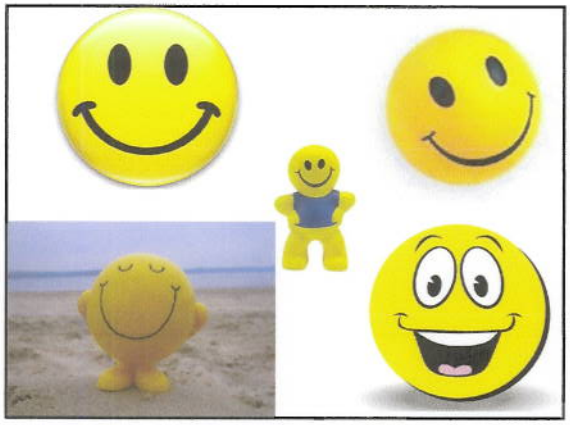
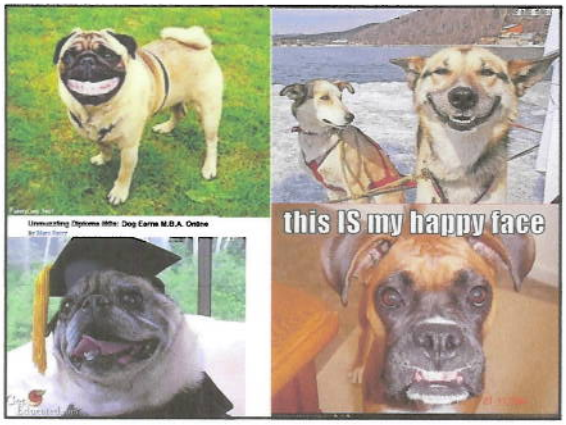
Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning

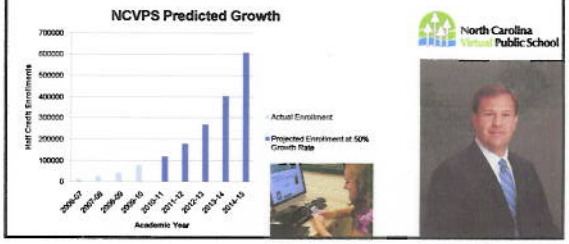
Curtis J. Bonk, Professor, Indiana University
cjbonk@indiana.edu
http://mypage.iu.edu/~cjbonk/





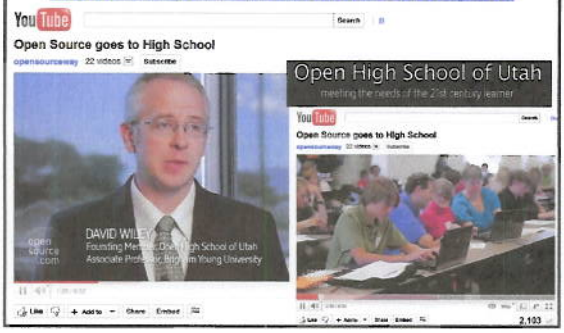
July 2010
North Carolina Virtual Public Schools (growing 79% per year)

(per Dr. Bryan Setser, Executive Director, North Carolina Virtual Public School Learn and Earn Online)

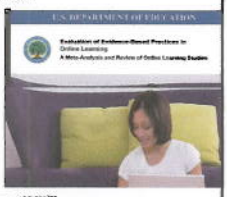


September 5, 2010 (David Wiley)
Open Source goes to High School (Utah)

http://www.youtube.com/watch?v=sovve-j3xGk



September 2011
Meta-Analysis Update: Blended and Fully Online Still Best!



Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies

U.S. Department of Education
Office of Planning, Evaluation, and Policy Development
Policy and Program Studies Service

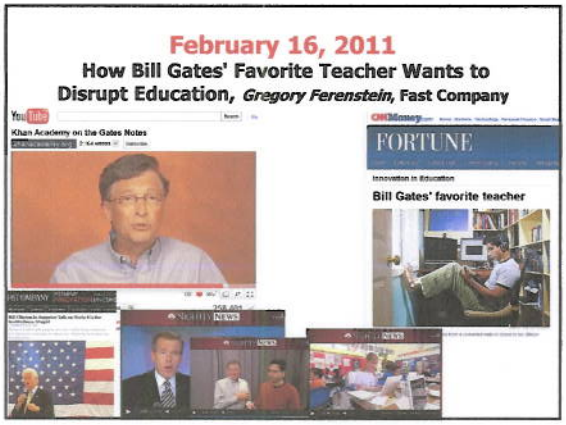
Revised September 2010

Prepared by
Barbara Means
Yukie Toyama
Robert Murphy
Marianne Bakia
Karla Jones
Center for Technology in Learning

