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

Curtis J. Bonk, Professor, Indiana University

http://mypage.iu.edu/~cjbonk/

July 2010
North Carolina Virtual Public Schools (growing 79% per year) (per Dr. Bryan Selker, Executive Director, North Carolina Virtual Public Schools Learn and Earn Online)

NCVPS Predicted Growth

September 5, 2010 (David Wiley)
Open Source goes to High School (Utah)

https://www.youtube.com/watch?v=soyve-i9zGk

September 2011
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 Farah, Fast Company

February 18, 2011
Ten great sites with free teacher resources eSchool News, Jenna Zwan

February 21-24, 2011
Graphic Facilitation, E-Learning and Distance Learning (ELI) Conference in Riyadh (Sir Tim Berners-Lee and Jimmy Wales)

April 12, 2011
NCTM Conference Session, Free Online Degrees; iSMART: Integration of Science, Mathematics, and Reflective Teaching (iSMART), University of Houston

Jen Chauvot and Mimi Lee, Univ of Houston
April 27, 2011
Moodle (41+ million users in 211 countries, 54,000 sites, 4.4+ million courses)

June 13, 2011
Massachusetts School Issues iPads to Every Student in Grade 6
http://www.wellesley.edu/news/story/17575/Massachusetts-School-Issues-iPads-to-Every-Student-in-Grade-6

June 15, 2011
EduComm Insider, 2(3) Announcement, $7 Million Grants Awarded to Help Boost College Readiness, Audrey Waters, Gore Foundation, Next Generation Learning Challenges (NGLC) Grant Program

July 7, 2011
Facebook says membership has grown to 750 million, USA Today, Jon Swartz

July 22, 2011
GETideas Channel, Cisco (Education Thought Leader Series uploaded to YouTube)
http://www.youtube.com/user/GETideas#f/g/u

August 2, 2011
September 15, 2010
Study: Online learning might be less effective for some, eSchool News, Dennis Carter

Classroom students scored 84.3 percent on the first exam in the economics course, and online students scored 83.3 percent.

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!

Answer:
The Web of Learning

Google

We are entering a jumping off point...
Elements of the Web's Next Generation

Is the World Flat or Open?
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 (e.g., YouTube)
- Electronic Collaboration and Interaction (synchronous and asynchronous)
- Alternate Reality Learning (Online Massively Multiplayer Games, 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!!!
Nature AND Nurture: Technology

Technology

Pedagogy

People, Society, Culture, etc.

Ten Learning Technology Trends of the Past Year...

September 15, 2010
Timeline of Technology for Teaching, NY Times

Technology of the 1980s

Radio Shack TRS-80 Model III

#1. 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, Paliabina, Babbel)

#2. Tablet Computers Hit (iPad)
April 10, 2010: Seton Hill Univ, 2,100 students an iPad and freshmen a 13-inch MacBook laptop
Feb 1, 2011: An Android Tablet Made Just for School, David Zave, Past Company
# Math and Spelling games on iPads

**eSchool News, May 27, 2011**

#3. Pocket Dictionaries and Digital Textbook Projects (Korea), July 6, 2011:

Home Run. In South Korea, all textbooks will be e-books by 2015. Spending past the US, South Korea will be digitizing reading materials in all public schools by 2015. Christian Science Monitor.

#4. Video Conferencing/Webcamming

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

#5. Social Networking Gaming

**December 24, 2010:** CityVille 16.6 million daily users, FarmVille 16.4 million. CityVille 61.7 million monthly users, FarmVille 56.8 million users. Mashable.

#6. E-Book Readers

**January 28, 2011:** Amazon: Kindle Books Finally Eclipse Paperbacks, Doug Asmuth

**March 4, 2011:** Why Amazon would be smart to give away the Kindle, March 4, 2011, CNN Tech, Amy Galvan

#7. Artificially Intelligent Computers

**February 18, 2011:** Watson dominated at "Jeopardy!" — but what else can it do? As IBM seeks new uses, man still has edge over machine, Dan Ferguso, USA Today.

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

Read 1. Online Article Portals and Databases (e.g., Chronicling America: Historic American Newspapers) (https://chroniclingamerica.loc.gov/)

Reflect 2. Scientist Blog Reflections (The LAST OCEAN Website and The Last Ocean Project; Cassandra Brooks)

Display 3. Concept Mapping Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Do 4. Podcast Productions and Shows (give kids the power!)
We are not motivating students with the technologies that they love!

