

## My Our Learning World Has Changed: Now WE-ALL-LEARN with R2D2 and Beyond

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## Audience Poll #1:

Has learning technology has ever transformed your life.



1728: 1<sup>st</sup> correspondence course advertised Boston  
(learn shorthand from Caleb Phillips thru weekly mailed lessons)

1728-1990s – Generally postal system based  
1930s – phonograph and radio  
1950s and 1960s – television  
1970s and 1980s – VHS tapes  
1980s and 1990s – DVD



May 10, 2013

10 ed-tech tools of the 70s, 80s, and 90s  
eSchool News, Meris Stansbury

<http://www.eschoolnews.com/2013/05/10/10-ed-tech-tools-of-the-70s-80s-and-90s/print/>



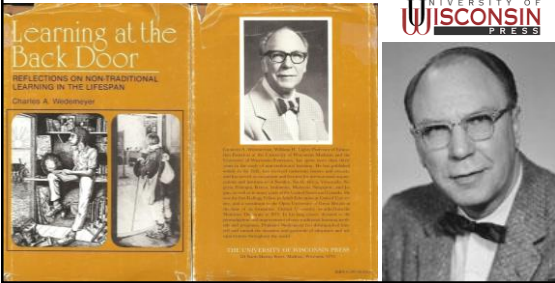
## Looking to the Past...



Life as an accountant/CPA in a high tech company in the 1980s...



**Took Correspondence & TV Courses**  
 (thanks to Bob Clasen and Charles Wedemeyer, the University of Wisconsin)



**Knowledge Navigator (1987)**  
 Apple Computer

<http://www.youtube.com/watch?v=hbAAz6w6oc>



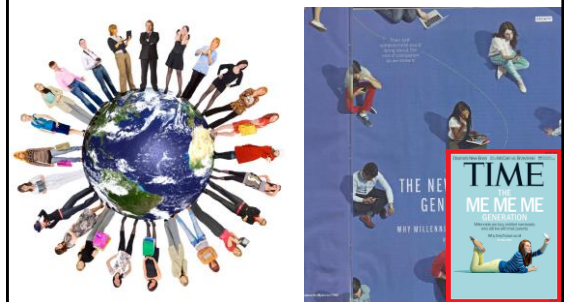
**Fast Forward 25+ Years...**  
 "Anyone can now learn anything from anyone at any time."



**May 20, 2013**

**The New Greatest Generation: Why Millennials will Save Us All, Time, Joel Stein**

<http://www.time.com/time/magazine/article/0,9171,2143001,00.html>



**Learning is Changing**  
 New Technologies =  
 New Delivery Methods...

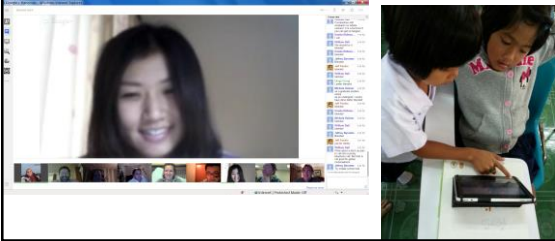


**I. Learning is More Open**  
 (80-Year-Old WGU Texas Grad Keeps His Promise, November 30, 2012, Reeve Hamilton, Texas Tribune)



## II. Learning also is More Collaborative

### Collaboration and Discussion in Google Hangouts or with iPad, Jan. 28, 2013 (Carrie Gong from Beijing Normal University)



## III. Learning is More Mobile

### Brown, Keynote talk, "Learning in Hand With Mobile Technology," Wisconsin Distance Teaching and Learning Conference, August 10, 2012



## IV. Learning is More Video-Based

### Adora Svitak, WFP Youth Representative - 2013 ECOSOC Youth Forum, March 27, 2013

"Shaping tomorrow's innovators: Leveraging science, technology, innovation and culture for today's youth?" Statement by the World Food Programme Youth Representative, Ms. Adora Svitak at the 2013 ECOSOC Youth Forum.  
<http://unhcr.org/refugees/assets/uploads/2013/03/2013-ecosoc-youth-forum-shaping-tomorrows-innovators-leveraging-science-technology-innovation-and-culture-for-todays-youth/225787553001>



## V. Learning is More Social

### Facebook reaches one billion users, CNN Money, Aaron Smith, October 4, 2012



## VI. Learning is More Personal

### iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman (January 10, 2013)

<http://mashable.com/2013/01/10/ipotty/>



Mashable  
 iPotty Aims To Entertain Toddlers During Toilet Training

## VII. Learning is More Modifiable

### Inside Look: Learning Spaces, Meeting classroom teaching and collaboration expectations, University Business, Feb. 22, 2013

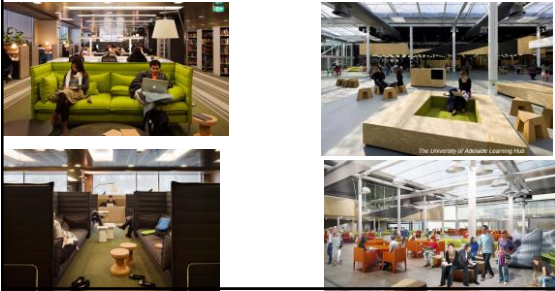
<http://www.universitybusiness.com/article/inside-look-learning-spaces>





## VIII. Learning is More Comfortable

Design for Students, with Students, "Hub Central", the \$42 million [University of Adelaide learning hub](http://designbuildsource.com.au/design-for-students-with-students) opened in October 2011, May 8, 2012, Mike Roberts