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)

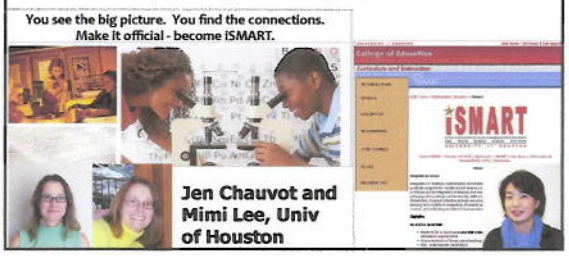
February 16, 2011
How Bill Gates' Favorite Teacher Wants to Disrupt Education, *Gregory Ferenstein*, Fast Company



February 18, 2011
Ten great sites with free teacher resources eSchool News, Jenna Zwang,
http://www.eschoolnews.com/2011/02/18/ten-great-sources-of-free-teacher-resources/print/

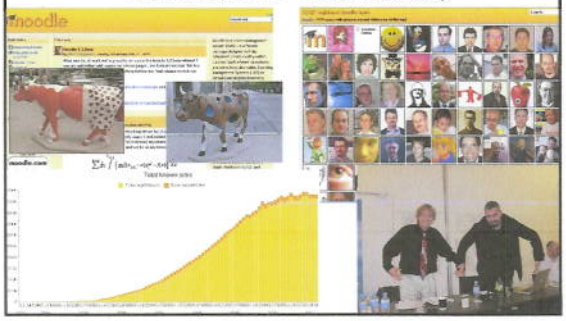
February 21-24, 2011
Graphic Facilitation, E-Learning and Distance Learning (ELI) Conference in Riyadh (Sir Tim Berners-Lee and Jimmy Wales)

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



April 27, 2011

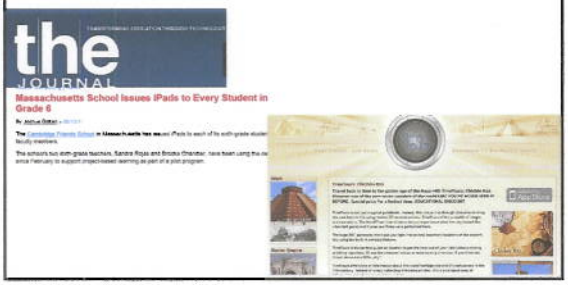
Moodle (41+ million users in 211 countries, 54,000 sites, 4.4+ million courses)



June 13, 2011

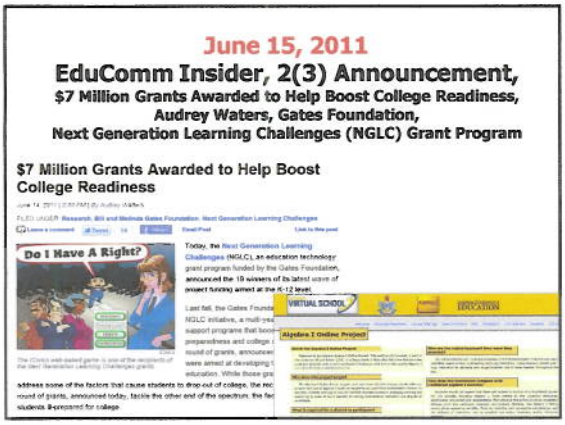
Massachusetts School Issues iPads to Every Student in Grade 6

http://thejournal.com/articles/2011/06/13/massachusetts-school-issues-ipads-to-every-student-in-grade-6.aspx



June 15, 2011

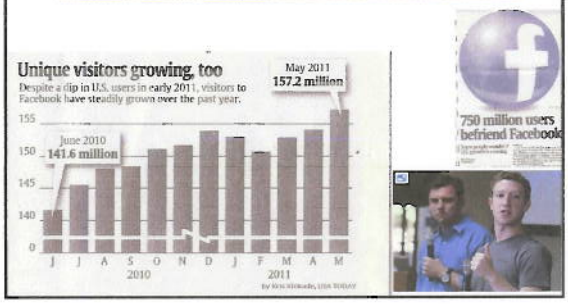
EduComm Insider, 2(3) Announcement,
$7 Million Grants Awarded to Help Boost College Readiness, Audrey Waters, Gates Foundation, Next Generation Learning Challenges (NGLC) Grant Program



