

Masterclass Part 1: Best Practices for Online and Blended learning: Introducing the TEC-VARIETY Model

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January 2017 Higher Education Supplement to the National Education Technology Plan

U.S. Department of Education, Office of Educational Technology
<https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf>

'New Normal' Students in Higher Education

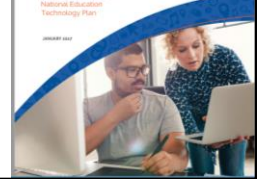
74% of all undergraduate students have at least one nontraditional characteristic

66% transfer between institutions prior to completion	62% work either full or part time	43% attend part time
28% have at least one dependent	35% are enrolled in two-year colleges	63% are first-gen students

Source: National Education Technology Plan, 2016

Reimagining the Role of Technology in Higher Education

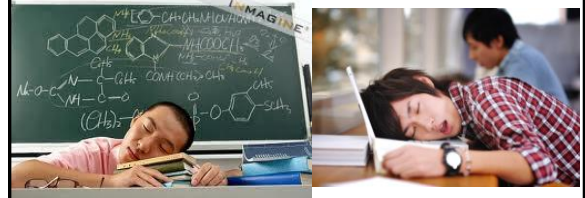
A Supplement to the National Education Technology Plan



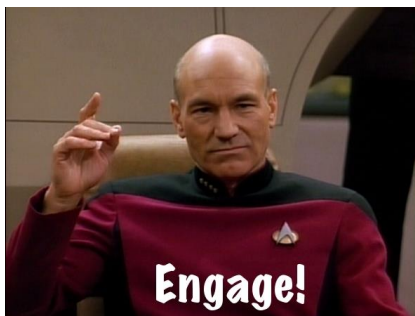
Poll #1: How many of you cannot keep up with educational technology reports and are frustrated?



Needed: New Models of Motivation and Engagement



Poll #2: What did Jean-Luc Picard say?



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.



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.



Poll #3: Million Dollar Question: What words come to mind when I say that I want to motivate learners?



Framework #1: 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...

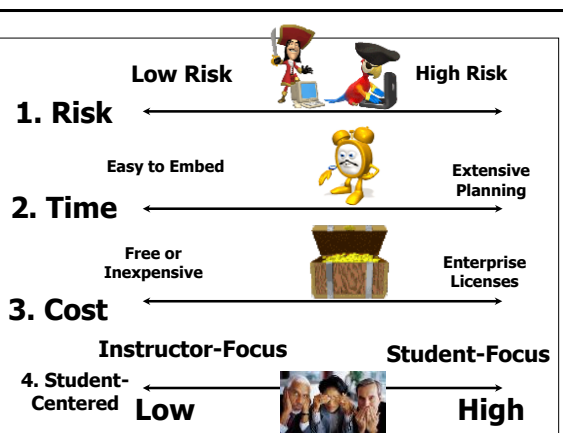
<http://tec-variety.com/>
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>



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

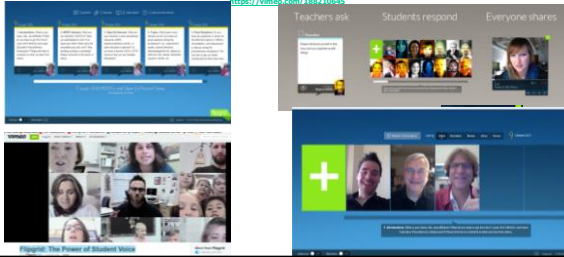


Examples of TEC-VARIETY



November 10, 2016**1. Tone/Climate:****A. Threaded Video Discussions and Questions**
(e.g., Flipgrid)<http://flipgrid.com/#429f88c5>

Flipgrid: The Power of Student Voice

<https://vimeo.com/118211684>**1. Tone/Climate:****B. Instructor Course Introductions**

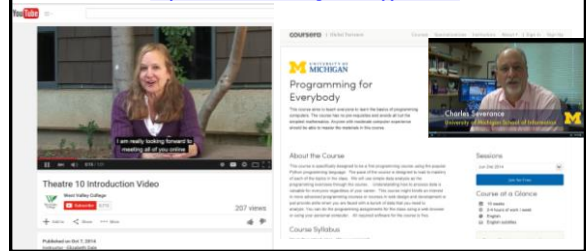
(Theatre 10 Intro Video, October 7, 2014, Elizabeth Dale, West Valley College)

