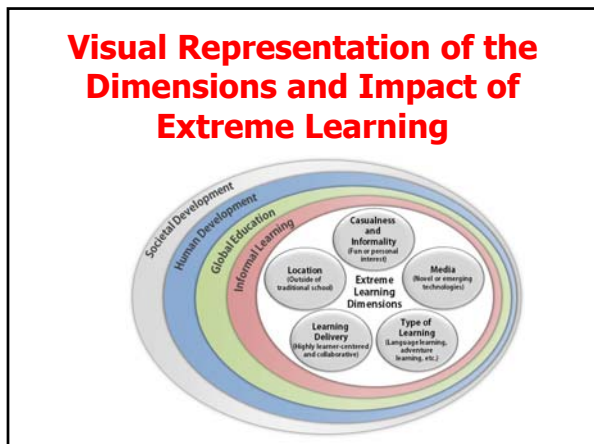
"Through extreme learning Web resources, those stuck behind prison walls, injured and in a hospital bed, or unemployed and unable to pay for college tuition can learn to be more productive members of society. Others might be in transition from one career to another and find open educational resources and OpenCourseWare can arouse new interests and confidence" (see Iiyoshi & Kumar, 2008).



## Extreme Learning

"Still others might be retired and offer their educational ideas and mentoring services to anyone interested in the topic. Others might be earning their MBA while in war zones in Iraq or Afghanistan."







**Adventure Learning**  
(e.g., GeoThentic, Earthducation, Polar Husky, GoNorth; Aaron Doering, Univ of Minnesota; cars and bikes--Dan Grec and Mark Beaumont)

**Michael Perham**  
(Sept 17, 2012)  
<http://www.mikeperham.tv/>

**Michael Perham**  
(Sept 17, 2012)  
<http://www.mikeperham.tv/>

**Totally Extreme #10.**  
**iPod Learning from MIT OCW**  
(e.g., Wendy Ermold, University of Washington)

**Totally Extreme #11.**  
**MBAs from War Zones...!**


**Totally Extreme #12.**  
**Kids Learn Online, Teach Online**  
(e.g., the World's Youngest Teacher; Adora Svitak)

**Totally Extreme #13.**  
**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**



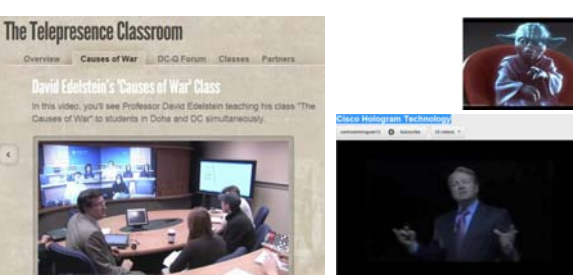
**OOPS**  
 Opensource Opencourseware Prototype System  
 開放式課程計劃

**Totally Extreme #14. 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 #15.**  
**Telepresence, Virtual Presenters, and Teleportec Systems (e.g., Cisco and HP)**

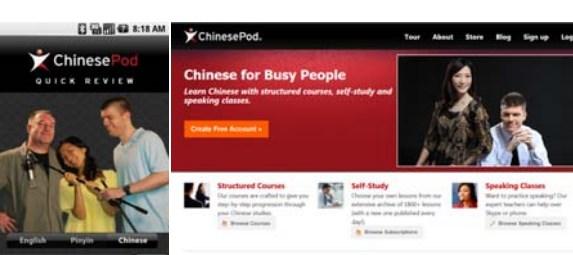
The Telepresence Classroom



**Totally Extreme #16.**  
**Online Language Learning and Conversations**  
 (e.g., PalTalk, iTalki, OpenLanguage, Babbel)



**Online Language Learning**  
 (e.g., 300,000 people per month listening to ChinesePod, co-hosted by Jenny Zhu, John Pasden, and Ken Carroll)