July 7, 2011

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

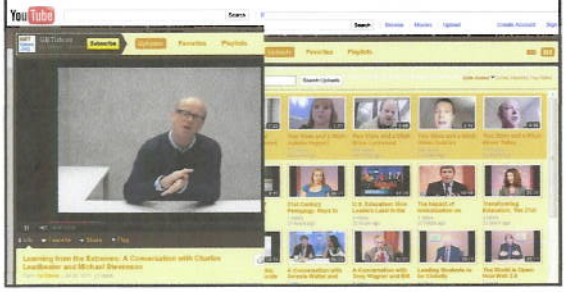
http://www.usatoday.com/tech/news/2011-07-06-facebook-skype-growth_n.htm



July 22, 2011

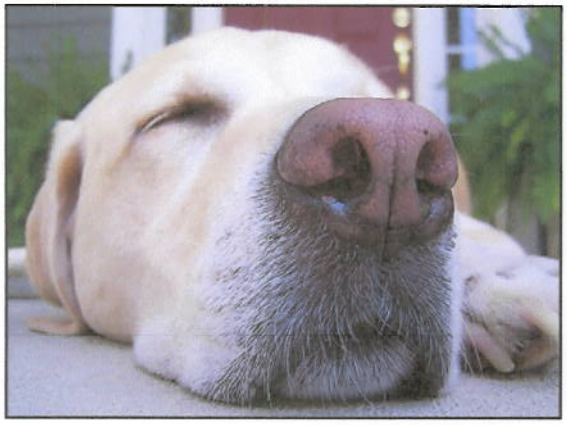
GETideas Channel, Cisco (Education Thought Leader Series uploaded to YouTube)

http://www.youtube.com/user/GETideas#g/u



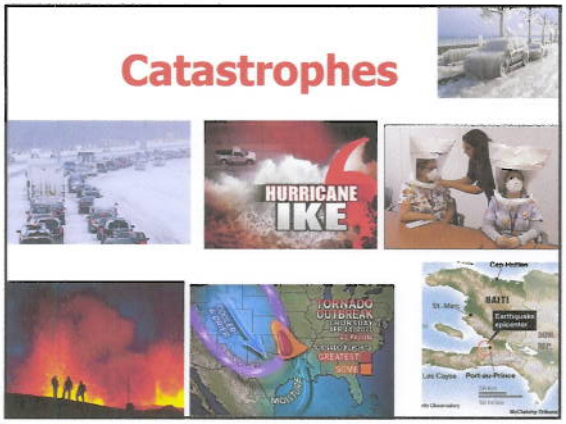
August 2, 2011

Stanford U. Offers Free Online Course in Artificial Intelligence, By Jie Jenny Zou, Chronicle of Higher Ed, http://www.ai-class.com/



But I am not Content!!!

Catastrophes

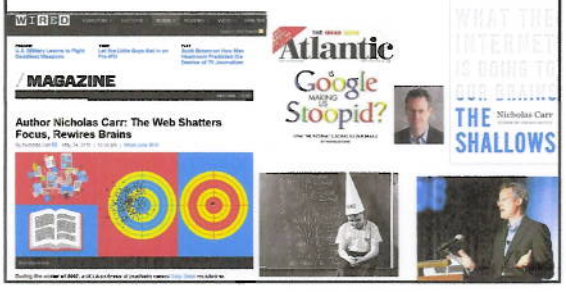


Shovelware

May 24, 2010

Author Nicholas Carr, The Web Shatters Focus, Rewires Brains, Wired

http://www.wired.com/magazine/2010/05/ff_nicholas_carr/



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.

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

NING

Google

PBWORKS

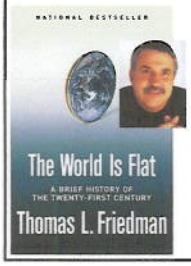
Blogger

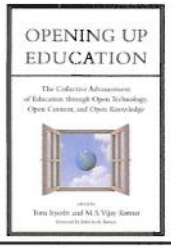
slideshare

We are entering a jumping off point...

