

### 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.



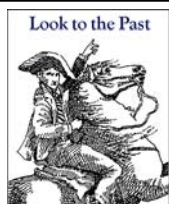
### Change not possible as an accountant... (Life as a CPA, 1981-1986)



Property of Museum of History & Industry, Seattle



### Looking to the Past...



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



### Learning is Changing New Technologies = New Delivery Methods...



Learning Delivery



**I. Learning is More Technology Driven**  
 Robots teaching English and Virtual Worlds  
 Dr. Meeyong Kim, Dajeon, Korea, May 2012



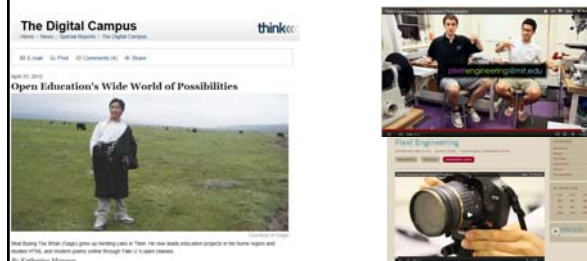
**II. Learning is More Video-Based**  
 GETideas Channel, Cisco (Thought Leader Series uploaded to YouTubeU), July 22, 2011



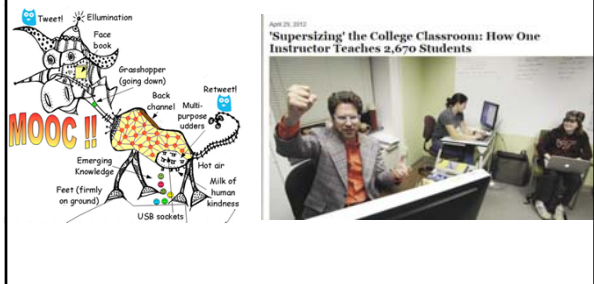
**III. Learning is More Mobile**  
 Brown, Keynote talk, "Learning in Hand With Mobile Technology," Wisconsin Distance Teaching and Learning Conference, August 10, 2012



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



**V. Learning is More Massive**  
 Open Education's Wide World of Possibilities  
 Chronicle of Higher Ed, Katherine Mangan, April 29, 2012  
[http://chronicle.com/article/Open-Education-s-Wide-World-of-Possibilities/131972?cid=ak&utm\\_source=at&utm\\_medium=em](http://chronicle.com/article/Open-Education-s-Wide-World-of-Possibilities/131972?cid=ak&utm_source=at&utm_medium=em)



**VI. Learning is More Flipped**  
 Mooresville's Shining Example, February 12, 2012  
 (It's Not Just About the Laptops), ALAN SCHWARZ, NY Times  
[http://www.nytimes.com/2012/02/13/education/mooresville-school-district-a-laptop-success-story.html?\\_r=1&page=want-call](http://www.nytimes.com/2012/02/13/education/mooresville-school-district-a-laptop-success-story.html?_r=1&page=want-call)



### VII. Learning is More Empowering

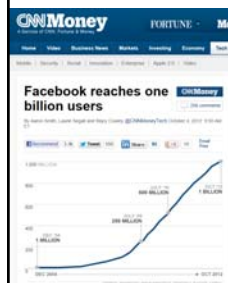
iPad gives voice to kids with autism  
Supraja Seshadri, CNN, May 14, 2012



Sharia Siddiqui uses an iPad to help her communicate. Her father says it's "given her a sense of control she never had."

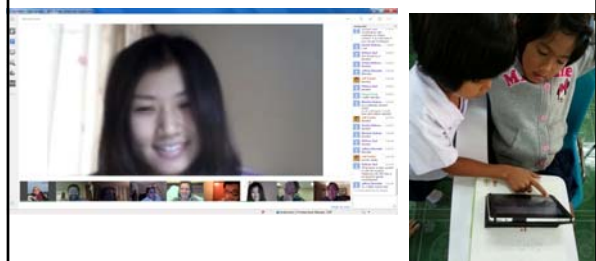
### VIII. Learning is More Social

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



### IX. Learning is More Collaborative

Collaboration and Discussion in Google Hangouts or with iPad, Jan. 29, 2013



### X. Learning is More Ecological

THE Journal, February 13, 2013



### XI. Learning is More Ubiquitous

Flexible displays bend what's possible for computers,  
Jon Swartz, USA Today (May 4, 2012)



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.