**Totally Extreme #17. 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=72>

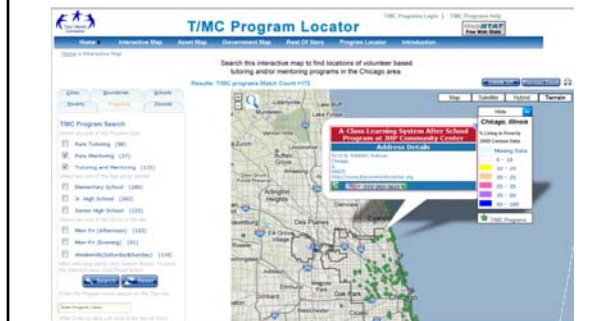




**Totally Extreme #18. June 3, 2012**

**Tutor/Mentor Connection (Chicago)**

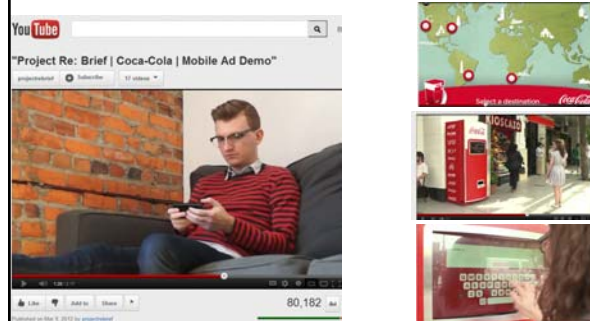
<http://www.tutormentorprogramlocator.net/InteractiveMap.aspx>



**Totally Extreme #19. May 8, 2012**

**"Project Re: Brief | Coca-Cola | Mobile Ad Demo"**

<http://www.youtube.com/watch?v=45Z-GevoY88&feature=relmfu>



**Totally Extreme #20. February 2012**

**Pocket School and SMILE: Stanford Mobile Inquiry-based Learning Environment**



**Totally Extreme #21. Immediate Science**

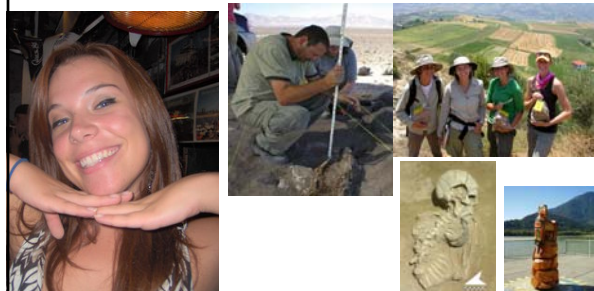
**Ida (a transitional species) 47-Million-Year-Old Fossil the Missing Link? (May 20, 2009)**



**Totally Extreme #22.**

**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 #23.**

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



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

**Totally Extreme #25. International and Global Education and Competitions**  
 (e.g., Global Game Jams, online role play, Global Videoconferencing)

**Totally Extreme #26.**  
**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)

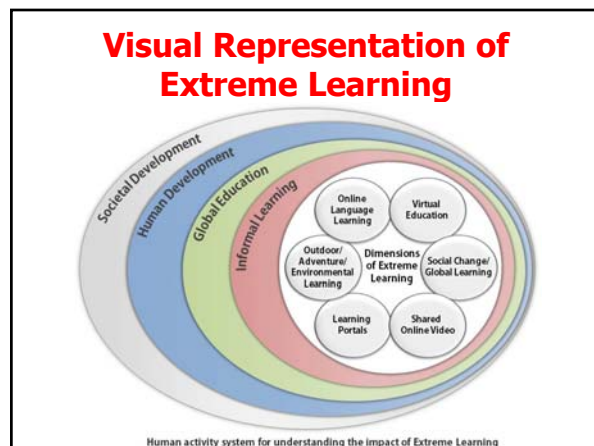
**Totally Extreme #27.**  
**Students/Instructors Publish Own Books**  
 (e.g., Apple's new electronic textbook initiative)

**Totally Extreme #28. Pocket School and Videoconferencing in Developing World**  
 (Paul Kim, Stanford and Seeds for Empowerment in Rwanda, India, Mexico, Tanzania, etc.)

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



- 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.