Elements of the Web's Next Generation

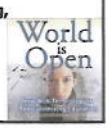
Is the World Flat or Open ?





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

- **W**eb Searching in the World of e-Books (i.e., Darwin)
- **E**-Learning and Blended Learning
- **A**vailability of Open Source and Free Software (e.g., Moodle)
- **L**everaged Resources and OpenCourseWare (e.g., MIT)
- **L**earning Object Repositories and Portals (i.e., shared content)
- **L**earner Participation in Open Info Communities (YouTube)
- **E**lectronic Collaboration and Interaction (sync and async)
- **A**lternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- **R**eal-Time Mobility and Portability (e.g., iPhone)
- **N**etworks of Personalized Learning (Blogs, RSS)



Audience Participation!

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

Triple Learning Technology Convergence of "WE-ALL-LEARN"

1. **Pipes:** The availability of tools and infrastructure for learning.
2. **Pages:** The availability of free educational content and resources (OER—Open Educational Resources).
3. **Participatory Learning Culture:** A move towards a culture of open access to information, international collaboration, and global sharing.

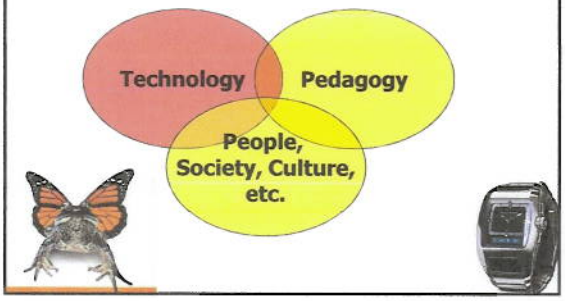
What if our minds were on fire for learning?

MINDS ON FIRE: OPEN EDUCATION, THE LONG TAIL, AND LEARNING 2.0. JOHN SEELY BROWN AND RICHARD ADLER, EDUCAUSE REVIEW, JANUARY-FEBRUARY, 2008.

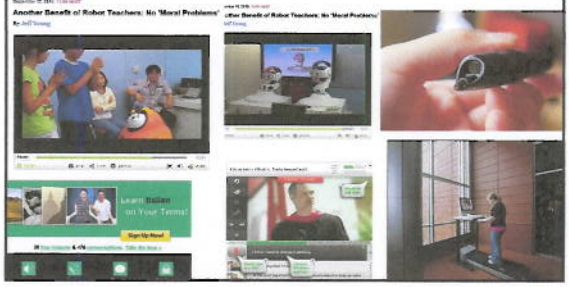
Curriki, Connexions, OpenCourseWare (e.g., MIT OCW Highlights for High School)

Poll: Who finds it hard to keep track of all the technology-related changes today???

Nature AND Nurture: Technology



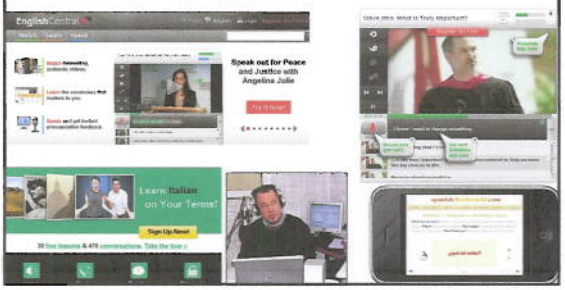
Ten Learning Technology Trends of the Past Year…



September 15, 2010
Timeline of Technology for Teaching, NY Times
http://www.nytimes.com/interactive/2010/09/19/magazine/classroom-technology.html?ref=magazine

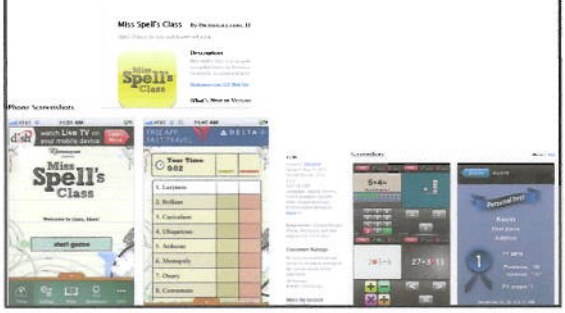
Technology of the 1980s

#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, Palabea, 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 Zax, Fast Company

