

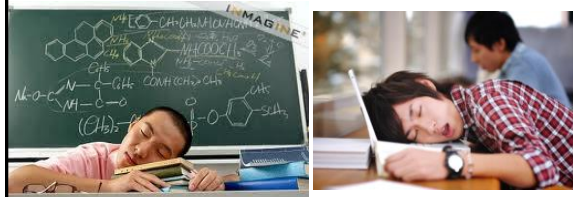
Learning is Changing Part 2:

Addressing Diverse Online Learner Needs and Motivation with the Read, Reflect, Display, and Do (R2D2) and TEC-VARIETY Models

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



Motivation and Engagement



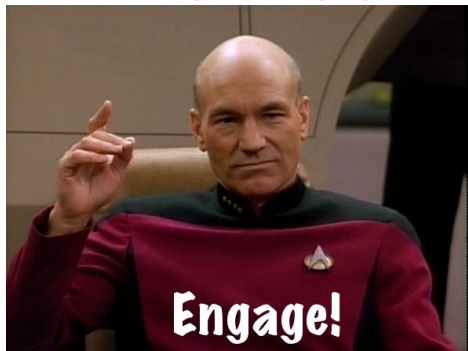
How do we engage online?



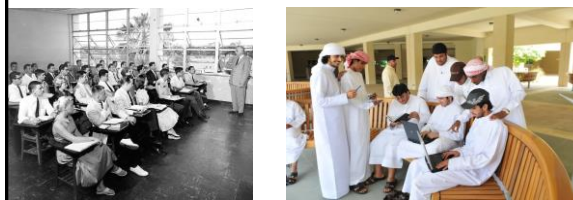
What did Jean-Luc Picard say?



That's right, Engage!



Ok, how do you now view the instructor in this more Open World of Education?



From Instructor as Credit Manager...



Instructor as Curator



Instructor as Concierge



Instructor as Counselor



Instructor as Conductor



Poll #1: 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...

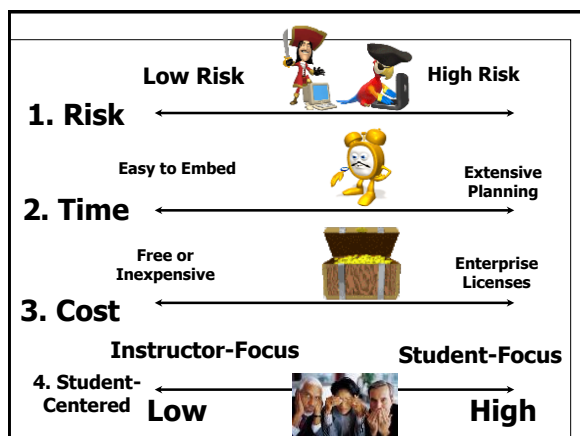
<http://tec-variety.com/>
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>



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

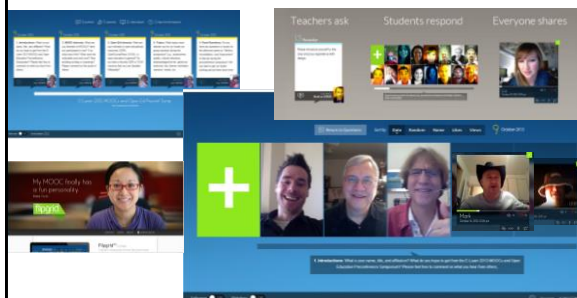


Examples of TEC-VARIETY



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=Wzbzc3QjIA>

Chuck Severance, U Michigan/Coursera) in Barcelona

<http://www.youtube.com/watch?v=JzNHymSv8TI>

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>



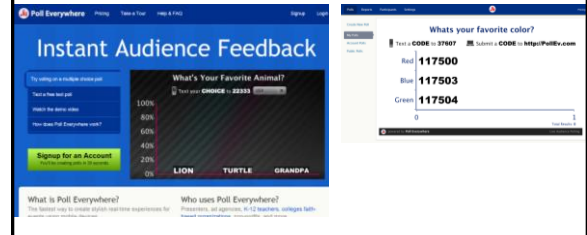
2. Encouragement, Feedback, etc.: B. Voice/Audio Feedback

