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

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Yonsei University, Seoul, Korea
September 2010
Meta-Analysis Update: Blended and Fully Online Still Best

December 15, 2010
Mark Zuckerberg, Time Magazine, Person of the Year

February 4, 2011
New Enrollment History Chart: Florida Virtual School (Julie Young, President & CEO)

February 16, 2011
How Bill Gates’ Favorite Teacher Wants to Disrupt Education, Gregory Forrester, Fast Company


“Video Primers in an Online Repository for e-Teaching and Learning” V-PORTAL, TravelinEdMan (27 free/open YouTube videos), October 2010
http://www.youtube.com/user/TravelinEdMan

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http://www.vportal.org

http://www.time.com/time/issue/

http://money.cnn.com/fortune/

http://www.msnbc.msn.com/id/18545954

http://money.cnn.com/fortune/
April 12, 2011
NCTM Conference Session, Free
Online Degrees; iSMART: Integration of
Science, Mathematics, and Reflective Teaching
(iSMART), University of Houston

June Chauvo and
Mimi Lee, Univ
of Houston

April 29, 2011
Shared Online Video
(e.g., YouTube and the Royal Channel)

May 9, 2011
Defense Acquisition University, Training Courses:
Reaching the Workforce

July 20, 2011
Smart phones driving lecture capture growth
eCampus News, Dennis Carter

August 3, 2011
Inking opens textbooks on the iPad
USA Today, Jefferson Graham

August 11, 2011
Unleashing the Potential of Technology in
Education, The Boston Consulting Group, Allison
Bailey, Tyce Henry, Lane McBride, & J. Pucket
April and August 24, 2011
Departments Stay Afloat with new Online Ventures (new Ed.D. in IST/Ed Tech)
(e.g., http://iucconnectediu.edu/

Welcome!

August 25, 2011
Brain-training games are new exercise craze, USA Today, (e.g., Lumosity, MindSparkle; http://www.lumosity.com/)

September 12th, 2011
Indiana University tries to drive down textbook costs with eBooks
Online textbooks initiative comes as student activism clamors for more affordable options nationwide, eCampus News, Denney Carter

Adapting to the iPad, called education's 'equalizer',
USA Today, Alesha Williams Boyd,

September 12th, 2011
Adapting to the iPad, called education's 'equalizer',
USA Today, Alesha Williams Boyd,

- There are now about 40,000 educational applications for the iPad, Apple reports.
- Video can be used to practice social skills. Speech recognition aids students who have writing difficulties. The touch screen makes use easy for children who have dexterity problems, Barry says.
- "I think the key word for this is engagement," Barry says. "The engagement was just a lot higher. I think it's adaptive to meet the needs of individual students. I think it's an equalizer. I do think it's a game changer."

September 18, 2011
iPad-enabled students get performance boost, says ACU study
by Michael Rose, TUNW (The Unofficial Apple blog),
September 25, 2011
Moodle (46 million users in 212 countries, 56,600 sites, 4.88+ million courses)

I am not Content!!!

September 15, 2010
Study: Online learning might be less effective for some, eSchool News, Dennis Carter

Classroom students scored 84.5 percent on the first exam in the economics course, and online students scored 83.3 percent.

June 2010
Clay Shirky, NYU: How cognitive surplus will change the world, TED

May 24, 2010
Author Nicholas Carr, The Web Shatters Focus, Rewires Brains, Wired

Author Nicholas Carr: The Web Shatters Focus, Rewires Brains
August 26, 2011
Collaborative Learning for the Digital Age,
Cathy Davidson, Chronicle of HE,
https://chronicle.com/article/Collaborative-Learning-for-the-Digital-Age/38789/

"I want to suggest a different way of seeing, one that's based on multitasking our attention—not by seeing it all alone but by distributing various parts of the task among others dedicated to the same end. For most of us, this is a new pattern of attention. Multitasking is the ideal mode of the 21st century, not just because of information overload but also because our digital age was structured without anything like a central node broadcasting one stream of information that we pay attention to at a given moment. On the Internet, everything links to everything, and all of it is available all the time."

Who Needs Blended and Online Learning?

