

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/>



The role of the instructor being disrupted...

(Instructor as Cat Herder?)



Learning is More Interactive and Collaborative



From Instructor as Credit Manager...to...



1. Instructor as Counselor



2. Instructor as Consultant



3. Instructor as Conductor



4. Instructor as Course Ambassador



5. Instructor as Curator



6. Instructor as Concierge



7. Instructor as Camping Trip Guide

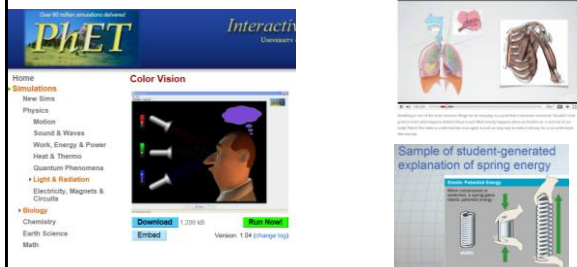


8. Instructor as Cultivator



Tinker #5. Interactive Labs and Simulations

<http://phet.colorado.edu/en/simulation/energy-skate-park>

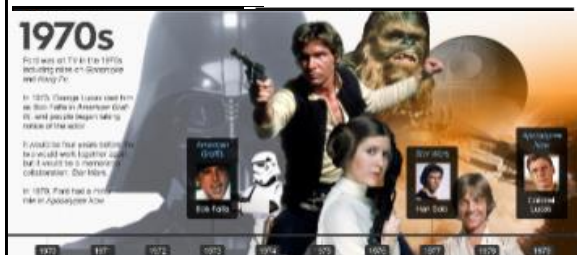


Tinker #6. Online Role Play or Debate (e.g., documentary production)



Tinker #7. Reflect on Virtual Timelines (Dipity, xtimeline, Simile, etc.)

<http://www.usatoday.com/news/nation/story/2011-09-22/steve-jobs-dies/50672498/1>
<http://usatoday30.usatoday.com/tech/news/story/2011-09-22/steve-jobs-dies/50672498/1>
<http://www.cnet.com/news/steve-jobs-a-timeline/>



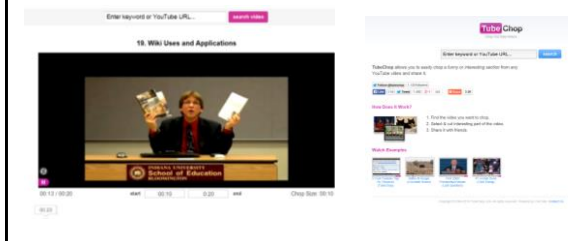
Tinker #8. Online Database Activities (e.g., WolframAlpha)

<http://www.wolframalpha.com/>



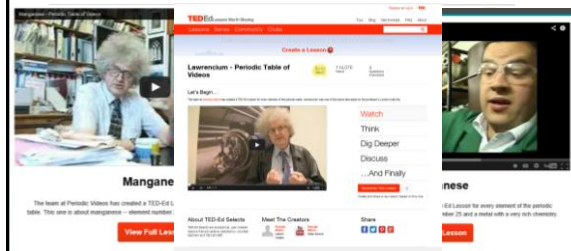
Tinker #9. Short Video Anchors (e.g., TubeChop of V-PORTAL: Video Primers in an Online Repository of e-Teaching and Learning)

Curt Bonk: <http://www.tubechop.com/watch/378752>



Tinker #10. Videos with Test Questions (e.g., TEDEd) (Lessons about every single element on the periodic table)

<http://ed.ted.com/periodic-table-video-lessons>



Tinker #11. Video Tutorials, Demonstrations, and How-To's

Investopedia (videos, tutorials, etc.)

<http://www.investopedia.com/video/play/deferred-revenue/>

Deferred Revenue



Tinker #12.

Create Screencasted Tutorials

(Jing, GoView, Screenr, Overstream, Screencast-o-Matic; see http://tec-variety.com/TEC-Variety_links-examples-resources.pdf)

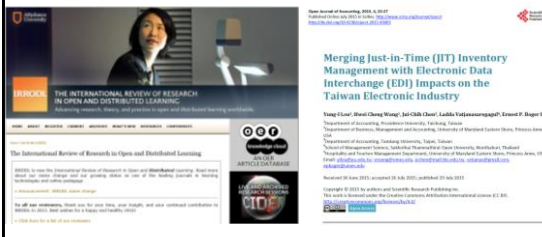
Screencasting Toolkit



Tinker #13.

Reading from Open Access Journals (e.g., PLOS, IRRODL, etc.)