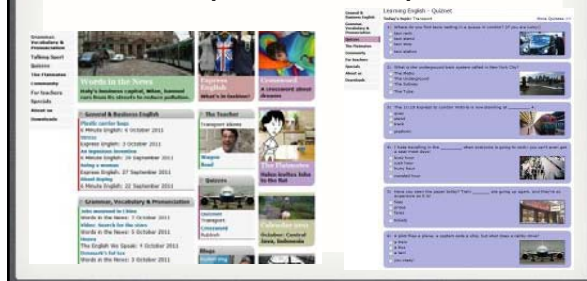
### 1. Virtual Education

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



### 2. Online Language Learning

ChinesePod, LiveMocha, Babbel



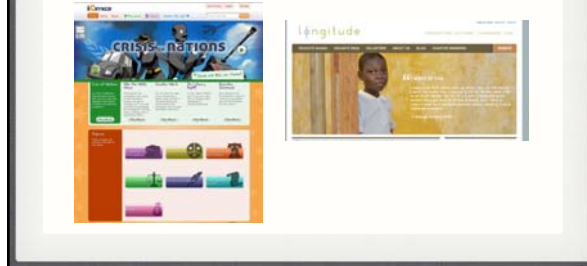
### 3. Portals of OER

OER Commons, Open College Textbooks, WorldBridges.net



### 4. Social Change and Global Education

SierraClub, Longitude, iCivics



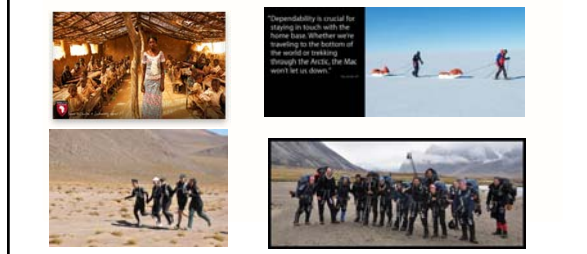
### 5. Shared Online Video

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

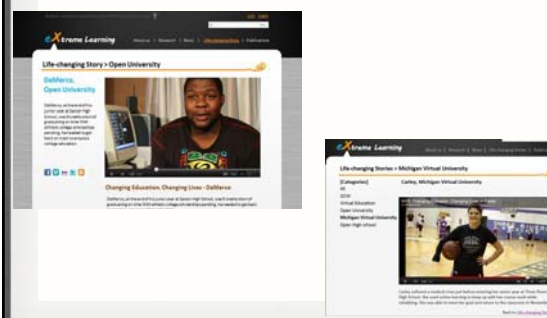
## Future: Extreme Learning Featured site (ELF Awards)



## 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: Ad Adina (adina)

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

Name	# of quotations
Kunle / engineering	0
Zaria, Nige / itis and fin	0
Nigeria has / Ahmadu Bello	0
OCW	0
please / Nigeria	0
penelope / Kunle Adajana	0
Oliver / 2006-2008	0
well / http://www.ait.edu/education/education/kunle-adajana	0

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 - like that of almost all Nigerian universities - is severely limited.

Even the computer lab does not have a Web connection.

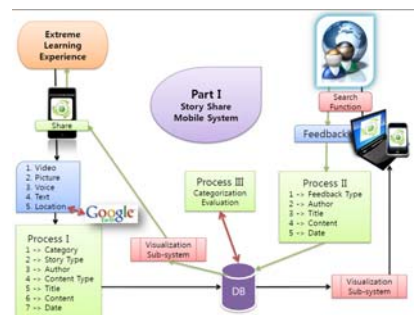
And because of the large number of students and the limited number of terminals, students can sign-up for only 30 minutes each week on university computers.

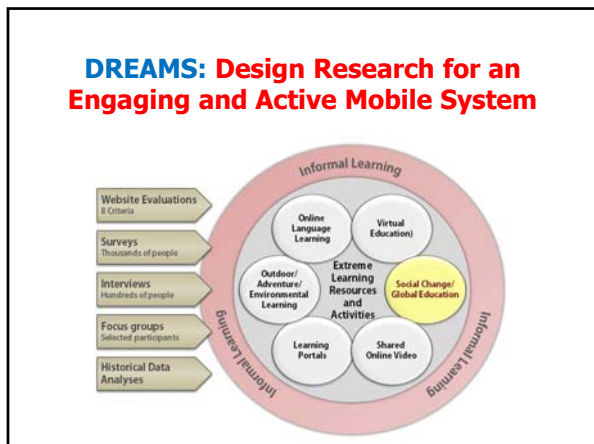
Getting access

When Adajana 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 asked the computer lab for a copy of the CD, when they were unable to give him one, Adajana decided to find the site on his own, and copied down the Web address.

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

## HOPES Mobile Platform Storytelling Entrance





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