Vocaroo: <http://vocaroo.com/>
<http://vocaroo.com/delete/s0x8moQAYAiU/a37bbc9408bb8c95>
 (Recorded by Curt Bonk for the Open University of China)



2. Encouragement, Feedback, etc.: C. Blog and Website Polling

(e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)
<http://www.poll.everywhere.com/>



May 25, 2015 3. Curiosity, Fun: A. Something in the News

(e.g., Chinese universities move up in world rankings, China Daily)
http://www.cnn.com/2014/12/17/health/healthy-aging/index.html?hpt=hp_12
http://espn.go.com/sports/endurance/story/_/id/8979487/fauja-singh-101-caps-career-10k-hong-kong
http://www.chinadaily.com.cn/china/2015-05/25/content_23003584.htm



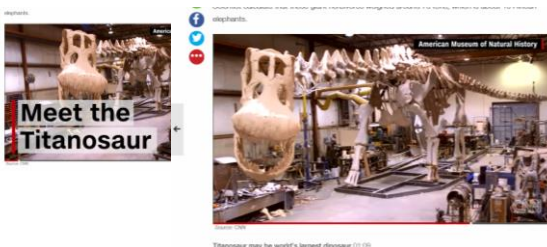
3. Curiosity, Fun: B. Something in the News

New 'massive' dinosaur skeleton discovered, USA Today,
 September 5, 2014 (Dreadnoughtus)
<http://www.usatoday.com/story/tech/2014/09/04/dinosaur-skeleton-discovered/15031803/>
 October 23, 2014: Goofy dinosaur blends Barney and Jar Jar Binks, SF Gate
<http://www.sfgate.com/news/article/Goofy-dinosaur-blends-Barney-and-Jar-Jar-Binks-1486050.php>
 Incredible 50-foot dragon dinosaur unearthed by Chinese farmers
 January 20, 2015: Naomi Ng, for CNN
<http://www.cnn.com/2015/01/20/asia/china-dragon-dinosaur/index.html>



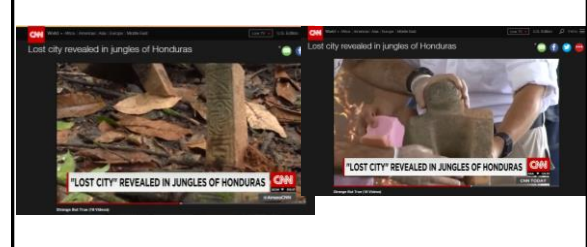
January 14, 2016 3. Curiosity, Fun: C. Something in the News

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-kcpl/>



January 18, 2016 3. Curiosity, Fun: D. Something in the News

Lost city revealed in jungles of Honduras, CNN
<http://www.cnn.com/videos/world/2016/01/18/lost-city-found-in-honduras-drt-walker.cnn>



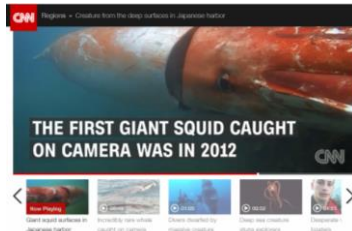
December 28, 2015

3. Curiosity, Fun:

E. 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 3, 2015

3. Curiosity, Fun:

F. Something in the News

Deep sea creature stuns explorers, CNN, While mapping uncharted waters near Hawaii, NOAA explorers captured incredible footage of deep sea creatures.

<http://www.cnn.com/videos/world/2015/09/03/deep-sea-creature-stuns-explorers-orig-dnews.cnn>



November 19, 2015

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

New daddy longlegs named after 'Lord of the Rings' character Smeagol, Mary Bowerman, USA Today

<http://www.usatoday.com/story/tech/science/2015/11/19/new-daddy-longlegs-named-after-lord-rings-character-smeagol/7803728/>

New daddy longlegs named after 'Lord of the Rings'



September 7, 2015

3. Curiosity, Fun:

H. 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

By Monica Sarkar, CNN
Updated 1:17 PM EDT, Mon September 7, 2015 / Video Source: CNN