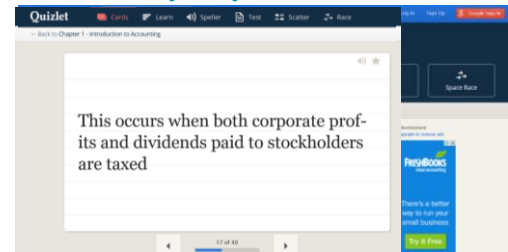
<http://www.plos.org/>; <http://www.plosbiology.org/>; <http://www.plosgenetics.org/>



Tinker #14.

Online Practice Tests and Interactive Flash Cards

<http://quizlet.com/>



Tottering



Totter #1. Multiple Guest Experts

Sara de Freitas and Jim Hensman, U of Coventry, UK

(<https://connect.la.edu/p21e1yx568x/>)

Jay Cross, Berkeley (<https://connect.la.edu/p4bty5sroh/>)



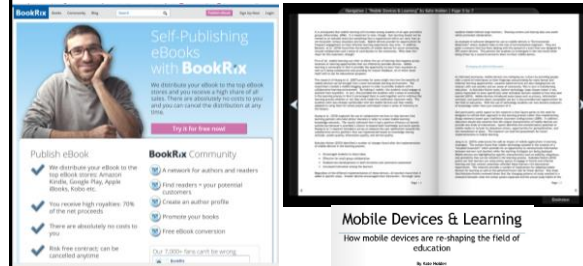
January 20 and 26, 2016 (Zoom)
Totter #2.

Weekly Guest Expert Chats

R511 Chat with Mike Molenda, IU
 R511 Chat Charles Graham, BYU



Totter #3. Author Mobile Books
 (e.g., BookRix, <http://www.bookrix.com/>)



**We are entering a jumping
 off point...**



You Want Totally Extreme?

Apple's new 'spaceship' campus: What will the neighbors say?, Doug Gross, CNN, May 22, 2012
http://www.cnn.com/2012/05/22/tech/innovation/new-apple-campus/index.html?hpt=hp_tech1



August 5, 2015
Totally Extreme #1. Shubham Jaglan
 Overwhelmed by "Dream" Return Home After
 Double World Championship
 Disha Chopra, NDTV Sports

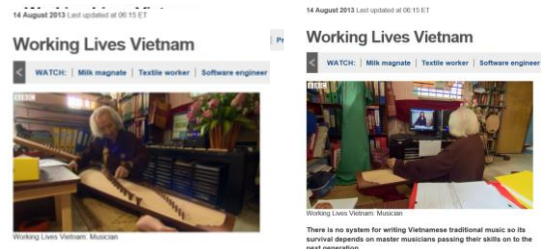
<http://sports.ndtv.com/golf/news/24655-shubham-jaglan-overwhelmed-by-dream-returns-home-after-double-world-championship>
<http://www.ndtv.com/video/player/news/india-s-golf-prodigy-shubham-jaglan-returns-home-to-hero-s-welcome/372618>



Totally Extreme #2.

Teach from Vietnam to the World
BBC News Asia, August 14, 2013

Even though he is now very elderly Vinh Bao (age 96) still teaches music, using his computer to coach pupils across the globe.
<http://www.bbc.com/news/world-asia-23497559>



Totally Extreme #3. Adventures of a Teenage Polyglot New York Times, March 9, 2012, John Leland



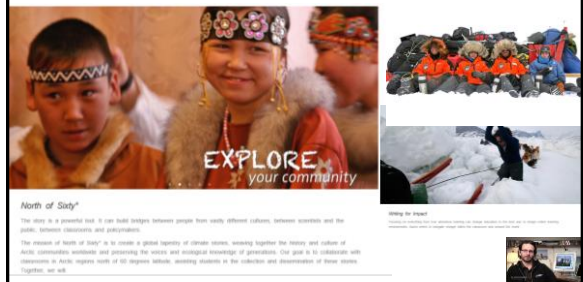
October 31, 2014 Totally Extreme #4. Penguin Science (Penguin Cam), Jean Pennycook



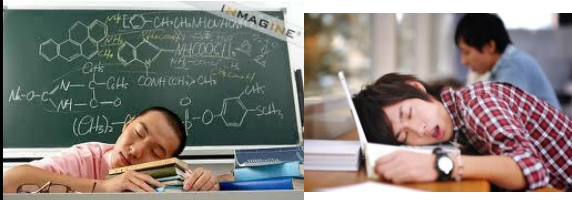
Totally Extreme #5. October 27, 2012 MOOC Office Hours in Other Countries Chuck Severance, (U Michigan/Coursera) in Barcelona