<https://www.youtube.com/watch?v=Wzbzc30IIA>

Chuck Severance, U Michigan/Coursera) in Barcelona

<http://www.youtube.com/watch?v=3zNHVmsv8Tl>

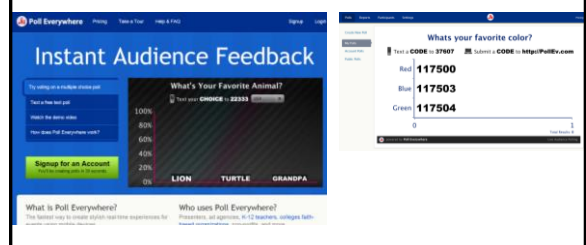
Chuck Severance, University of Michigan

<https://www.coursera.org/course/pythonlearn>**2. Encouragement, Feedback:****A. Demonstrations and Tutorials**

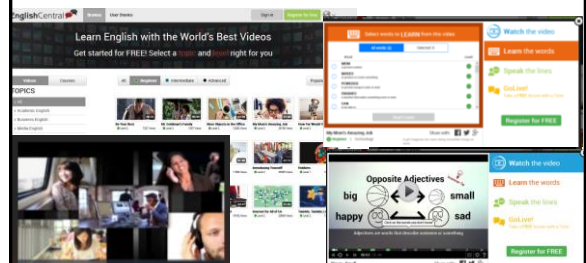
(e.g., Jing, Screenr, GoView, Screencast-o-matic, etc.)

<http://inside.iub.edu/features/videos/2014-05-29-inub-vid-cib.shtml>**2. Encouragement, Feedback:****B. Blog and Website Polling**

(e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)

<http://www.pollerywhere.com/>**2. Encouragement, Feedback:****C. Voice/Audio Feedback**Vocaroo: <http://vocaroo.com/><http://vocaroo.com/delete/s0x8moQAYAiU/a37bbc9408bb8c95>

(Recorded by Curt Bonk for the Open University of China)

**July 21, 2017****2. Encouragement, Feedback:****D. English Central**<https://www.englishcentral.com/videos/11/index><https://www.englishcentral.com/videos>

Poll #4: Which of these ideas might you use?

- A. Threaded video discussions (e.g., Flipgrid)
- B. Video introductions (instructor or student)
- C. Demonstrations and tutorials (Jing, Screenr, etc.)
- D. Voice/Audio feedback (Vocaroo)
- E. Crowdsourced Science
- F. Something in the News
- G. Summary and Comparison Maps
- H. Immediate Science



4. Variety, Novelty, Fun, Fantasy: A. Random Lists

(Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)

RANDOM.ORG

Coin Flipper

You flipped 2 coins of type Irish-€1:



Timestamp: 2011-08-13 01:04:43 UTC

[Flip Again](#) [Go Back](#)

Dice Roller

You rolled 2 dice:



Timestamp: 2011-08-13 01:04:43 UTC

[Roll Again](#) [Go Back](#)

RANDOM.ORG

List Randomizer

There were 10 items in your list. Here they are in random order:

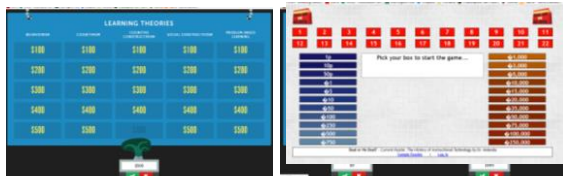
Random Sequence Generator

Here is your sequence:

1. 1. Bill
2. 2. Author
3. 3. Thomas
4. 4. 2. Shady
5. 5. 2. Shady
6. 6. 2. Shady
7. 7. 2. Shady
8. 8. 2. Shady
9. 9. 2. Shady
10. 10. 2. Shady

Timestamp: 2011-08-13 01:04:43 UTC

October 5, 2016 4. Variety, Novelty, Fun, Fantasy: B. Online Test/Quiz Review Games (e.g., Jeopardy Rocks) <https://www.jeopardy.rocks/r511merve/>



April 3, 2017 4. Variety, Novelty, Fun, Fantasy: C. Kahoot!