Ok, Million Dollar Question: How do you motivate online learners? What words come to mind?

Framework #3: TEC-VARIETY Model 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: A. Video Course: Intros from Instructors.
   Yun Yun Chow, Open U Malaysia
   Making Art Lessons Come Alive with Web 2.0
   http://www.youtube.com/watch?v=B09vq2b1Gxg

2. Encouragement, Feedback, etc.: A. Vocab Sushi ($25 for 3 months)
   http://www.vocabushi.com/

3. Curiosity, Surprise, Unknown, Control: A. The Royal Channel
   (e.g., April 29, 2011: The Royal Wedding)
http://www.openstudy.com/learn/study/166e88e7e4b07f6f96000022

5. Autonomy, Choice, Control: A. Learning Match 
http://www.thelearningmatch.com/

6. Relevance, Meaningfulness: A. Google Art Project (new Google project that allows visitors to explore museums around the world and view hundreds of artworks) 
http://www.googleartproject.com/

7. Interactive, Collaborative: A. Open Study; 
http://openstudy.com/

8. Engagement, Effort: A. Time Tracker (e.g., Indy Race Tracker, May 29, 2011) 
http://www.indy500.com/track/racing/tracking/tracking.html

9. Tension, Challenge: A. iCivics; 
http://www.icivics.org/
10. Yields Products, Goals:
A. "Video Primers in an Online Repository for e-Teaching and Learning" V-PORTAL, TravellingEdMan (27 free/open YouTube videos), September 2010
http://www.youtube.com/user/TravellingEdMan

TEC-VARIETY Model for Online Motivation and Retention
- Tone/Climate
- Encouragement, Feedback
- Curiosity
- Variety
- Autonomy
- Relevance
- Interactive
- Engagement
- Tension
- Yields Products

Tinkering, Tottering, or Totally Extreme?

Tinkering

Tinker #1. Webcast Lectures
(Tegrity, Echo360, Mediasite, etc.)

Tinker #2. Track Life of a Scientist or Famous People (e.g., Brian J Ford, Independent scientist)
http://www.youtube.com/user/TravellingEdMan
Tinker #3. Online Experiments (e.g., psychology)

Tinker #4. Educational Simulations

Tinker #5. Online Self-Testing (e.g., self study in accounting, vocabulary, anatomy, chemistry, dissection, etc.)

Tinker #6. Anchored Instruction with Shared Online Video

Tinker #7. 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.)

Tottering
Totter #1. Bridges to World of Expert and Practitioners
(e.g., Watch or Listen to Online Conferences, Expert interviews, blogs, chats, etc.)

Totter #2. Global Class Videoconferencing

Totter #3. Video Blogging and Podcasting

Totter #4. Wikibooks, Wikipedia editing, wiki syllabi, wiki glossaries

Totally Extreme Learning

Totally Extreme #1.
TED talk from Adora Svitak, age 13, World's Youngest Teacher
**Totally Extreme #2. Live Science**
(Nautilus Live allows people to watch expeditions live & listen to scientists in control rooms as discoveries are made)

**Totally Extreme #3. Immediate Science**
(Ida, a transitional species 47-Million-Year-Old Fossil the Missing Link? (May 20, 2009))

**Totally Extreme #4. Armchair Archeology**
(UCLA Summer Digs Program)

**Totally Extreme #5. Adventure Learning**
(e.g., GeoThentic, Earthducation, Polar Husky, GoNorth; Aaron Doering, Univ of Minnesota; cars and bikes—Dan Grec and Mark Beaumont)

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


**Totally Extreme #7. Pocket School and Videoconferencing in Developing World**
(Paul Kim, Stanford, Rwanda, August 2010, Kigali Institute of Education linking up with universities in India and Germany through Satellite Internet video conferencing system. They were discussing Java programming.)
Poll: Is your brain mush?
1. Yes.
2. No.
3. Not sure yet...

It is both Nature AND Nurture as well as PEOPLE!!! Technology is just part of the Equation

Technology  
Pedagogy  
People, Society, Culture, etc.

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