Totally Extreme #6. Adventure Learning about the Environment (e.g., North of 60, GeoThentic, Earthducation, see Aaron Doering, Chasing Seals; <http://chasingseals.com/>)



Needed: New Models of Motivation and Engagement



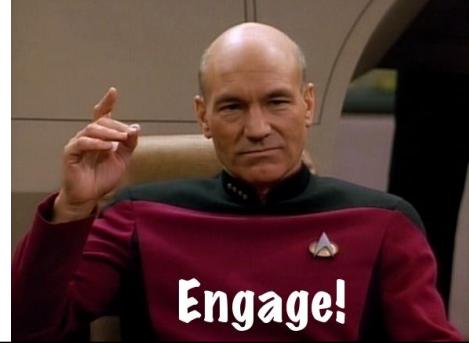
How do we engage online?



What did Jean-Luc Picard say?



That's right, Engage!



Poll: Million Dollar Question: What words come to mind when I say that I want to motivate learners?



Motivation Research Highlights (Jere Brophy, Michigan State University)

1. **Supportive**, appropriate **challenge**, **meaningful**, moderation/optimal.
2. Teach **goal setting** and self-reinforcement.
3. Offer **rewards** for good/improved performance.
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.



Drive: The Surprising Truth About What Motivates Us Daniel Pink (2009)

Motivation 3.0



Mindset: The New Psychology of Success Carol Dweck (2006)

<http://mindsetonline.com/index.html>
<http://mindsetonline.com/testyourmindset/step1.php>



Intrinsic Motivation

“...innate propensity to engage one’s interests and exercise one’s capabilities, and, in doing so, to seek out and master optimal challenges

(i.e., it emerges from needs, inner strivings, and personal curiosity for growth)

See: Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. NY: Plenum Press.



Framework: 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

Introducing the free “TEC-VARIETY” Framework...

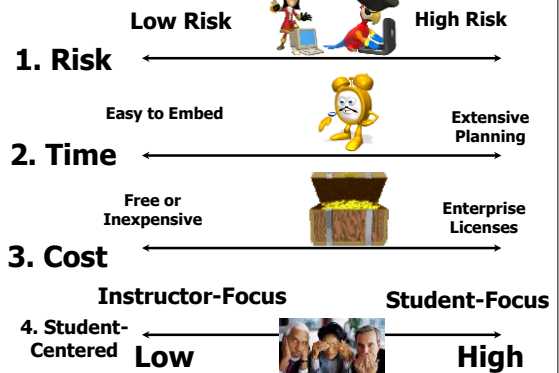
<http://tec-variety.com/>
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>



在线学习动机与激励: TEC-VARIETY 模型

——激励和留住在线学习者的 100 个活动

作者: Curtis J Bonk & Elaine Khoo IU

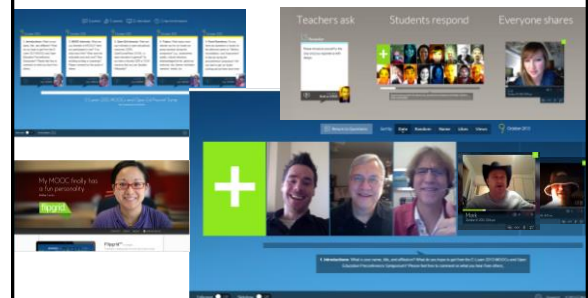


Examples of TEC-VARIETY

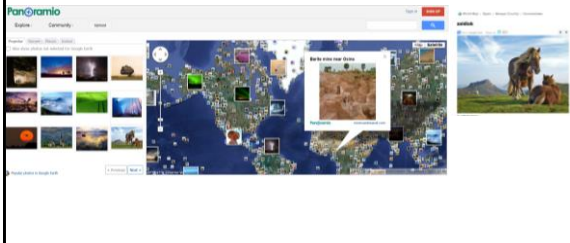


1. Tone/Climate: A. Threaded Video Discussions, e.g., Flipgrid

<http://flipgrid.com/#429f88c5>



1. Tone/Climate: B. Share Visuals of Favorite Places (e.g., Panoramio, <http://www.panoramio.com/>)



1. Tone/Climate: C. Instructor Course Introductions

(Theatre 10 Intro Video, October 7, 2014, Elizabeth Dale, West Valley College)