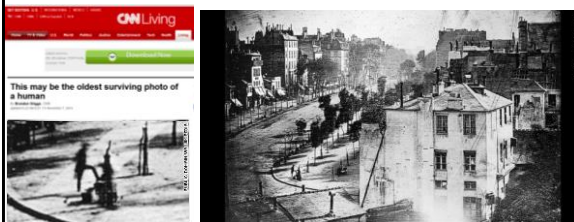


3. Curiosity, Fun:

I. 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?hpt=hp_4kong



November 20, 2015

3. Curiosity, Fun:

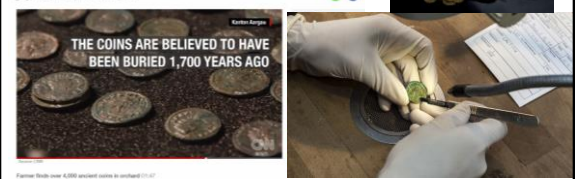
J. Something in the News

Treasure trove: Farmer discovers 4,000 Roman coins in Swiss orchard, Will Heilpern, CNN

<http://www.cnn.com/2015/11/20/luxury/roman-coins-switzerland-farmer/index.html>

Treasure trove: Farmer discovers 4,000 Roman coins in Swiss orchard

By Will Heilpern, CNN
Updated 1:00 PM EDT, Fri November 20, 2015



5. Autonomy, Choice:

C. Explore OpenCourseWare and Open Educational Resources

(e.g., MIT OCW, <http://ocw.mit.edu/courses/sloan-school-of-management/15-963-management-accounting-and-control-spring-2007/>)



5. Autonomy, Choice:

D. Video Repositories and Portals

(e.g., Khan Academy, Computer Programming)

<https://www.khanacademy.org/computing/computer-programming>



Poll #2:

Any light bulbs going off in your head so far...?

A. Yes definitely***

B. Yes maybe!

C. Not yet (but hopefully soon...)



6. Relevance, Meaningfulness:

A. Guest Chats (e.g., Emily Hixon, January 20, 2015)

<https://connect.iu.edu/p259wpiabg9/>



7. Interactive, Collaborative:

A. Negotiate Meanings Online

(e.g., PiratePad: <http://meetingwords.com/>)
<http://blisselon.edu/technology/6-collaborative-writing-applications-for-group-projects-or-nations/>
 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?)

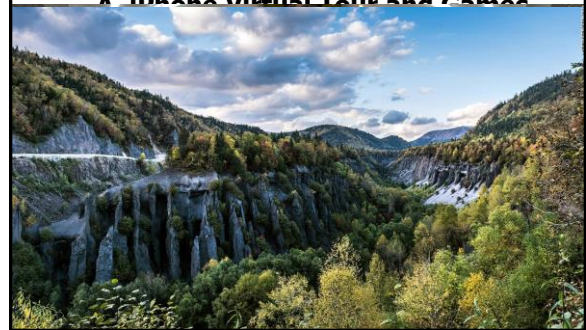
http://padlet.com/zaid_alsagoff/engage



7. Interactive, Collaborative: C. Collaboration and Discussion in Google Hangouts, Jabber, Skype, etc (January 29 and February 25, 2013)

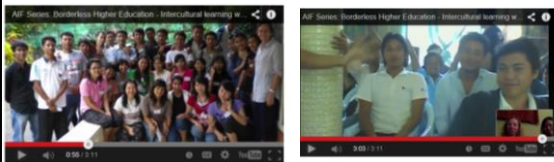


July 27, 2015 8. Engagement, Effort:

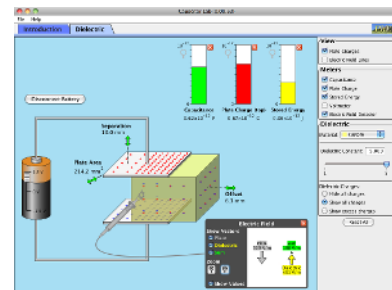


8. Engagement, Effort: B. Intercultural learning

Virtual and on-site exchanges between York University students, refugee students on the Thai Burma border and displaced migrant students in Ranong, Thailand, and York University, Toronto, Canada
<http://aifprojects.yorku.ca/projects/intercultural-learning-thailand-2012-13/>



