Active Learning with Technology: Myths, Magic, and Mucho Motivation

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this IS my happy face
Yonsei University Library, Seoul, Korea

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

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

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

I am not Content!!!
Those in hurricanes!
(Katrina, August 2005; Ike, Sept 2008; Irene, August 2011)

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

What about those in Lovely Kansas...?

Is the World Flat?

The World Is Flat
Thomas L. Friedman

The World Is Flat Broke
Thomas L. Friedman

Or is it Open?

It is very open!
(Korea, the Philippines, Norway, etc.)
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)
- Leverage 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 (sync and async)
- Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- Real-Time Mobility and Portability (e.g., iPhones)
- Networks of Personalized Learning (Blogs, RSS)

Audience Participation!

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

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

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.

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
The Web of Learning

We are entering a jumping off point...

Elements of the Web's Next Generation

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

A Vision of Today's Students

Jumbo Motivation is Needed!

Ok, Million Dollar Question: How do you motivate online learners? What Words come to mind?
Motivation Research Highlights
(Jere Brophy, Michigan State University)
1. Supportive, appropriate challenge, meaningful, moderation/optional.
2. Teach goal setting and self-reinforcement.
4. Novelty, variety, choice, adaptable to interests.
5. Game-like, fun, fantasy, curiosity, suspense, active.
6. Higher levels, divergence, dissonance, peer interaction.
7. Allow to create finished products.
8. Provide immediate feedback, advance organizers.
9. Show intensity, enthusiasm, interest, minimize anxiety.
10. Make content personal, concrete, familiar.

I even reflected on this for a moment...and then something magical happened...

Framework #2: 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. Public Commitments:
Have students share how they will fit the coursework into their busy schedules

B. Favorite Websites
1. Everyone posts 1-2 of their favorite Websites and explain why.
2. Peers comment on or rate them.

1. Tone/Climate: D. Video Course Intros
(examples from Northern Virginia Community College and Indiana University KDI (online MBA program))
Yun Yan Chew, Open U. Malaysia. Making Art Lessons Come Alive with Web 2.0
http://www.youtube.com/watch?v=BO9reaJD1GxO
2. Encouragement, Feedback, etc.:
A. Online Self-Testing (e.g., self study in vocabulary, anatomy, chemistry, dissection, etc.)

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

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

2. Encouragement, Feedback, etc.:
D. Online Accounting Lessons (e.g., Lyryx; https://lif.i.lyryx.co)

2. Encouragement, Feedback, etc.:
E. Blog and Website Polling (e.g., BlogPolls, BlogPoll, MicroPoll, etc.)

Still, I graduated
May 16, 1981, 10:00 am,
Warhawk Stadium
3. Curiosity, Fun:
A. Online News
(Politics, Giant jellyfish, Tiny T. rex, and Ardi)

3. Curiosity, Fun:
B. Online Social Networking Games
(e.g., scrabble, hangman, etc.)

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

3. Curiosity, Fun: D. Track a
Scientist, Scholar, Celebrity, Writer
(e.g., Biography.com, biography online,
FamousPeople.com)

4. Variety, Novelty:
A. Cool Resource Provider or Tech Demos

4. Variety, Novelty, Fun, Fantasy:
B. Random Lists (Random.org—clocks, coins,
playing cards, dice, integers, passwords, jazz
scales, lists, sequences, etc.)
4. Variety, Novelty, Fun, Fantasy:
C. Timers (Stopwatches, Countdown Timers, Stopwatch Bombs, etc.: http://www.online-stopwatch.com/countdown-timer)

5. Autonomy, Choice: A. Online Literature Search (Class Google Jockeys) (links to text, soundtracks, video clips, etc.)

5. Autonomy, Choice:
B. Web Exploration Assignments

1. Complete Works of Charles Dickens Online: http://dickens-online.org.uk/
4. Einstein Archives Online: http://www.research.berkeley.edu/Einstein

6. Relevance, Meaningfulness:
A. Online Cases (e.g., Mark Braun, IU)

6. Relevance, Meaningfulness:
B. 60 Second Recap, Jenny Sawyer
http://www.60secondrecap.com/
Actress to students: Lend me your earbuds! English major, 24, rambunctiously recap the classics in 60-second Web videos; By Greg Topper; USA TODAY, September 2009

6. Relevance, Meaningfulness:
C. Tour an Online Oil Drilling Site or Role Play Situations (i.e., BP)
http://www.youtube.com/watch?v=twJ5BlcAyTs
7. Interactive, Collaborative:
A. Working In Virtual Teams
(e.g., Collanos, Ning, Groove, SharePoint, Google Docs)

7. Interactive, Collaborative:
B. Collaborative Video Annotation
Creating annotated discussions: An asynchronous alternative, Craig Howard
and Rodney Hearne, International Journal of Design for Learning, 2(1)
http://journals.openedition.org/ijdl/267

8. Engagement, Effort:
C. Dr. Monica Rankin's class, UT Dallas, Cuban Revolution (April/May 2011)
http://www.youtube.com/watch?v=Q6Qf1kPo98