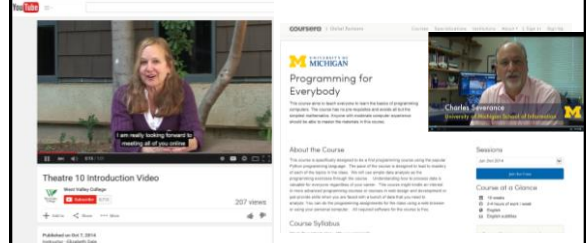
<https://www.youtube.com/watch?v=Wzbzc3QiiA>

Chuck Severance, U Michigan/Coursera) in Barcelona

<http://www.youtube.com/watch?v=JzNHvmSv8T1>

Chuck Severance, University of Michigan

<https://www.coursera.org/course/pythonlearn>



2. Encouragement, Feedback, etc.: A. Demonstrations and Tutorials Emerging technology specialist, IU UITs, Nitocris Perez, May 29, 2014 <http://inside.iub.edu/features/videos/2014-05-29-inub-vid-cib.shtml>



2. Encouragement, Feedback, etc.: B. Voice/Audio Feedback

Vocaroo: <http://vocaroo.com/>

<http://vocaroo.com/delete/s0x8moQAYAiui/a37bbc9408bb8c95>
(Recorded by Curt Bonk for the Open University of China)



3. Curiosity, Fun: A. Something in the News

September 5, 2014 (Dreadnoughtus)

<http://www.usatoday.com/story/tech/2014/09/04/dinosaur-skeleton-discovered/15031803/>

March 3, 2016

Scientists to drill at site of dinosaur-killing asteroid crater, Jareen Imam, CNN

<http://www.cnn.com/2016/03/04/world/scientists-drill-impact-crater-irpf/index.html>

October 23, 2014: Goofy dinosaur blends Barney and Jar Jar Binks, SF Gate

<http://www.sfgate.com/news/science/article/Goofy-dinosaur-blends-Barney-and-Jar-Jar-Binks-58600931a>



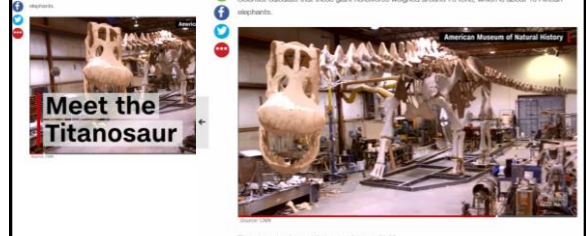
January 14, 2016

3. Curiosity, Fun:

B. Something in the News

Move over T. rex, new dinosaur unveiled, Amanda Jackson, CNN

<http://www.cnn.com/2016/01/14/living/titanosaur-new-dinosaur-on-display-new-york-irpf/>



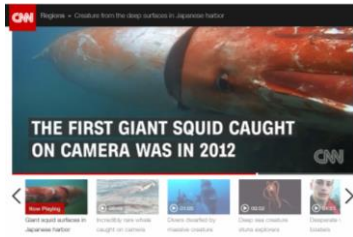
December 28, 2015

3. Curiosity, Fun:

C. Something in the News

Creature from the deep surfaces in Japanese harbor, giant squid, Euan McKirdy and Junko Ogura, CNN

<http://edition.cnn.com/2015/12/28/asia/toyama-japan-giant-squid/index.html>



September 7, 2015

3. Curiosity, Fun:

D. Something in the News

New 'Superhenge'? Remains found near Stonehenge, Monica Sarkar, CNN

<http://www.cnn.com/2015/09/07/europe/new-superhenge-discovery/index.html>

New 'Superhenge'? Remains found near Stonehenge



3. Curiosity, Fun:

E. Something in the News

(e.g., This may be the oldest surviving Photo of a human, November 7, 2014, CNN, Brandon Griggs; But this image, taken in Paris, France, in 1838)

http://www.cnn.com/2014/11/06/living/oldest-photograph-human-daguerre/index.html?top_14kong



3. Curiosity, Fun:

F. Virtual Expeditions

July 23, 2015

What Google's virtual field trips look like in the classroom, eSchool News, Stephen Noonoo



June 12, 2015

3. Curiosity, Fun: G. Something in the News and Infographic

Twitter CEO Dick Costolo replaced by co-founder Jack Dorsey, Laura Onita

<http://enrth.theist.org/news/2015/jun/twiter-costolo-dorsey.cfm>



3. Curiosity, Fun:

H. Tracking the Life of a Computer Scientist (bio.com)

<http://www.biography.com/people/steve-jobs-9354805>
<http://www.biography.com/people/ada-lovelace-20825323>



[illegible][illegible][illegible]

Three light bulbs are shown side-by-side. The first bulb on the left is white with a green background and has five additional sockets protruding from its top. The middle bulb is white with a blue background and contains a small globe of the Earth. The third bulb on the right is white with a purple background and is filled with brown hair.