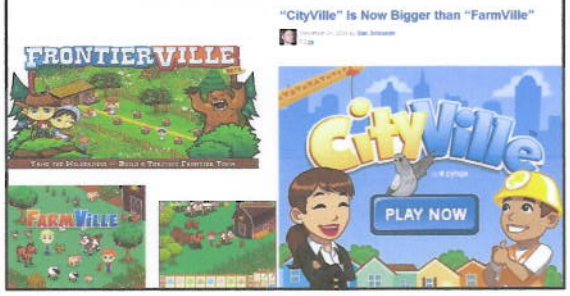
Math and Spelling games on iPads
eSchool News, May 27, 2011



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

#4. Video Conferencing/Webcaming
December 20, 2010: Skype for iPhone adds two-way video calling, CNet Reviews

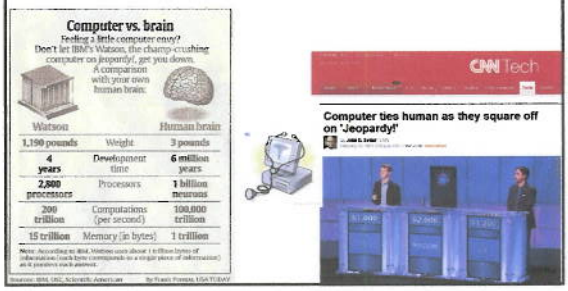
#5. Social Networking Gaming
December 24, 2010: *CityVille* 16.8 million daily users, *FarmVille*'s 16.4 million. *CityVille* 61.7 million monthly users, *FarmVille* 56.8 million users. Mashable.



#6. E-Book Readers
January 28, 2011: Amazon: Kindle Books Finally Eclipse Paperbacks, Doug 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.

#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 Fergano, USA Today.



8. Mobile Apps (e.g., Tutors), April 7, 2011: Tutor.com Releases First Ed App that Connects Students to an Expert Tutor

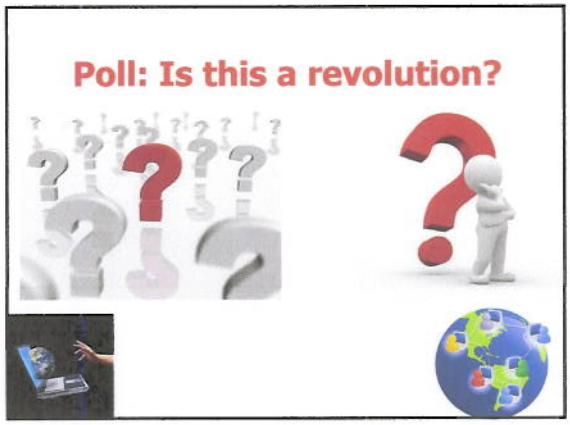
#9. First Look at Google+ Hangouts, June 29, 2011

http://www.youtube.com/watch?v=KLf9jzFvkTA&annotation_id=annotation_3898528&feature=iv

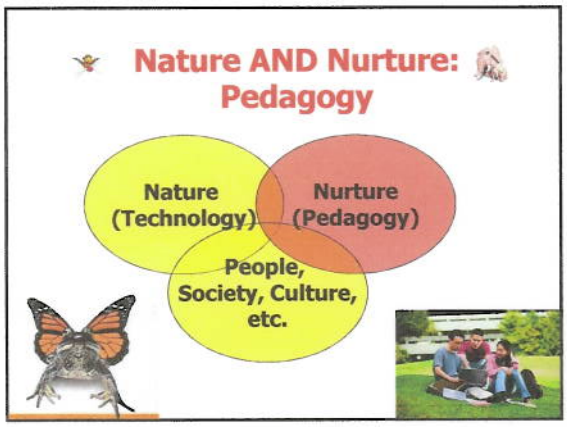
#10. Facebook introduces video calling, Eric Stoller, July 6, 2011, Inside Higher Ed

http://www.insidehighered.com/blogs/student_affairs_and_technology/facebook_introduces_video_calling

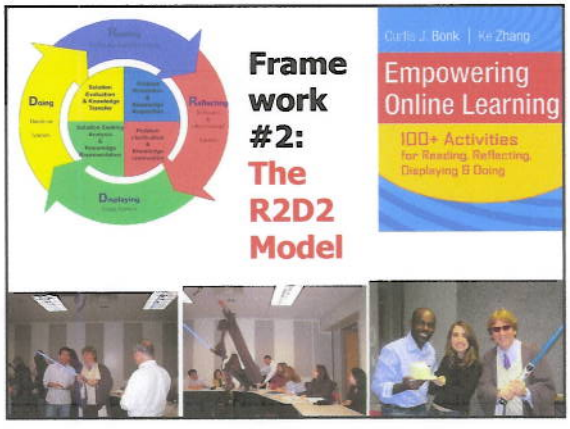
Poll: Is this a revolution?