### XII. Learning is More Pervasive (i.e., Streamed)

Google Glass (June 27, 2012)



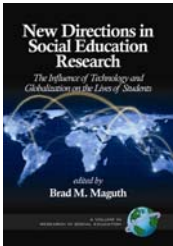

### XIII. Learning is More Personal

**iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman (January 10, 2013)**  
<http://mashable.com/2013/01/10/ipotty/>





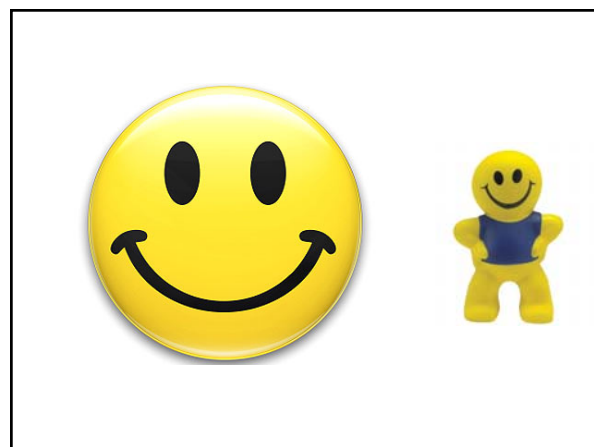
### XIV. Learning is More Global

**(Book Review by Dr. Mimi Miyong Lee: Ed Tech Magazine, May-June 2013)**  
 Maguth, Brad M. (Ed.). (2012). *New Directions in Social Education Research: The Influence of Technology and Globalization on the Lives of Students*. Charlotte, NC: Information Age Publishing, Charlotte, NC.

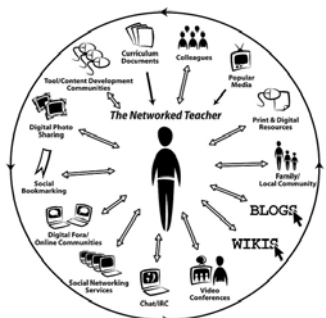

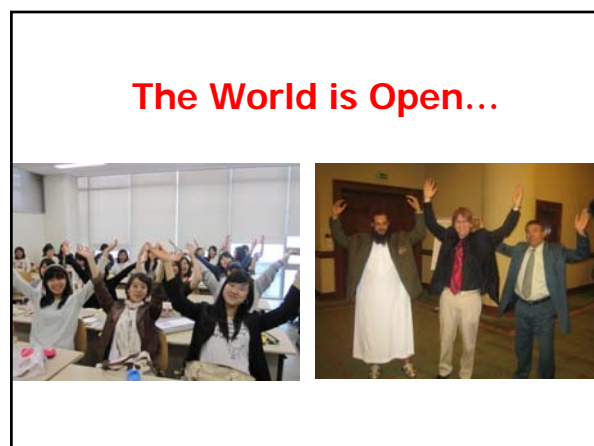



### Learning is Changing the World

**(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.

### The Web of Learning



### Framework #1: 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
- **R**ead-Time Mobility and Portability
- **N**etworks of Personalized Learning





## Audience Participation!

- 1. WE**
- 2. ALL**
- 3. LEARN!!!**

### Framework #2: From Tinkering to Tottering to Totally Extreme Learning...




## Tinkering Ideas



"I'm a thinker  
therefore I tinker!"