8. Engagement, Effort: C. Simulations



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

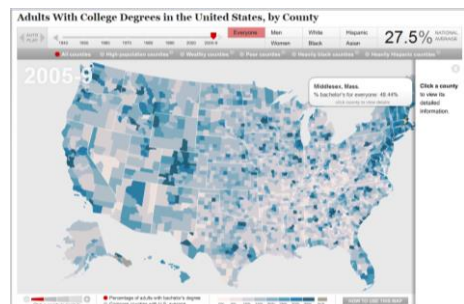
Rising diversity, state by state

The USA TODAY Diversity Index shows on a scale from 0-100 the chance that two random people are different by race and ethnicity.



Source USA TODAY analysis by Paul Overberg of data from Census Bureau, NHGIS at University of Minnesota and ProximityOne
Frank Pongia, USA TODAY

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



8. Engagement, Effort: F. Simulations



March 13, 2015

9. Tension, Challenge, etc.:

A. Controversial Issue Debates

R511 Midterm Video How to Create an Authentic Environment in a Content-Driven School?, R511, Nick and Nik

https://www.youtube.com/watch?v=Bcr3_aZT_xQ&feature=youtu.be



10. Yields Products, Goals: A. Uploading Mobile Books and Wikibooks (e.g., BookRix, <http://www.bookrix.com/>)



10. Yields Products, Goals:

B. Student Created Mobile Apps

The App Builder: <http://www.theappbuilder.com/>
Mintian Guo: <http://myapp.is/r685final>



10. Yields Products, Goals: C. Student Created Videos

Piercarlo Abate: <http://www.youtube.com/watch?v=-TURzH00aI>
Qi Li, Gangnam: <http://www.youtube.com/watch?v=7Q429qzZuU8&feature=youtu.be>
Miguel Lara (Web 2.0 FREEDOM!): <http://www.youtube.com/watch?v=8omCFW9I9W8>
Kendal Rasnake (Is IT Right For You?): <https://www.youtube.com/watch?v=MJ3GUD1CLGw>



Commitments: Stop and Share:

Which principle(s) of TEC-VARIETY will you use?

Tone/Climate
Encouragement, Feedback
Curiosity

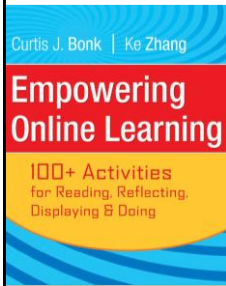
Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products



What motivates?

1. Tone/Climate: Psychological Safety, Comfort, Sense of Belonging
2. Encouragement: Feedback, Responsiveness, Praise, Supports
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

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

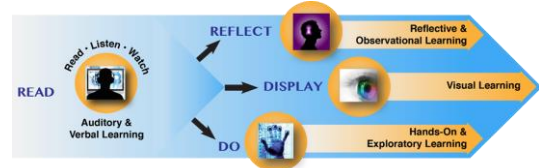
Heidi Jung and Cheryl L. Bosarge

Instructional Designer

Center for Teaching Excellence

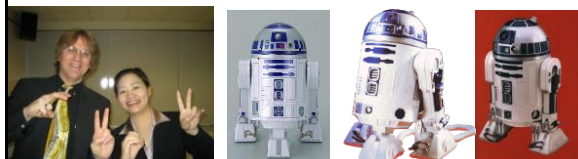
Heidi Lynn Jung hjung@siu.edu

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.

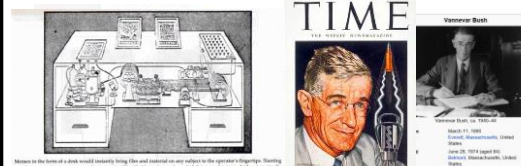
Exploring the Life of a Prominent People (Wikipedia)

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?
The Chronicle of Higher Education, Adeline Koh
<http://chronicle.com/blogs/professors/live-tweeting-assignments-to-use-or-not-to-use/58949>

Live-Tweeting Assignments: To Use or Not to Use?