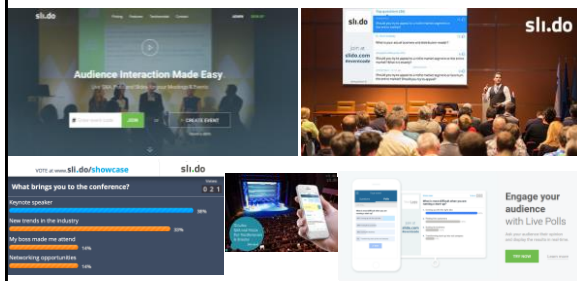
<https://getkahoot.com/>

July 31, 2017

I'm in 'Kahoots' with Technology in the Classroom
Cassandra OSullivan Sachar, Faculty Focus



April 3, 2017 4. Variety, Novelty, Fun, Fantasy: D. Sli.do <https://www.sli.do/>



July 17, 2017 4. Variety, Novelty, Fun, Fantasy: E. Learning Chemistry in Virtual Reality, Sarah Hardman, New Learning Times

<https://newlearningtimes.com/cms/article/4519/learning-chemistry-in-virtual-reality>

1:38 video: <https://vialogues.com/vialogues/play/38337/>

All: <http://curtbonk.com/chemistry-vr.html>

01:41: <http://curtbonk.com/chemistry-vr-1.html>

.41:1:16: <http://curtbonk.com/chemistry-vr-2.html>

1:16:1:36: <http://curtbonk.com/chemistry-vr-3.html>



5. Autonomy, Choice:

A. Enroll in a MOOC and Reflect (e.g., see Class Central)



December 8, 2015

5. Autonomy, Choice:

B. Design Multimedia Glossaries

P540 Final Assignment: Nate Wynne, Supersized Personal Course Glossary

<http://natewynne1952.wis.com/p540course/glossary>

Ozgur Ozdemir, December 2012

<http://r685glossary.shutterstock.com/>

Umida Khikmatillaeva, Dec. 2011, P540

<http://learningplanet.shutterstock.com/>

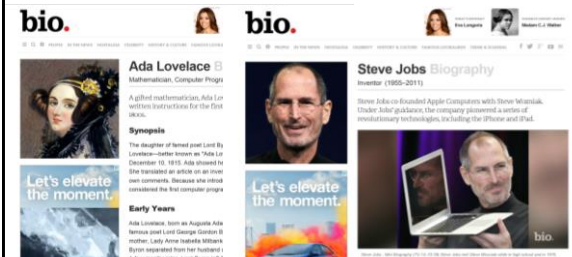


5. Autonomy, Choice:

C. Tracking the Life of a Computer Scientist (e.g., bio.com)

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

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



Poll #5:

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

A. Yes definitely***

B. Yes maybe!

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



Jan. 20, Oct. 13, & Nov. 2016 (Zoom)

6. Relevance, Meaningfulness:

A. Weekly Guest Expert Chats

R511 Chat with Mike Molenda, IU



6. Relevance, Meaningfulness:

B. Case-Based Learning: Instructor Cases

(e.g., Mark Braun, IU)



July 28, 2017

6. Relevance, Meaningfulness:

C. Case-Based Learning: Modern medicine breathes new life into virtual training

<https://www.usatoday.com/videos/tech/2017/07/28/modern-medicine-breathes-new-life-into-virtual-training/10497395/>

Videos

2:34 (entire video): <http://curtbonk.com/vr-medicine4b.html>
 .01-.21: <http://curtbonk.com/vr-medicine.html>
 .37-.56: <http://curtbonk.com/vr-medicine2.html>
 .57-1.29: <http://curtbonk.com/vr-medicine3.html>
 1:30-2:27: <http://curtbonk.com/vr-medicine4.html>



July 26, 2017

6. Relevance, Meaningfulness:

D. MOOC Class Meet-Ups

Beer Matters: Free Online Class With Meetups

(September 6, 2017-October 21, 2017),

Karl Brown, Assistant Professor of History

http://www.gazetteextra.com/20150921/see_willwester_teacher_explores_links_between_germans_beer_politics_brownk@uwu.edu

Video: <http://curtbonk.com/beer.html> (1:11)



September 20, 2016

6. Relevance, Meaningfulness:

E. Editing Wikipedia Pages

College students take to Wikipedia to rewrite the wrongs of Internet science, Rosanna Xia, LA Times
<http://www.latimes.com/local/lanow/la-me-wikipedia-science-classes-edv-map-story.html>