### Tinker #1. Educational Videos: e.g., TED-Ed <http://education.ted.com/>




TED-Ed Launches on YouTube

### Tinker #2. Peer-Reviewed 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))



Climate Change

### Tinker #3. Explore Timelines with Oral Histories Slavery and the Making of America

<http://www.nbs.com/wnet/slavery/timeline/1857.html>

### Tinker #4. Online Art Google Art Project NBC Nightly News, April 3, 2012

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



### Totter #1. Lessons on iPad (i.e., Flip the class)

(e.g., ShowMe: <http://www.showme.com/>)

### Totter #2. Digital Book Projects

(In South Korean classrooms, digital textbook revolution, Washington Post, March 24, 2012)

**In South Korean classrooms, digital textbook revolution meets some resistance**

### Totter #3. Student Collaborative Knowledge Building and Sharing

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

**Totter #4. Global Projects**  
 (e.g., TakingItGlobal (TIG), RoundSquare, etc.)  
 RoundSquare (<http://www.roundsquare.org/>) and  
 Taking it Global (<http://www.tigweb.org/>)

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

**You Want Totally Extreme?**  
**Learning in a Plane, Train, Boat, etc.**

**Totally Extreme #1.**  
**Adventure Learning**  
 (e.g., North of 60, GeoThentic, Earthducation, see  
 Aaron Doering, Chasing Seals; <http://chasingseals.com/>,  
 Impossible2Possible; <http://impossible2possible.com/home>)

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

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

**Totally Extreme #3.**  
**Kids Learn Online, Teach Online**  
 (e.g., the World's Youngest Teacher; Adora Svitak)

### Totally Extreme #4. Child-designed Mobile Apps

S.T.E.M. education inspiring girls nationwide,  
February 10, 2013, Melissa Harris-Perry  
<http://tv.msnbc.com/2013/02/10/s-t-e-m-education-inspiring-girls-nationwide/>

### Totally Extreme #5. Online Learning Polyglots

<http://www.nytimes.com/2012/03/11/nyregion/born-a-master-of-languages-finds-online-fellowship.html>

Timothy posts videos of himself speaking several languages on YouTube.

### Totally Extreme #6. Virtual Mentoring

<http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2>

### Totally Extreme #7. Tutor/Mentor Connection (Chicago)

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

### Totally Extreme #8. The Granny Cloud

(grandmothers use Skype to mentoring kids in India), September 2010, TED Talk from Sugata Mitra  
[http://www.ted.com/talks/sugata\\_mitra\\_the\\_child\\_driven\\_education.html](http://www.ted.com/talks/sugata_mitra_the_child_driven_education.html)

### Totally Extreme #9. SOLE's (Build a School in the Cloud; Self-Organized Learning Environments (SOLES), February 2013, TED Talk from Sugata Mitra [http://www.ted.com/talks/sugata\\_mitra\\_build\\_a\\_school\\_in\\_the\\_cloud.html](http://www.ted.com/talks/sugata_mitra_build_a_school_in_the_cloud.html)



**Totally Extreme #10. Reusable Khan Lacking Teachers and Textbooks, India's Schools Turn to Khan Academy to Survive, NY Times, Anupama Chandrasekaran, Oct. 15, 2012**

The New York Times | International Herald Tribune



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

**Totally Extreme #11. Social Networking from Space**  
 NASA's spacey Google+ Hangout shows off zero-G antics – and cats!, Alan Boyle, NBC News, Feb 22, 2013

<http://cosmiclog.nbcnews.com/news/2013/02/22/17057588-nasas-spacey-google-hangout-shows-off-zero-g-antics-and-cats?lite>



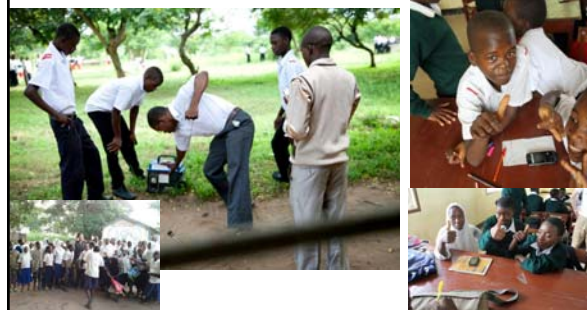
**Weekly Space Hangout**

<https://plus.google.com/events/C2c2S92ibpvmM47c4d0t5uapkh#events/C2c2S92ibpvmM47c4d0t5uapkh>

