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

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

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

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.”

The Next 30 Years, USA Today, August 23, 2012
http://www.usatoday.com/video/news/1839139540001

The Next 30 Years, USA Today, August 23, 2012
http://www.usatoday.com/video/news/1839139540001

Course Builder Intro Video, Sept 12, 2012
http://www.youtube.com/watch?feature=player_embedded&v=GAY5ICoVnA8

A world where grades will be left behind, Mary Beth Marklein, USA Today, Sept 14, 2012
http://www.usatoday.com/news/nation/story/2012/09/14/a-world-where-grades-dont-exist-and-learning-is-free/57778420/1

The Next 30 Years, USA Today, August 23, 2012
http://www.usatoday.com/video/news/1839139540001
Florida Ponders Opening an Online-Only Public University,
Sept 14, 2012, Angela Chen, Chronicle of HE
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 15th
public university. Under the new proposal, the board itself would oversee the planned 15th
university, which would have neither a campus nor a football team. The potential campus
would be entirely online.

May 5, 2012
Shaq earns doctorate degree
May 7, 2012
Google+ Hangouts On Air: broadcast your conversation to the world

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

From Tinkering to Tottering to Totally Extreme Learning...

Tinkering
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

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

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

Tinker #4. Video Animations and Simulations

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

Tinker #6. Case Learning and Role Play (Kelley Direct, IU)
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/tellymonitor2/p/a/u/1/LhGeApsKjas
http://www.labnews.co.uk/news/prehistoric-revolution/
http://www.youtube.com/embed/kjmNnRFHCzk?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/up/49945508/#46945508

Tinker #11. Using Online Encyclopedias (e.g, the Encyclopedia of Earth:
http://www.eoearth.org/)
Tinker #11. Educational Videos: TED-Ed
http://education.ted.com/

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/jul/12/protest-middle-east-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

Flipped Classrooms?
Chronicle of HE, February 19, 2012
http://chronicle.com/article/How-Flipping-the-Classroom/130857/

February 21, 2012
Rethinking Learning with Salman Khan, Stanford Graduate School of Business
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
**Totter #1.**
 Wikibooks, Wiki-Glossaries, Wiki-Syllabi
(Ron Owston, York University, Toronto)

**March 20, 2012**
Georgetown Learning Initiatives
Wikipedia Public Policy Initiative
http://gli.georgetown.edu/#soliya

**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://gli.georgetown.edu/#soliya

**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.tigweb.org/)

March 20, 2012
Georgetown Learning Initiatives
Soliya Connect
http://gli.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/)

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/33090530 (Verily)
http://vimeo.com/33123125 (Anjali)
http://www.youtube.com/watch?v=IQZHvuZ3rbw&feature=youtu.be (Yue)
We are entering a jumping off point...

Totally Extreme Learning...

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."
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

Totally Extreme #1. May 4, 2012
Bendable Displays/Screens
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.

Totally Extreme #2. May 2012
Robots Teaching English
Sejong City, South Korea
The robot assists English teacher & teaches students English, too. The first "Smart School" was a big issue in Korea lately.

Totally Extreme #3. June 24, 2012
Primate Intelligence
What Was He Thinking? Study Turns to Ape Intellect
ABC News, SETH BORENSTEIN
http://abcnews.go.com/Tech/home/study-turns-ape-intellect/story?id=1563814

Totally Extreme #4. June 25, 2012
Massive Open Online Courses (MOOCS)
A Conversation With Bill Gates About the Future of Higher Education, Chronicle of HE, Jeffrey R. Young
Open Teaching and Massive Open Online Courses (i.e., MOOC, David Wiley, George Siemens, Ray Schroeder)

Totally Extreme #5. June 27, 2012
Google Glass
ABC News, Google I/O Conference: Project Glass Prototype For Sale

Totally Extreme #6. June 27, 2012
Remote Animal Streaming
Remote Maine puffin colony up close on HD web cam
Clare Canfield, The Stateman, June 27, 2012

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

Totally Extreme #8. Adventure Learning about the Environment (e.g., North of 60, GeoThentic, Eartheducation, see Aaron Doering, Chasing Seals; http://chasingseals.com/)

Totally Extreme #9. Impossible2Possible
http://impossible2possible.com/home
Adventures 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/

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)

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)

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 #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-GevoYB8&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)
**February 2012**
SMILE: Stanford Mobile Inquiry-based Learning Environment

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

**March 20, 2012**
SMILE: Stanford Mobile Inquiry-based Learning Environment

**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,

**Visual Representation 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

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<th>Categories</th>
<th>Coolest websites</th>
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<tbody>
<tr>
<td>Online Language Learning</td>
<td>LiveMocha, BBC Learning English, ChinesePod, EnglishPod</td>
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<tr>
<td>Virtual Education</td>
<td>MIT OpenCourseWare (OCW), Highlights for High School, Open University UK, OpenMath</td>
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<tr>
<td>Social Change/Global Education</td>
<td>Earth education, Jon Bonhamaster, National Geographic, Educational Resources</td>
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<td>Learning Portals</td>
<td>MERLOT, iCivics, Earth Education, National Geographic, Educational Resources</td>
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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

What are your Extreme Learning HOPES and DREAMS?
Website: www.Extreme-Learning.com
Slides at: TrainingShare.com
Book: http://worldisopen.com/

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