7. Interactive, Collaborative: A. Negotiate Meanings Online

(e.g., PiratePad: <http://meetingwords.com/>)
<http://blogs.elon.edu/technology/7-collaborative-writing-applications-for-group-projects-or-journals>
MeetingWords, Google Docs, NowComment, MixedInk



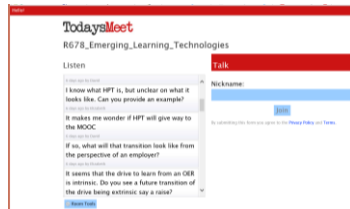
7. Interactive, Collaborative: B. Virtual Sharing Walls, April 6, 2015

e.g., Padlet (What is your secret recipe to engage?)
http://padlet.com/zaid_alsagoff/engage



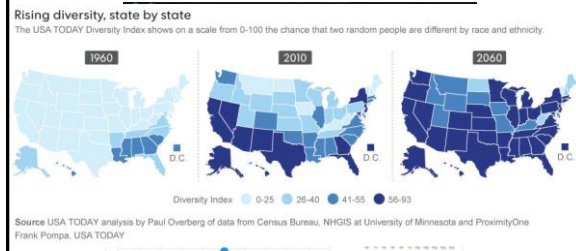
7. Interactive, Collaborative: C. Backchannel Chat (TodaysMeet)

<https://todaysmeet.com/>
R678_Emerging_Learning_Technologies
https://todaysmeet.com/R678_Emerging_Learning_Technologies



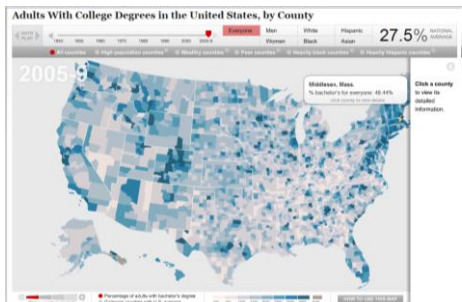
8. Engagement, Effort: D. Interactive Timeline Maps,

October 22, 2014, Second immigration wave lifts diversity to record high, Edward Greg Toppo and Paul Overberg, USA Today



8. Engagement, Effort: E. Interactive Map Timelines (adults with college degrees by county, May 7, 2012)

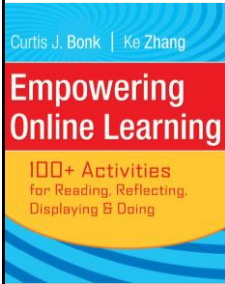
http://todaywonders.com/visuals/college_graduates_interactive_map_timeline_of_higher_education



8. Engagement, Effort: F. Simulations



Last but not least: Framework #2: The R2D2 Model



Addressing Learning Styles with R2D2



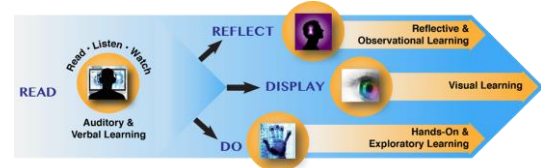
Question: How can technology address diverse learner needs?



August 12, 2015 Create Engaging Learning Experiences

Image adapted from Bonk, C.J. & Zhang, K. (2008). Empowering online learning: 100+ activities for reading, reflecting, displaying, & doing. San Francisco, CA: Jossey-Bass.

Southern Illinois University, Carbondale, Illinois
Heidi Jung and Cheryl L. Bosarge
Instructional Designer
Center for Teaching Excellence
Heidi Lynn Jung hjung@siu.edu
Cheryl L. Bosarge cbosarge@siu.edu



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. Collect and Listen to Interactive Stories

(e.g., Meograph: <http://www.meograph.com/>)



Read 1b.