*"For more outer-space video goodness, tune in the [Weekly Space Hangout](#) at 3 p.m. ET Friday."*



**Totally Extreme #13. Pocket School and SMILE, Tanzania Feb 2012 (Paul Kim, Seeds of Empowerment, Stanford University)**



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

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 #14. Augmented Reality, USA Today, Edward Baig. (e.g., ZooBurst, Craig Kapp, NYU, pop-up books)**



## Totally Extreme #15.

**Tracing the fate of Algal Carbon Export in the Ross Sea, Antarctica TRACERS: The NBP13-02 Cruise, February 12 to April 5, 2013**  
<http://tracers-nbp1302.blogspot.com/p/the-project.html>  
 From: Cassandra Brooks [mailto:cbrooks1@stanford.edu]  
 Sent: Thursday, January 31, 2013 12:09 AM  
 Subject: To keep up on the Antarctic Adventures... I'm heading out today to New Zealand, then flying to Antarctica where we pick up our NSF icebreaker. We'll be at sea for about 54 days, then coming back through Chile. Hopefully I will be back the first week of April. In the meantime, here is the cruise blog:

The screenshot shows a blog post with a title, a date (13 April 2013), and a 'PROJECT DESCRIPTION' section. It includes a map of the Ross Sea with labels for 'Baker Inlet', 'Cape Colbeck', 'McKean Ridge', 'Terra Nova Bay', and 'Cape Adare'. There is also a diagram showing a cycle of CO<sub>2</sub> and algal carbon export.

## Extreme Learning Website

[www.extreme-learning.com](http://www.extreme-learning.com)

The screenshot shows the homepage of the Extreme Learning website. It features a navigation bar, a main content area with a large image and text, and a 'What's New' section with a list of recent updates. The text on the page discusses 'Extreme Learning' and its focus on informal and non-traditional learning.

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

The diagram shows a central globe labeled 'Extreme Learning' surrounded by four quadrants: 'Video', 'Social', 'Adventure', and 'Virtual'. The quadrants are further divided into 'Language' and 'Portals'. Surrounding the central globe are four circular icons representing 'Informal Learning', 'Human Development', 'Global Learning', and 'Societal Development'.

## Sample HOPES Stories

Two screenshots of HOPES stories are shown. The first is titled 'Life-changing Story - Open University' and features a video of a man speaking. The second is titled 'Life-changing Story - Michigan Virtual University' and features a video of a man in a basketball uniform.

## DREAMS: Design Research for an Engaging and Active Mobile System

The diagram illustrates the DREAMS design research process. It features a central circle labeled 'Extreme Learning Resources and Activities' surrounded by six smaller circles: 'Online Language Learning', 'Virtual Education', 'Social Change/Global Education', 'Shared Online Video', 'Learning Portals', and 'Outdoor/Adventure/Environmental Learning'. To the left, a vertical list of research methods is shown: 'Website Evaluations (8 Criteria)', 'Surveys (Thousands of people)', 'Interviews (Hundreds of people)', 'Focus groups (Selected participants)', and 'Historical Data Analyses'. The entire process is framed by a large circle labeled 'Informal Learning'.

## Who is Stretched Now?

Website: [www.Extreme-Learning.com](http://www.Extreme-Learning.com)  
 Slides at: [TrainingShare.com](http://TrainingShare.com)  
 Book: <http://worldisopen.com/>  
 Dr. Curt Bonk – [CJBonk@Indiana.edu](mailto:CJBonk@Indiana.edu)

The image shows a green frog on the left and a man wearing a headset and glasses, sitting at a desk with a laptop, on the right.