8. Engagement, Effort:
A. Flash, 3-D Visualization, & Laboratory Software

8. Engagement, Effort:
B. Flash, 3-D Visualization, & Laboratory Software

8. Engagement, Effort:
C. Time Tracker (e.g., Indy Race Tracker, May 29, 2011)

http://www.theguardian.com/world/interactive/2011/jul/12/middle-east-protests-arab-spring

8. Engagement, Effort: E. National Geographic Prehistoric Timeline


9. Tension, Challenge, etc.:

A. Ethical Debates

10. Yields Products, Goals:

A. More Student YouTube Products

B. Photo Festivals and Competitions

(e.g., COFA at UNSW, Scrapblog, flickr, etc.)

http://www.youtube.com/watch?v=U0zq4z6hrmc
TEC-VARIETY Model for Online Motivation and Retention
- Tone/Climate
- Encouragement, Feedback
- Curiosity
- Variety
- Autonomy
- Relevance
- Interactive
- Engagement
- Tension
- Yields Products

Do you feel Jumbo Motivation?
Poll #1: How many ideas did you get so far?
1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.

Cards and Commitments:
Stop and Share:
Which principle of TEC-VARIETY do you use?

Where Are You R2D2?: Introducing Read, Reflect, Display, and Do Model

Framework #3:
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 1a. Learning Planet: Interactive Glossary
Umida Khiakmatilleeva, Dec. 2011, P540
http://learningplanet.shutterfly.com/

Read 1b. Listen or Read to Open Access Expert Podcast Shows and Blogs

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

Reflect 2a. Cultural Blogs (e.g., Dr. Kim Foreman, San Fran State University, Come and See Africa Blog: http://comeandseeafrica.blogspot.com/)

Reflect 2b. Critical Friend Blog Postings (Kristen and Susan)
3. Visual Learners

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

Display 3a. Wordle

Display 3b. Videos for clinical education (Sungkyunkwan University School of Medicine, www.mededu.or.kr)

Display 3c. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Giffy, Mindmeister, or Mindomo)

Display 3d. Interactive Biology

Display 3e. Interactive Maps (e.g., New USDA climate zone map reflects northward warming trends, by Jenda Lloyd, USA TODAY, January 25, 2012)
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. Singing YouTube Summaries

Do 4b. Prezi Summaries

Do 4c. Podcast Productions and Shows

Do 4d. Paired Article Critiques in Blogs

- Students sign up to give feedback on each other's article reviews posted to their blogs.

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<th>Article</th>
<th>Student Critiques</th>
<th>Student Peer Reviews</th>
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Do 4e. Virtual Microscopes

(Sungkyunkwan University School of Medicine, www.medodu.or.kr)
Do 4f. Virtual Quizzes (Sungkyunkwan University School of Medicine, www.mededu.or.kr)

Do 4g. Wikibook or Wikipedia Editing or Critiques
- Ask students to critique a wikibook or page from Wikipedia

Try the R2D2 and TEC-VARIETY!
Poll #2: Is your brain mush?
1. Yes.
2. No.
3. Not sure yet...

Framework #4:
From Tinkering to Tottering to Totally Extreme Learning...

Tinkering

Tinker #1. Video Scenario Learning Accounting Interviews and Preparatory Course Review Modules (Franklin University, cost and forensic accounting course)
https://www.youtube.com/watch?v=3xK4Zz9aU1A&feature=youtu.be

2/1/2012
**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
United Nations Opens World Digital Library. Turning the Pages from the British Library, etc. (history, culture, literature, writing, art, etc.)

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

**Tottering**
Totter #2. Global Class Videoconferencing and Remote Lands  
(e.g., The seminar was conducted on a series of videoconferences and other online distance learning platforms, supported by the Ministry of the Interior and Development of the Regional Government of Tainan, Taiwan, which acted as a mediator in the specific field of health regulations of the villages in the province of Tainan.)

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

Totter #10. Student Film Competitions
Verily Tan, Recollections from R685, Fall 2011
http://vimeo.com/33900590 (Verily)
http://vimeo.com/33123125 (Anjali)
http://www.youtube.com/watch?v=K297hnZ7k68 (Vem)

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 a discoveries made)
**Totally Extreme #3. Armchair Archeology**
UCLA Summer Digs Program

**Totally Extreme #4. Adventure Learning**
(e.g., GeoThentic, Earthducation, Polar Huyk, 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**

**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 Jam, online role play, Global Videoconferencing)
E-learning Website

DREAMS: Design Research for an Engaging and Active Mobile System

2. Outdoor Adventure Learning: Peter Hasky, Earth Education, the Lost Coast Project, Instructables.com, Motion Boutique, Education: Explo to Explore, Renk, Nautilus Loco.
4. Virtual Education: Khan Academy, Open Yale, Witten Alpha, MIT OCW, Sophia.
5. Florida Virtual School, Florida Virtual, Open High School of Utah.

Is this a revolution?

Time to Stretch the Edges?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Books: http://worldisopen.com/
Email: curt@worldisopen.com