Exploring the Life of a Prominent People (Wikipedia)

http://en.wikipedia.org/wiki/Vannevar_Bush

JULY 1945

As We May Think

VANNEVAR BUSH | JUL 1 1945, 12:00 PM ET



Read 1c. Grammer Checkers (e.g., Grammarly, Ginger, GrammarCheck, PaperRater, and SpellCheckPlus)

<http://www.grammarly.com/>



www.grammarcorrector.org

January 20, 2016

Read 1d. Podcasts

IU Bloomington podcast series to launch Jan. 24, Steve Hinnefeld, IU Newsroom

http://inside.iu.edu/headlines/2016-01-20-new-campus-podcast.html?utm_source=2016-01-20&utm_medium=sponsor&utm_content=something-in-the-air&utm_campaign=2016-inside-sub-distribution



IU's Media School dean James Shanahan, at left, will host a new campus podcast. Senior Luqmann Ruth will read the news for the inaugural podcast. | PHOTO BY JENNIFER PIUREK, OFFICE OF THE PROVOST

January 28, 2015

Read 1e. Twitter Fed Class Discussions

Live-Tweeting Assignments: To Use or Not to Use?
he Chronicle of Higher Education, Adeline Koh
<http://chronicle.com/blogs/profcheck/live-tweeting-assignments-to-use-or-not-to-use/58949>

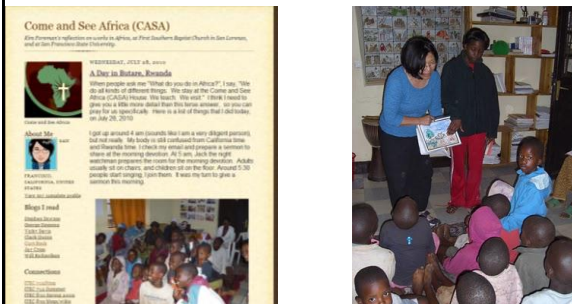


2. Reflective and Observational Learners

- 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 Univ, Come and See Africa Blog; <http://comeandseeafrica.blogspot.com/>)

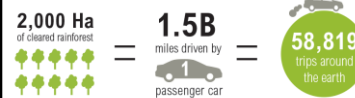


Reflect 2b. Interpreting Infographics

August 5, 2015

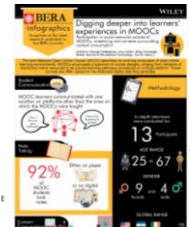
How much rainforest in that chocolate bar?
Global Forest Watch, Nancy Harris, Octavia Payne and Sarah Mann
<http://blog.globalforestwatch.org/2015/08/how-much-rainforest-is-in-that-chocolate-bar/>

Land-Use Change Emissions in Miles Driven



<http://bit.ly/rainforest-chocolate>

WORLD RESOURCES INSTITUTE



3. Visual Learners

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



Display 3a. Virtualize Words Used (e.g., Wordle, Taggedo, Tagul, WordSift, Word It Out)



Display 3b. Map Animations

Yes, Mr. President, We Remade Our Atlas to Reflect Shrinking Ice

Christine DelfAmore, National Geographic, August 3, 2015
<https://www.nationalgeographic.com/2015/08/03/2015-08-03-ice-shrinking-atlas/>
<https://www.nationalgeographic.com/2015/08/03/2015-08-03-ice-shrinking-atlas/>

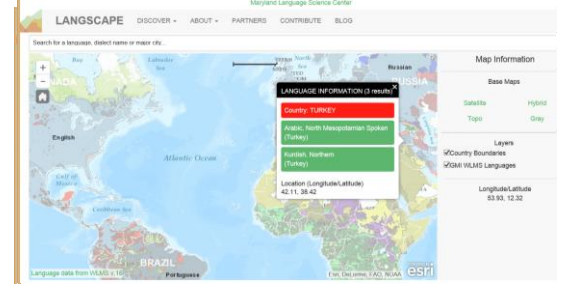


March 24, 2015

Display 3c. Maps of Languages

Langscape, Language at Maryland

<https://languagescience.umd.edu/beyond-umd/langscape>
<http://theweek.com/articles/545768/cool-interactive-map-lets-explore-worlds-languages>
<http://langscape.umd.edu/map.php>

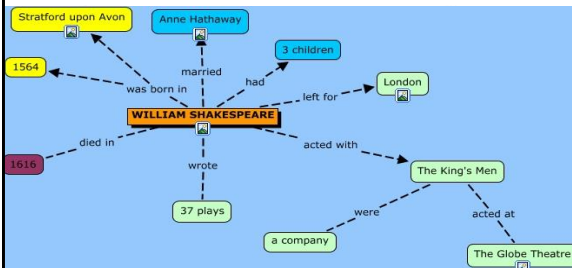


Display 3d. (April 28, 2015)

Concept Mapping and Timeline Tools

(Bubbl.us, Cmap, Gliffy, Spicynodes, or Mindomo)