Samantha Erickson, left, of the Wiki Education Foundation; Tina Brock, a dean of the School of Pharmacy at UC San Francisco; and professor Amin Azzam discuss implementing the integration of Wikipedia pages on medical topics with students' work. (David Butow / For The Times)

7. Interactive, Collaborative:

A. Negotiate Meanings Online

(e.g., PiratePad: <http://meetingwords.com/>)
<http://blogs.edon.edu/technology/6-collaborative-writing-applications-for-group-projects-or-papers/>
 MeetingWords, Google Docs, NowComment, MixedInk



7. Interactive, Collaborative:

B. Virtual Sharing Walls

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



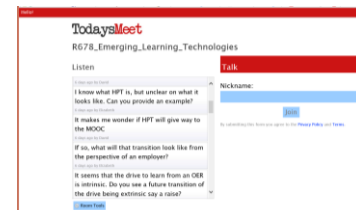
7. Interactive, Collaborative:

C. Backchannel Chat (TodaysMeet)

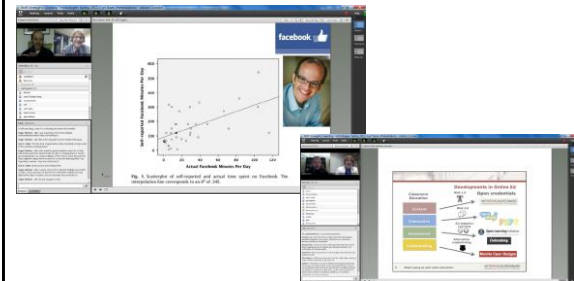
<https://todaysmeet.com/>

R678_Emerging_Learning_Technologies

https://todaysmeet.com/R678_Emerging_Learning_Technologies



7. Interactive, Collaborative: D. Guest Speaker Quotes (Rey Junco, February 25, 2013)



Poll #6: Which of these ideas might you use?

- A. Student designed multimedia glossaries
- B. Edit Wikipedia pages
- C. Guest chats with former students
- D. Negotiate meanings online (e.g., PiratePad)
- E. Enroll in a MOOC
- F. Discussion in Zoom
- G. Guest speaker quotes

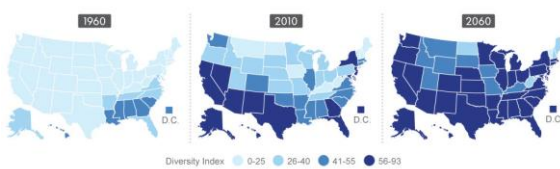


8. Engagement, Involvement: A. Interactive Maps Timelines October 22, 2014, Second immigration wave lifts diversity to record high, Edward Greg Toppo and Paul Overberg, USA Today

<http://www.usatoday.com/story/news/nation/2014/10/22/diversity-race-ethnicity-chicago-100-years/1421113/>

Rising diversity, state by state

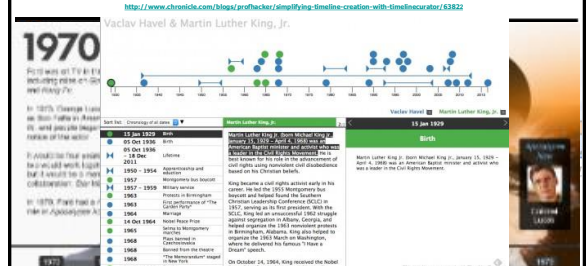
The USA TODAY Diversity Index shows on a scale from 0-100 the chance that two random people are different by race and ethnicity.



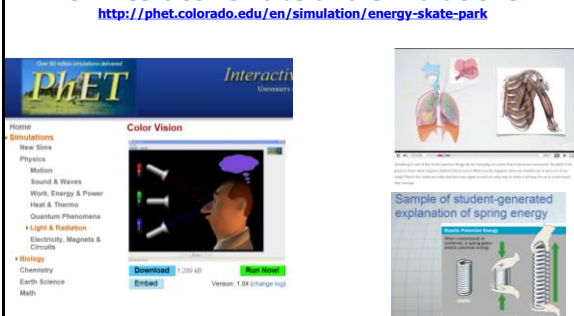
Source: USA TODAY analysis by Paul Overberg of data from Census Bureau, NHGIS at University of Minnesota and ProximityOne. Frank Pompa, USA TODAY.