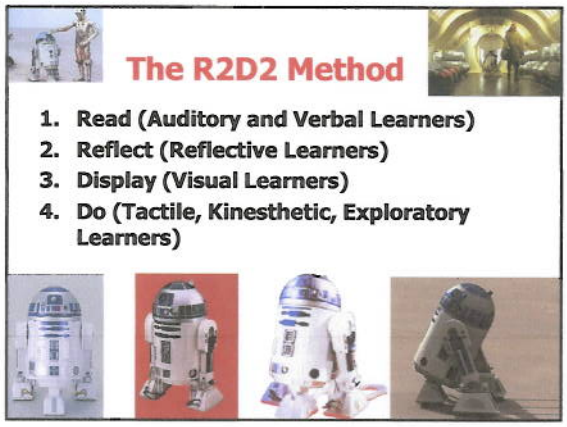


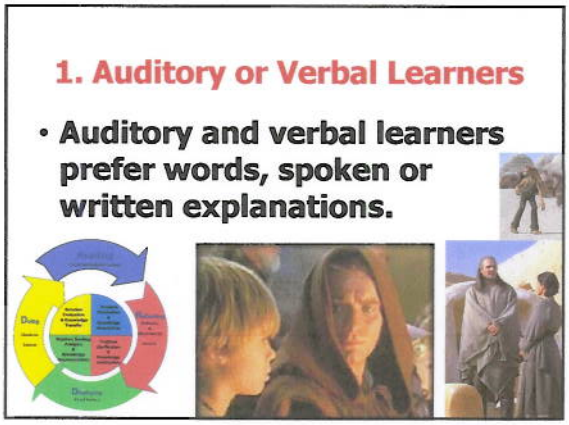
Nature AND Nurture: Pedagogy

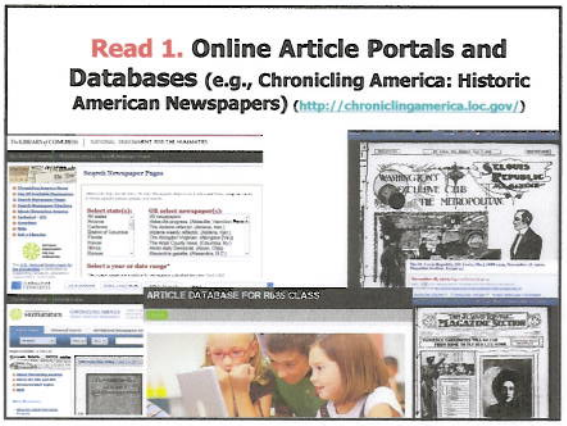


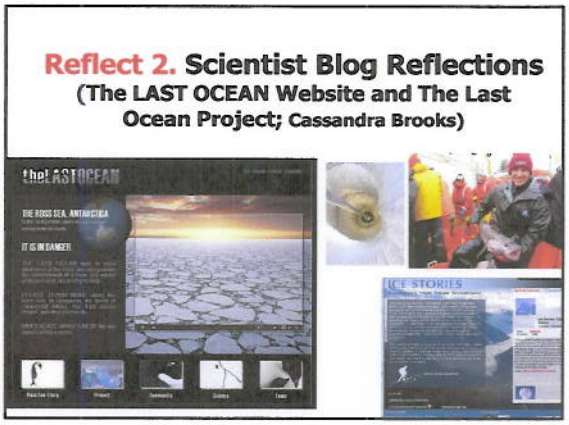
Framework #2: The R2D2 Model

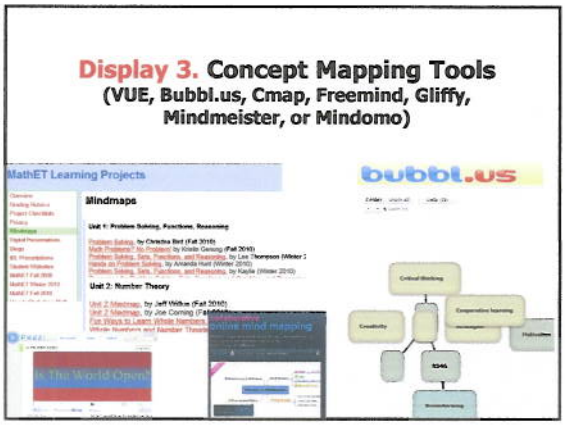


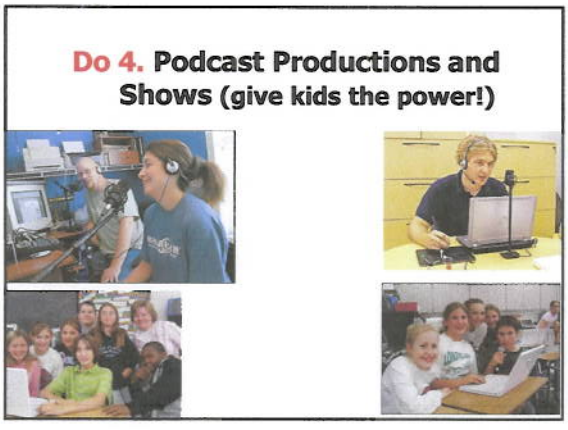

The R2D2 Method
1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)


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) (http://chroniclingamerica.loc.gov/)
ARTICLE DATABASE FOR RISS CLASS


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)
MathET Learning Projects
Mindmaps
bubbl.us


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=BO9rqJD1GXo

2. Encouragement, Feedback, etc.: A. Vocab Sushi ($25 for 3 months)

http://www.vocabsushi.com/

3. Curiosity, Surprise, Unknown, Control: A. The Royal Channel

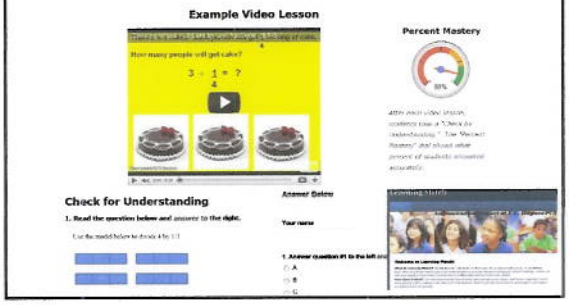