<http://www.spicynodes.org/index.html>

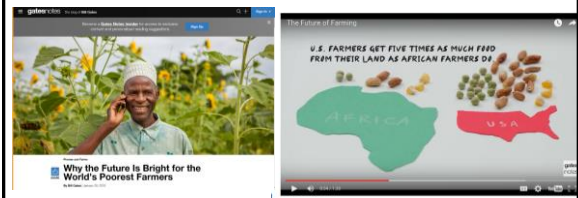


January 20, 2016

Display 3e. Embedded Videos

Why the Future Is Bright for the World's Poorest Farmers, Gates Notes, the blog of Bill Gates

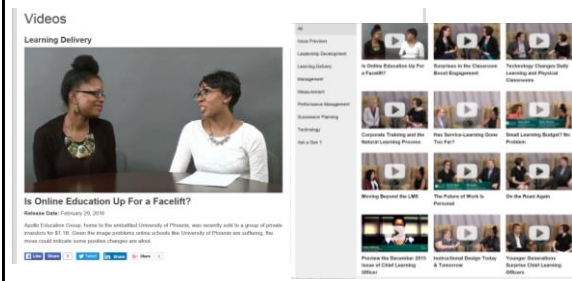
https://www.gatesnotes.com/Development/The-Future-of-Farming?WT.mc_id=D1_20_2016_20_FutureofFarming_BG-L1_&WT.mc_id=BGL1



March 7, 2016

Display 3f. Brief Info Videos, Chief Learning Officer

http://www.chiefcoo.com/media/video/play/395?utm_source=MyEmma&utm_medium=Email&utm_campaign=CLIO%20Today&utm_source=newletter&utm_medium=Email&utm_content=ch20Online%20Education%20Apr%20or%20Feb%2016&utm_campaign=CLIO_Today_101615



4. Tactile/Kinesthetic Learners

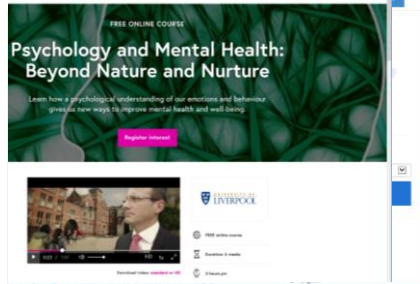
- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.



December 8, 2015

Do 4a. Take a MOOC

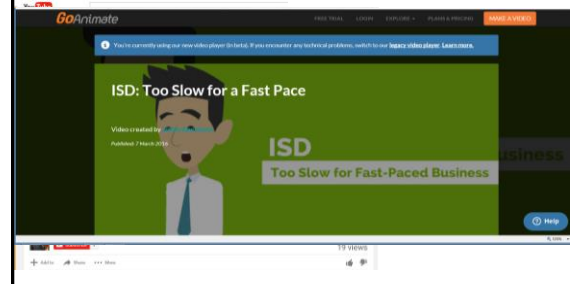
P540 Final Assignment for Meina Zhu: MOOC, Coursera, Introduction to Psychology, University of Toronto
<https://www.coursera.org/course/intropsych>



December 8, 2015

Do 4b. Student Final Project Videos

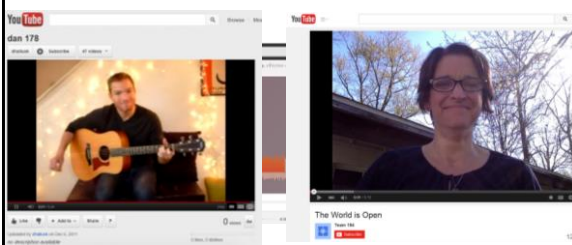
P540 Final Assignment: Learning Theories and Psychotherapy, Shu-Yi Wang
<https://www.youtube.com/watch?v=PNMpGinXAJM>



Do 4c. Student Music Recordings of Course Content

April 26, 2015

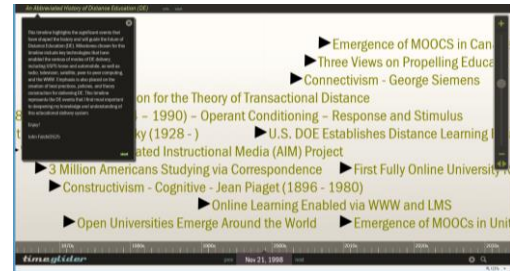
IST Groove Song, Jeffrey Jenkins, R511: <https://soundcloud.com/jeffjenkins25/ist-groove>
 The World is Open, Jill Kaufman, R678: <https://www.youtube.com/watch?v=ZRGV0M5Vmwk&feature=youtu.be>
 Daniel Halluska, P540: <http://www.youtube.com/watch?v=tOL7irGsqnw>



March 12, 2016

Do 4f. R678 John Falchi, Timeglider, An Abbreviated History of Distance Education

http://timeglider.com/v/50843d9953e480087nin_zoom=58_max_zoom=100



**Poll: Which do you prefer...
 (A) TEC-VARIETY or (B) R2D2?**



What motivates?