March 30, 2017 8. Engagement, Involvement: B. Interactive Timelines (Dipity, xtimeline, Simile, TimeLineCurator, etc.)

<http://usatoday30.usatoday.com/tech/news/story/2011-09-22/steve-jobs-dies/50672498/1>
Amy Cavender, The Chronicle of Higher Education



8. Engagement, Involvement: C. Interactive Labs and Simulations <http://phet.colorado.edu/en/simulation/energy-skate-park>



December 13, 2016 9. Tension, Challenge, Controversy, etc.: A. Controversial Issue Debates Librarians for Instructional Technology, Latrice Booker, R511, Fall 2016

<http://bookerlr2000.wixsite.com/librariansforit/cognitivism>
R511 Librarians' Take: How to Create an Authentic Learning Experience in a Classroom. December 13, 2016. R511, Rick and IRL.



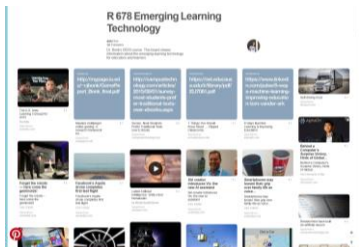
October 16, 2015
9. Tension, Challenge, Controversy, etc.:
B. Case Learning from the News
 (e.g., Newseum Ed)
<https://newseumed.org/>



10. Yields Products, Goals:
A. Facebook Course Page (R546)
<https://www.facebook.com/JennyBELTY/>

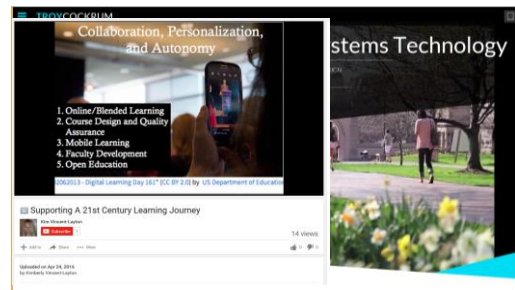


10. Yields Products, Goals:
B. Database Collection Tools
Design Article Database in Pinterest,
Meina Zhu and Jennifer Weebeck
<https://www.pinterest.com/zhuaina000/r-678-emerging-learning-technology/>
<https://www.pinterest.com/jenniferebeck/emerging-learning-technologies/>



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

Piercarlo Abate: <http://www.youtube.com/watch?v=-T0r2i00aU>
 Qi Li, Gangnam: <http://www.youtube.com/watch?v=7Q429pZaU8k&feature=youtu.be>
 Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW9iW8>
 Kendal Rasnake (Is IT Right For You?): <http://www.youtube.com/watch?v=H33GUD1CI6w>
 Kimberly Vincent-Larkin: <https://www.youtube.com/watch?v=8539...7113&feature=youtu.be>



March 12, 2016
10. Yields Products, Goals:
D. Student Generated Timelines,
Taxonomies, and Concept Maps

R678 John Falchi, Timeglider, An Abbreviated History of Distance Education
http://timeglider.com/t/5084348903a480087min_zoom=1&max_zoom=100



Poll #7:
Which of these ideas might you use?

- A. Interactive map timelines
- B. Facebook course page (or Pinterest)
- C. Issue challenges, role plays, and debates
- D. Student designed course recap videos
- E. Student infographics
- F. Interactive timeline tools
- G. Videos with test questions



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

Masterclass Part 2:

**Best Practices for Online and Blended learning:
Introducing the R2D2 Model**

Curt Bonk, Professor, Indiana University

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



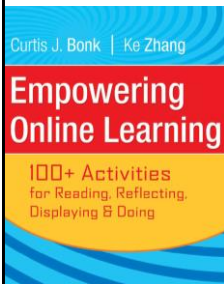
Addressing Learning Styles with R2D2



Question: How can technology address diverse learner needs?



Model #2: The R2D2 Model: Read, Reflect, Display, Do...



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.