(e.g., April 29, 2011: The Royal Wedding)

4. Variety, Novelty, Fun, Fantasy:
A. History for Music Lovers: The French Revolution ("Bad Romance" by Lady Gaga)

http://www.youtube.com/user/historyteachers?blend=6&ob=5#p/f/12/kJULC0jsgdA

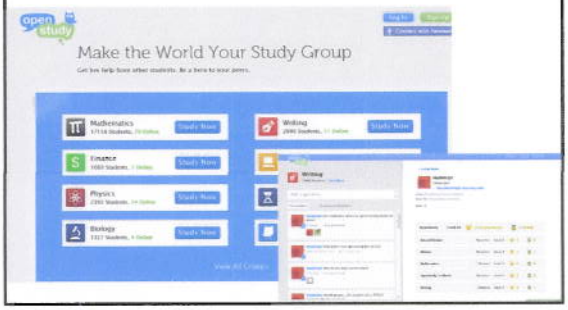
5. Autonomy, Choice, Control:
A. Learning Match

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)

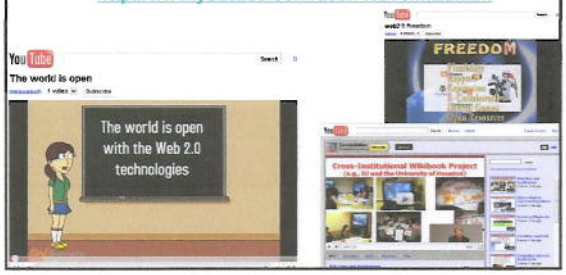
http://www.indystar.com/interactive/article/59999999/SPORTS010101/306690474/2011-Indianapolis-500-Race-Tracker

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, TravelinEdMan (27 free/open YouTube videos), September 2010

http://www.youtube.com/user/TravelinEdMan

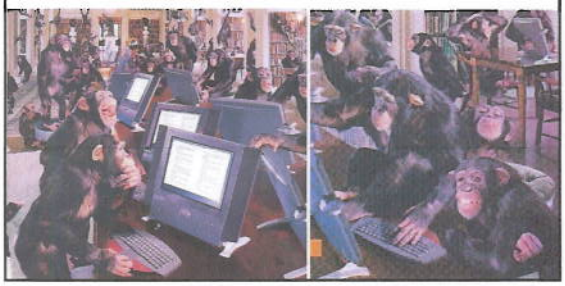


TEC-VARIETY Model for Online Motivation and Retention

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.)