Those in the Military!
Going the Distance, Elizabeth Millard, University Business, March 2011
Athletes and Performers
Going the Distance, Elizabeth Millard, University Business, March 2011

March 11, 2011
Those Preparing for Exams and Needing Remediation,
Bill Gates, Salman Khan, NBC Special
http://www.msnbc.msn.com/id/2013399/?tag=mstotw-12-08-10

Those in hurricanes!
(Katrina, August 2005; Ike, Sept 2008;
Irene, August 2011)

Those where there are disease outbreaks...
(SARS, 2003; H1N1, 2009-2010)

Those in earthquakes!

Those effected by volcanos
(Iceland, April 2010)
Those in blizzards and ice storms...

Snowmageddon, Washington, DC (winter of 2010)

Those stuck in airports the "Groundhog Day Blizzard" of February 2011 (Jan 31-Feb 2nd)

Those in tsunamis? (Japan, March 11, 2011)

Those in tornados...! (April 24, 2011)

No Worries! It's always nice in Kansas...
Why should we be content?

Contentment

Technology of the 1980s

Radio Shack TRS-80 Model II

Mark Weiser, Scientific American, 1991,
The Computer for the 21st Century

Let's Reflect Back 10 Years...

2001: a space odyssey

Shovelware
Ten Years Later...

1. Inexpensive Laptops and Netbooks

#2. Online Language Learning
January 27, 2010 and Feb 5, 2010: The Web Way to Learn a Language, NY Times, ERIC A. TAUB (e.g., EnglishCentral, iTalki, Palabra, Babbel)

#3. Tablet Computers Hit (iPad)
April 10, 2010: Seton Hill Univ, 2,100 students on iPad and freshmen a 13-inch MacBook laptop
Feb 1, 2011: An Android Tablet Made Just for School, David Zax, Fast Company

#4. Pocket Dictionaries and Digital Textbook Projects (Korea), July 6, 2011:
Huma Haq, In South Korea, all textbooks will be e-books by 2015, speeding past the US, South Korea will be digitizing reading material in all public schools by 2015. Christian Science Monitor.
5. Video Conferencing/Webcamming

December 20, 2010: Skype for iPhone adds two-way video calling, CNet Reviews

#6. Shared Online Video:
TED, Academic Earth, TV Lesson, and Fora TV

#7. Social Networking/Gaming
December 24, 2010: Cityville 16.8 million daily users, Farmville 16.4 million, Cityville 6.7 million monthly users, Farmville 56.8 million users. Mashable.

Group Video Chat, February 28, 2011:
SocialEyes delivers group video chat, USA Today, Jon Swartz,
http://www.socialeyes.com/

First Look at Google+ Hangouts,
June 29, 2011
SocialEyes delivers group video chat

Facebook introduces video calling, Eric Stoller, July 6, 2011, Inside Higher Ed
#8. E-Book Readers
January 28, 2011: Amazon Kindle Books Finally Eclipse Paperbacks, Doug Aamoth
March 2, 2011: Why Amazon would be smart to give away the Kindle, March 4, 2011, CNN Tech, Amy Gahran

Whether a surge in e-book sales can be sustained and what effect it could have on traditional bookstores remains to be seen.

#9. Artificially Intelligent Computers
February 18, 2011: Watson dominates at 'Jeopardy!' — but what else can it do? As IBM seeks new uses, man still has edge over machine, Dan Fergano, USA Today

#10. New Interfaces
February 18, 2011: Telekinesis 2.0, David Zax, Fast Company

#11. Mobile Apps, May 13, 2011:
USA Today, Mary Beth Marklein

August 2, 2011: Stanford U. Offers Free Online Course in Artificial Intelligence, Jie Jenny Zou, Chronicle of Higher Education (over 135,000 sign up as of August 27)

Worldreader, August 22, 2011
What Makes Ed Tech Successful In the Developing World?, ReadWriteWeb, David Risher
#12. Augmented Reality, May 17, 2011:
USA Today, Edward Baig, May 17, 2011, Augmented reality has potential to reshape our lives.