January 20, 2016

Read 1a. Podcasts

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

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

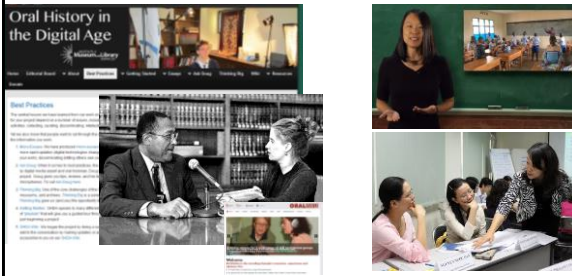


IU's Media School dean James Shanahan, at left, will host a new campus podcast. Senior Luqmann Ruth will read the news for the inaugural podcast.
| PHOTO BY JENNIFER PIUREK, OFFICE OF THE PROVOST

Read 1b. Collect Oral Histories

e.g., Joan Kang Shin, George Mason University, has her students write "This I believe" Statements.
(EFL teachers around the world interview elders in their community for a rich database of oral histories and documentaries for social change)

Oral History Society: <http://www.ohs.org.uk/>



Read 1c.

Exploring Various Resources to Track the Life of a Prominent People

(e.g., Vannevar Bush in Atlantic Monthly, Wikipedia, Time, etc.)

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

JULY 1945

As We May Think

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



May 28, 2015 Read 1d. Immediate Science and Open Access Science

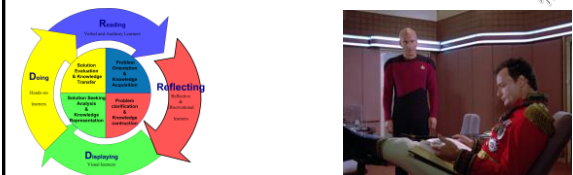
Ancient jawbones put new species on the human family tree, researchers say, Laura Smith-Spark, CNN

<http://www.cnn.com/2015/05/28/africa/ethiopia-fossil-hominin-ancestor/index.html>
<http://www.cnn.com/2015/05/28/africa/ethiopia-fossil-hominin-ancestor/index.html>
<http://www.nature.com/nature/journal/v524/n7553/full/nature14448.html>



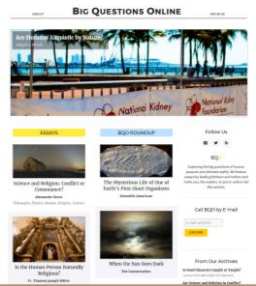
2. Reflective and Observational Learners

- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives



Reflect 2a. Big Issue Reflections

(Big Questions Online (BQO)), Feb 3, 2015
(e.g., [Can a Living Creature Be as Big as a Galaxy?](http://www.bigquestionsonline.com/))



April 15, 2017

Reflect 2B. "What if" Questions?

Emma Morano, Last Known Person Born During The 1800s, Dies, Hilary Hanson, Huffington Post

http://www.huffingtonpost.com/entry/emma-morano-dies-born-1800s_us_58f2581de4b030433be455d7?ncid=ibnlhkwcom00000009
http://www.huffingtonpost.com/entry/oldest-woman-emma-morano_us_583dae2ae4b06539a78a760c?ncid=ibnlhkwcom00000009

Emma Morano, Last Known Person Born During The 1800s, Dies

She attributed her long life to staying single.

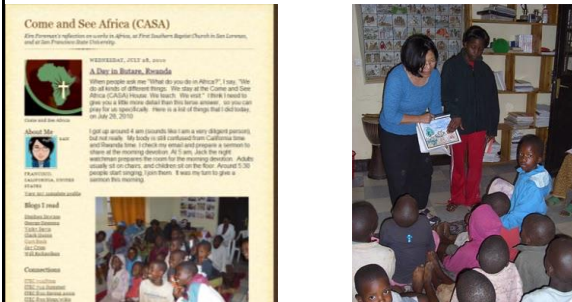
By Hilary Hanson



The last person known to have been born during the 1800s has died.



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



Reflect 2d. Workplace Internship, Practicum, and Field Experiences



3. Visual Learners

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



Display 3a. 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

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



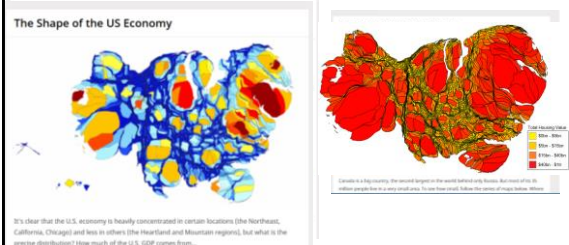
Display 3c. Map Animations Yes, Mr. President, We Remade Our Atlas to Reflect Shrinking Ice

Christine Dell'Amore, National Geographic, August 3, 2015



November 19, 2016 Display 3d. Cartograms, Maps, and Other Visualizations Metrocosm: Cartograms Archive The Housing Value of Every County in the U.S.