We've written a great deal on using Twitter in the classroom. But we have not written extensively on using Twitter in the classroom. It's not hard to choose between, based on how to handle students, change in terms of learning strategies, and our own or our students' preferences for learning in class.



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. Workplace Internship, Practicum, and Field Experiences



Reflect 2b. Cultural Blogs (e.g., Dr. Kim Foreman, San Fran State Univ, Come and See Africa Blog; <http://comeandseeafrica.blogspot.com/>)



Reflect 2c. Case and Online Discussion (Kelley Direct, IU)



3. Visual Learners

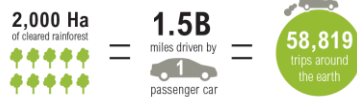
- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.



Display 3a. More 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/>

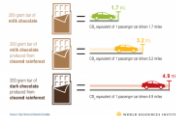
Land-Use Change Emissions in Miles Driven



<http://defy.rainforest.chocolate>

WORLD RESOURCES INSTITUTE

Distribution of Land Use Change Impacts Across United States Production Crops



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



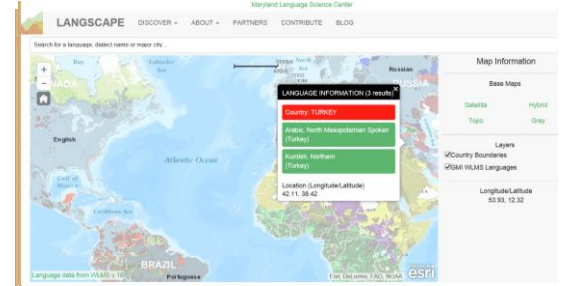
Display 3c. Map Animations Yes, Mr. President, We Remade Our Atlas to Reflect Shrinking Ice

Christine Dell'Amore, National Geographic, August 3, 2015
<http://news.nationalgeographic.com/2015/08/03/atlas-to-reflect-shrinking-ice/>
<http://www.nationalgeographic.com/2015/08/03/atlas-to-reflect-shrinking-ice/>



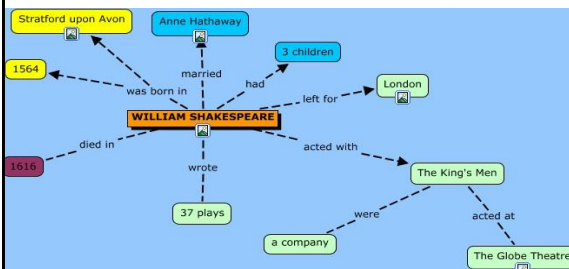
March 24, 2015 Display 3d. Maps of Languages Langscape, Language at Maryland

<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 3e. (April 28, 2015) Concept Mapping and Timeline Tools (Bubbl.us, Cmap, Glify, Spicynodes, or Mindomo)

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



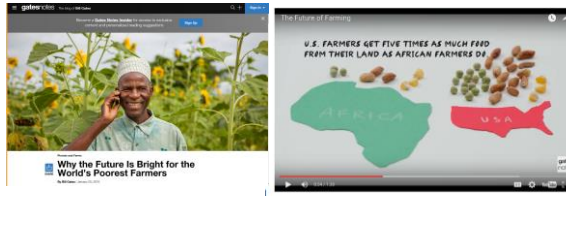
Display 3f. October 31, 2014 Penguin Science (Penguin Cam), Jean Pennycook

<http://www.penguinscience.com/>
<http://www.thistle.org/pcam2/images.shtml>



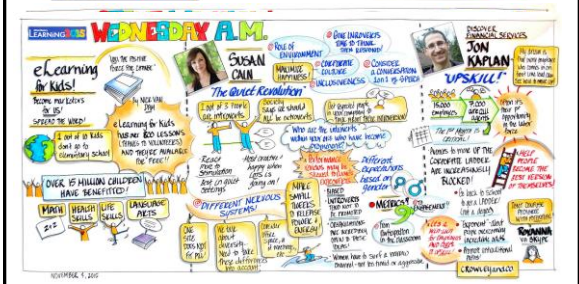
January 20, 2016
Display 3g. Embedded Videos
Why the Future Is Bright for the World's Poorest Farmers, Gates Notes, the blog of Bill Gates

https://www.gatesnotes.com/Development/The-Future-of-Farming?WT.mc_id=B1_20_2016_20_FutureofFarming_BG-L1_&WT.src=BGLI