#13. Language Translation Tools, Aug 19, 2011
(e.g., Bing Translator (a convenient way to translate between languages in Internet Explorer 8))
http://www.altroveatlantis.com/default.aspx

#14. Online Portals and Open Educational Resources (OER) February 8, 2011
Google Art Project, Chronicle of HE (new Google project that allows visitors to explore museums around the world and view hundreds of artworks) http://www.googleartproject.com/

Question: What is the Web?
- An entertainment system?
- A writing aid?
- A communications system?
- A means to handle commercial transaction?
- A social networking device?

No, it is a learning tool!

July 10, 2011
The Virtual Zooarchaeology of the Arctic Project (VZAP) is a virtual, interactive, osteological reference collection for the study of northern vertebrates. VZAP is a dynamic natural history archive which allows students and researchers to examine the complete skeletal anatomies of multiple bird, mammal, and fish species in both 2D and 3D. (Anthropologist) Puts an Idaho Museum’s Many Bones Within Virtual Reach, Peter Wielagah, July 16, 2011, Chronicle of HE http://www.chroniclehe.com verypage.aspx?N=230

The Web of Learning

Google
PBWORKS Blogger slideshare
We are entering a jumping off point...

Elements of the Web's Next Generation

It is very open!
(May 2011, Norway & June 2011 the Philippines)

Framework #1: WE-ALL-LEARN:
Ten Forces that Opened the Learning World

- Web Searching in the World of e-Books (i.e., Darwin)
- E-Learning and Blended Learning
- Availability of Open Source and Free Software (e.g., Moodle)
- Leveraged Resources and OpenCourseWare (e.g., MIT)
- Learning Object Repositories and Portals (i.e., shared content)
- Learner Participation in Open Info Communities (YouTube)
- Electronic Collaboration and Interaction (sync and async)
- Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- Real-Time Mobility and Portability (e.g., iPhone)
- Networks of Personalized Learning (Blogs, RSS)
Audience Participation!
1. WE
2. ALL
3. LEARN!!!

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

We are not motivating students with the technologies that they love!

A Vision of Today's Students

Framework #1: TEC-VARIETY for Online Motivation and Retention
1. Tone/Climate: Psych Safety, Comfort, Belonging
2. Encouragement, Feedback: Responsive, Supports
3. Curiosity: Fun, Fantasy, Control
4. Variety: Novelty, Intrigue, Unknowns
5. Autonomy: Choice: Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactive: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Excitement
9. Tension: Challenge, Dissonance, Controversy
10. Yields Products: Goal Driven, Products, Success, Ownership
1. Tone/Climate: Social Ice Breakers

A. 8 nouns (adjectives, verbs)
- List of nouns: (e.g., pirate, computer, traveler, roadrunner, wind, bookworm, musician, mentor, etc.)
  - [https://www.momswisdom.com/reading/list-of-nouns.html](https://www.momswisdom.com/reading/list-of-nouns.html)
- List of adjectives: (e.g., lazy, powerful, shy, bored, exotic, cooperative, skippy, rebel, etc.)
  - [https://www.momswisdom.com/reading/list-of-adjectives.html](https://www.momswisdom.com/reading/list-of-adjectives.html)
- List of verbs: (e.g., coordinate, entertain, amuse, push, unite, beg, dream, publicize, etc.)
  - [https://www.momswisdom.com/reading/list-of-verbs.html](https://www.momswisdom.com/reading/list-of-verbs.html)

2. Encouragement, Feedback, etc.: A. Tutorials with Screen Capture (e.g., Jing, Screencr, GoView, etc.)

3. Curiosity, Fun: A. Online Database Activities (e.g., WolframAlpha)

4. Variety, Novelty, Fun, Fantasy:
   A. Random Lists (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)

5. Autonomy, Choice:
   A. Web Exploration Assignments

6. Relevance, Meaningfulness:
   A. Online Cases (e.g., Mark Braun, IU)
7. Interactive, Collaborative:
A. Dr. Monica Rankin's class, UT Dallas, Cuban Revolution (April/May 2011)
http://www.youtube.com/watch?v=ocDQMT1cPo8

http://www.theguardian.com/world/2011/jul/12/arab-spring-timeline

9. Tension, Challenge, etc.:
A. Ethical Debates

10. Yields Products, Goals:
A. More Student YouTube Products

TEC-VARIETY Model for Online Motivation and Retention

- Tone/Climate
- Encouragement, Feedback
- Curiosity

- Variety
- Autonomy
- Relevance
- Interactive
- Engagement
- Tension
- Yields Products

Framework:
#2: The R2D2 Model

Empowering Online Learning
**The R2D2 Method**

1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)

**1. Auditory or Verbal Learners**

- Auditory and verbal learners prefer words, spoken or written explanations.