1. Task/Climate: Psychological Safety, Comfort, Sense of Belonging
2. Encouragement: Feedback, Responsiveness, Praise, Support
3. Curiosity: Surprise, Intrigue, Unknowns
4. Variety: Novelty, Fun, Fantasy
5. Autonomy: Choice, Control, Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactivity: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Investment
9. Tension: Challenge, Dissonance, Controversy
10. Yielding Products: Goal Driven, Purposeful Vision, Ownership



Overcoming the Resistance Movement



1. Incremental Change



2. Shared Success Stories and Best Practices



3. Training and Development



4. Just-in-Time Support



5. An Atmosphere of Sharing



6. Awards and Incentives



7. Modeling



8. Mentoring and Coaching



9. External Supports



10. Frameworks and Models



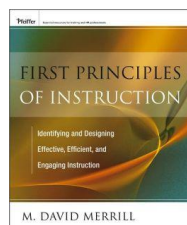
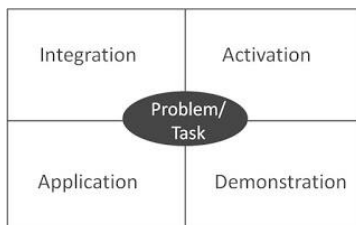
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Merrill's First Principles of Instruction

<http://mdavidmerrill.com/Papers/FirstPrinciplesReigeluthCarr.pdf>



Bonk's Last Principles of Teaching/Instruction

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



1. The Principle of Flexibility

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



2. The Principle of Convenience

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



3. The Principle of Collegiality

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



3. The Principle of Collegiality???

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



4. The Principle of Cheerfulness and Optimism

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



5. The Principle of High Expectations

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



6. The Principle of Choice and Options

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



7. The Principle of Empowerment and Autonomy

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



8. The Principle of Support and Feedback

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



9. The Principle of Spontaneity

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



10. The Principle of Organization

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



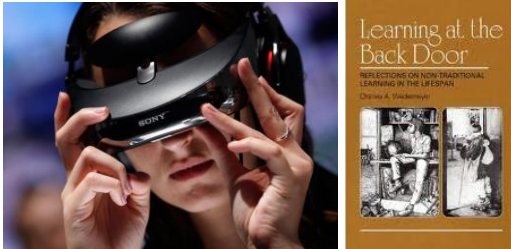
11. The Principle of Sharing

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



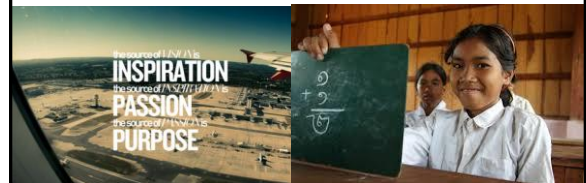
12. The Principle of Nontraditional Learning

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



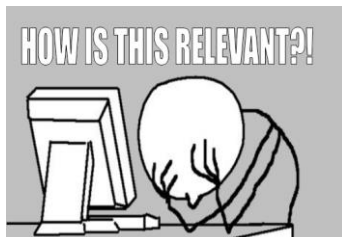
13. The Principle of Passion and Inspiration

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



14. The Principle of Relevance and Meaningfulness

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



15. The Principle of Trial and Error (i.e., it is ok to fail)

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



16. The Principle of Expanded Resources

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



17. The Principle of Human Connectedness

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



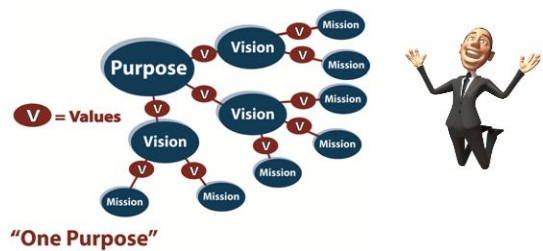
18. The Principle of Cognitive Apprenticeship

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



19. The Principle of Purpose and Vision

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



20. ??? (what is missing)

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



Debriefing of Bonk's Last Principles of Instruction and New Instructor Roles

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



Poll: How many ideas did you get from this talk?

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.
7. More than 10.






Who is Stretched Now?
Try TEC-VARIETY...Try R2D2
Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: <http://tec-variety.com/>
Dr. Curt Bonk – CJBonk@Indiana.edu