December 17, 2015
Display 3h. Conference Resource Visuals

Elliott Masie's Learning 2015, Nov 1-4, 2015
<http://learningtalks.com/learning-2015-videos/sabrina-kay-the-learner/>



Display 3i.
Tracking the Life of a Scientist
(e.g., Brian J. Ford, independent scientist)

<http://www.youtube.com/user/tellymonitor#p/a/u/1/LhGeApsKJasr>
<http://www.labnews.co.uk/news/prehistoric-revolution/>

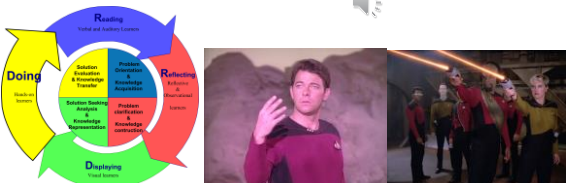


Display 3j. Videos for clinical education
(Sungkyunkwan University School of Medicine, www.mededu.or.kr)



4. Tactile/Kinesthetic Learners

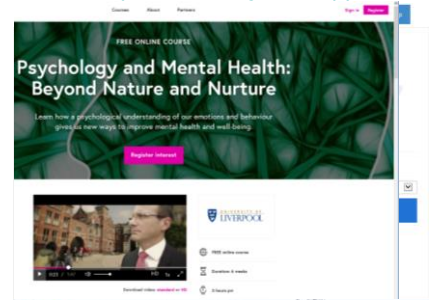
- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.



December 8, 2015

Do 4a. Take a MOOC

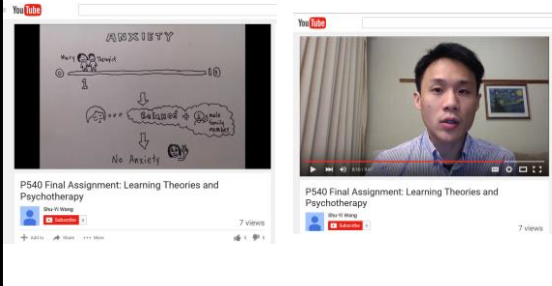
P540 Final Assignment for Meina Zhu: MOOC, Coursera, Introduction to Psychology, University of Toronto
<https://www.coursera.org/course/intropsych>



December 8, 2015

Do 4b. Student Final Project Videos
P540 Final Assignment: Learning Theories and Psychotherapy ,
Shu-Yi Wang

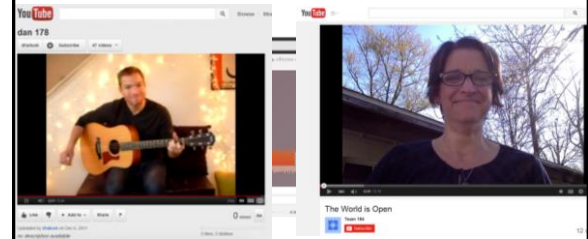
<https://www.youtube.com/watch?v=PNMpGjXAJiM>



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=Z8GVMg5Vmw&feature=youtu.be>
 Daniel Halluska, P540: <http://www.youtube.com/watch?v=tQL7irGsqnw>



Poll #3: Which do you prefer...
(A) TEC-VARIETY or (B) R2D2?



What motivates?

1. **TimeClimate:** Psychological Safety, Comfort, Sense of Belonging
2. **Encouragement:** Feedback, Responsiveness, Praise, Supports
3. **Curiosity:** Surprise, Inquire, Unlocks
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



Poll #4: 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.



We are entering a jumping off point...

(South University of Science and Technology of China, Wednesday June 10, 2015)



Poll #5: Any Questions?

Try TEC-VARIETY...Try R2D2

Slides at: TrainingShare.com

Papers: PublicationShare.com

Free Book: <http://tec-variety.com/>

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