**2. Reflective and Observational Learners**

- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives

**3. Visual Learners**

- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.

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**Read 1a. Listen to Open Access Podcast Shows (and write papers)**

- English with Real World
- Nursing Show.com
- Military History Podcast

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**Reflect 2a. Cultural Blogs (e.g., Dr. Kim Foreman, San Fran State University, Come and See Africa Blog; http://comeandseeafrica.blogspot.com/)**
4. Tactile/Kinesthetic Learners
- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.

Do 4a. Podcast Productions and Shows

Framework #3: From Tinkering (10) to Tottering (10) to Totally Extreme Learning (10)...

Tinkering

Tinker #1. Video Scenario Learning Accounting Interviews and Preparatory Course Review Modules (Franklin University, cost and forensic accounting course)
Tinker #2. Webcast Lectures
(Tegrity, Echo360, Mediasite, etc.)

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

Tinker #3. Timeline Tools
(e.g., Steve Jobs' career, CNN, August 24, 2011)

Tinker #4. Video Animations and Simulations

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

Tinker #6. Case and Scenario Learning
(Kelley Direct, IU)
Tinker #7. Online Experiments (e.g., psychology)

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

Tinker #9. Track Life of a Scientist or Famous People (e.g., Brian J Ford, independent scientist)

Tinker #10. Online Portals of Rich Data

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**

(e.g., The scenario was structured on a series of videoconferencing and virtual classroom learning platforms, replicated by the Royal Veterinary College of London. The learning process utilized by the regional centers of the Global Classroom, which are spatially located in the specific field in favor of populations of the villages in the developing nations.)

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

**Totter #4. Multi-Site Events**

(e.g., William and Mary, March 3, 2011)

**Totter #5. Online Language Learning and Conversations**

(e.g., PalTalk, ITalki, Palabea, Babbel)

**Totter #6. Wikibooks, Wikipedia editing, wiki syllabi, wiki glossaries**

(Ron Owston, York University, Toronto)

**Totter #7. Podcast Productions and Virtual Performances for students of pronunciation class**

(e.g., Tzu-Su Chen, Taiwan)
Totter #8. Video Blogging

Totter #9. Podcasting Medical Lectures
(School of Dentistry, University of Michigan)

Totter #10. Uploading Mobile Books
(e.g., BookRix, http://www.bookrix.com/)

Totally Extreme Learning

Totally Extreme #1. Immediate Science
Ida (a transitional species) 47-Million-Year-Old Fossil
the Missing Link? (May 20, 2009)

Totally Extreme #2. Live Science
(Nautilus Live allows people to watch expeditions live &
listen to scientists in control rooms as discoveries made)
Totally Extreme #3. Armchair Archeology
UCLA Summer Digs Program

Totally Extreme #4. Adventure Learning
(e.g., GeoThentic, Earthducation, Polar Husky, GoNorth; Aaron Doering, Univ of Minnesota; cars and bikes--Dan Grec and Mark Beaumont)

Totally Extreme #5. The Last Ocean Project, Ice Stories, and Shark Theater (24 foot inflatable screen and outdoor ocean theater) to tiny island communities

Totally Extreme #6. South African teens get virtual mentoring from all over the world, by Danielle Berger, CNN, January 14, 2011

Totally Extreme #7. Open Teaching and Massive Open Online Courses (i.e., MOOC, David Wiley, George Siemens, Ray Schroeder)

Totally Extreme #8. International and Global Education and Competitions
(e.g., Global Game Jams, online role play, Global Videoconferencing)
Totally Extreme #9. Telepresence and Teleportec Systems (e.g., Cisco and HP)


http://www.youtube.com/watch?v=8DPWGlJAIvM (4:26 minutes)

Is this a revolution?

Who is Content Now?

Any Extreme Questions and Comments?
Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: http://worldisopen.com/
Email: curt@worldisopen.com