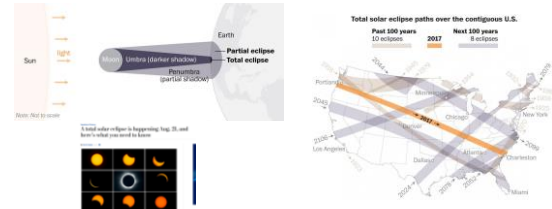
<http://metrocosm.com/category/cartograms/>



July 21, 2017 Display 3e. A total solar eclipse is happening Aug. 21 and here's what you need to know

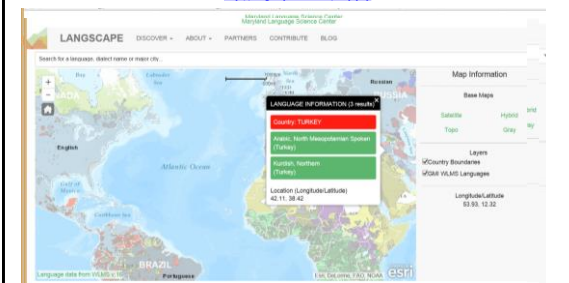
Sarah Kaplan, The New York Times

<https://www.waitingpointpost.com/2017/07/21/a-total-solar-eclipse-is-happening-aug-21-and-here-what-you-need-to-know/?hpid=hp%3Aeclipse%3Ahomepage%2Fstory&hpid=hp%3Aeclipse%3Ahomepage%2Fstory>



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

<https://languagescience.umd.edu/beyond-umd/langscape>
<http://theweek.com/articles/246768/cool-interactive-map-lets-explore-worlds-languages>
<http://langscape.umd.edu/map.php>



Display 3g. (April 28, 2015) Concept Mapping and Timeline Tools (Bubbl.us, Cmap, Gliffy, Spicynodes, or Mindomo)

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



[illegible]

<http://whesldecide.com/index.php?c1=Jungle&c2=Hospital&c3=Warzones&c4=Temple&c5=Garden&t=My+classroom+is+like+a+time+5>
<http://whesldecide.com/>



THE DIGITAL ERA

19. Wiki Uses and Applications

Searching above you can see exactly what a video is interesting similar from any YouTube video and it's

YouTube Information

19:00 1.4K views 1 year ago 100% 14K

How Good is Wiki?

1. Finding what you want to shop
2. Make it an interesting video of the video
3. Check it with friends

Wiki Examples







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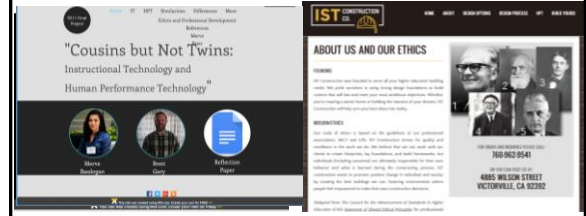
October 26, 2016

Do 4b. Student Research Recap Video
R511, Rob Elliot, Erin Milanese, and Patrick Walsh
Traditional Textbook (8:11)
<https://drive.google.com/file/d/0B25dACR9Dd85NE90a516RipHtW/view>



Do 4c. Student Website Development
R511 Final Projects, April 2016

IT and HPT Comparison (Website), Doug Hsu
<http://dougandindira.wix.com/r511finalproject>
"IST Construction, Co."
 Rob Elliot, Patrick Walsh, Erin Milanese, R511, **December 2016**
<http://relliott.net/istconstruction/index.php>
"Cousins but Not Twins: Instructional Technology and Human Performance Technology,"
 Merve Basdogan and Brett Gary, R511, **December 2016**
<http://educbasdogan.wixsite.com/511final>



Poll #8: Which do you prefer...
(A) TEC-VARIETY or (B) R2D2?



What motivates?

1. **TenseClimate:** 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

Poll #9: 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.



Poll #10: Three Words from this Session...?

e.g., "I am happy!" and...
My minions are happy!



Any Questions or Comments?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Free book: <http://tec-variety.com/>
Dr. Curt Bonk – CJBonk@Indiana.edu