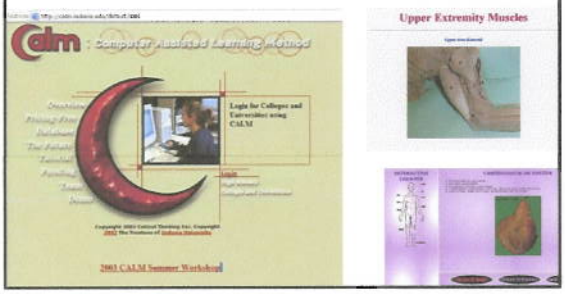
Tinker #2. Track Life of a Scientist or Famous People (e.g., Brian J Ford, independent scientist)

http://www.youtube.com/user/tellymonitor#p/a/u/1/LhGeApsKjasr

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.)

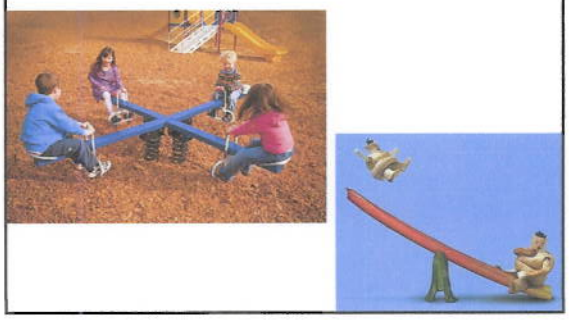


Tinker #6. Anchored Instruction with Shared Online Video

Tinker #7. Online Portals of Rich Data

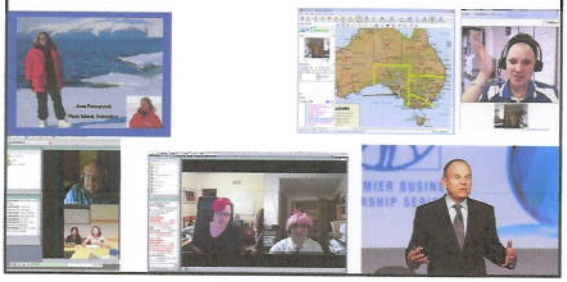
United Nations Opens World Digital Library, Turning the Pages from the British Library, etc. (history, culture, literature, writing, art, etc.)

Tottering



Totter #1. Bridges to World of Expert and Practitioners

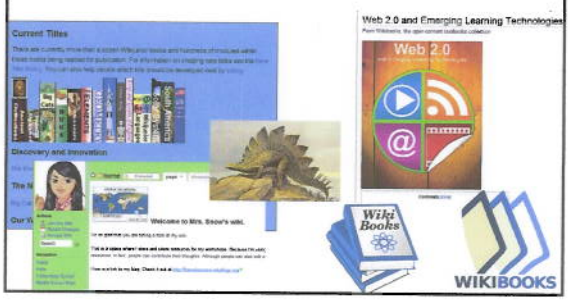
(e.g., Watch or Listen to Online Conferences, Expert interviews, blogs, chats, etc.)



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 a discoveries 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

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

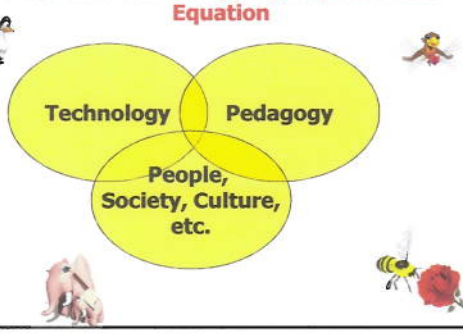
Totally Extreme #7. Pocket School and Videoconferencing in Developing World

(Paul Kim, Stanford, Rwanda, August 2010, Kigali Institute of Education linking up with universities in India and Cameron 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



Any Extreme Questions and Comments?

Slides at: TrainingShare.com
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