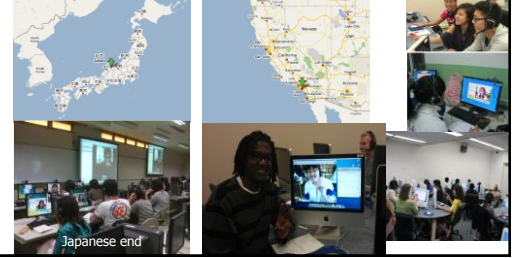


## IX. Learning is More Global

### UC Irvine (2013 report)

#### Example 3: Fundamentals of Japanese

Dr. Hidemi Riggs, Fall 2012 & Winter 2013, Tech-enhanced: [EEE AdvancedWebSpace \(Dreamweaver\)](http://www.eric-schmidt-internet.com), [Skype](http://www.eric-schmidt-internet.com) video conferencing tool, [Active Learning](http://www.eric-schmidt-internet.com), Format: 5 - 1A lectures (24 students maximum); 3 - 2A lectures (24 students maximum); 2 - 3A lectures (24 students maximum)



## X. Learning is More Ubiquitous

Flexible displays bend what's possible for computers, Jon Swartz, USA Today (May 4, 2012)



## XI. Learning is More Instantaneous

April 9, 2013

HER Computer fashions face social test: Can wearable computers fit in? Scott Martin, USA Today <http://www.eric-schmidt-internet.com> (i.e., magnify moles or injuries, see vital signs, live stream surgeries, access previous PT sessions, access research and drug info, etc.) <http://www.flexiblehealthcare.com/story/google-glass-could-have-strong-potential-healthcare-use/2013-02-18>



## XII. Learning is More Technology-Based

**DECCAN HERALD** LABOR DAY SALE 50% OFF ON A TIN

**The truth about India's \$35 computer**

By Ramesh K. Rao

Here we go again! India's Human Resource Development Minister Kapil Sibal has "launched" a \$35 computer, evidently a "dream project" of his. The touch screen, Linux based device looks iPad inspired, but we know little about how it works.

A newspaper from a distant part of the world with a circulation of up to 500,000 copies has the nerve to bring down to \$35 "to make" "cheap" computers available to "promote" literacy and PCF (Computer Literacy, Skill, Career, Office, and Multimedia) content among school children.

Will it do a little better within this year, or a parallel government-backed one-year free trial will be?

**DataWind Prepared \$20 Tablet Computer for Indian Market**

Jan. 20, 2013 10:08:01

A Canada-based company believes it can revolutionize education in India by rolling out a \$20 tablet computer.

What can you buy for \$20? A lunch for two? A new shirt? A few groceries? For India's 220 million schoolchildren, \$20 may soon buy a tablet computer.

## April 15, 2013

### World will soon be "Webified"

Google boss: Entire world will be online by 2020, Doug Gross, CNN

[http://www.cnn.com/2013/04/15/tech/web/eric-schmidt-internet/index.html?hpt=hp\\_13](http://www.cnn.com/2013/04/15/tech/web/eric-schmidt-internet/index.html?hpt=hp_13)



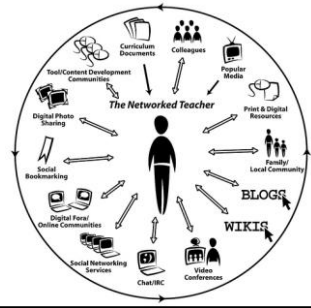
**Google Wi-Fi from the Sky**, Steven Levy,  
pp. 126-131, Wired, **September 2013**

<http://www.wired.com/gadgetlab/2013/08/googlex-project-loon/>



Google X chief Astro Teller (left) and Project Loon's first leader, Rich DeVaul, holding the system's ground-based antennas.

**The Web of Learning**



**It is very open!**

(at least in Norway & the Philippines)



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



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

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



**Audience Participation!**

**WE**

**ALL**

**LEARN!!!**



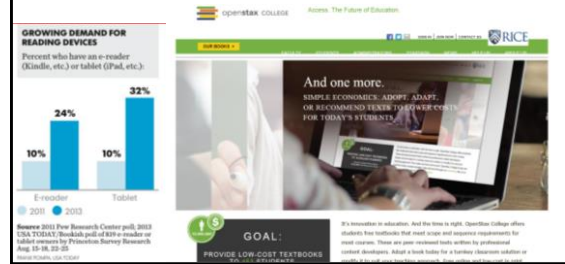
## Opener #1. Web Searching (e.g., Google, MSN, Yahoo!) in the World of e-Books (i.e., Darwin, Shakespeare, etc.)



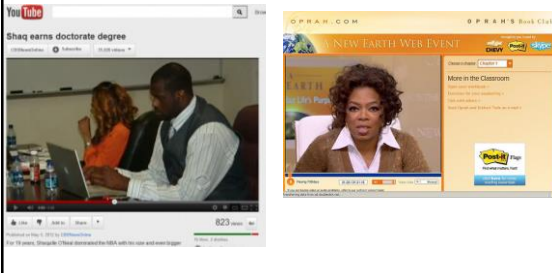
## OpenStax College

(OpenStax College offers students free textbooks that meet scope and sequence requirements for most courses. These are peer-reviewed texts written by professional content developers.)

<http://openstaxcollege.org/>

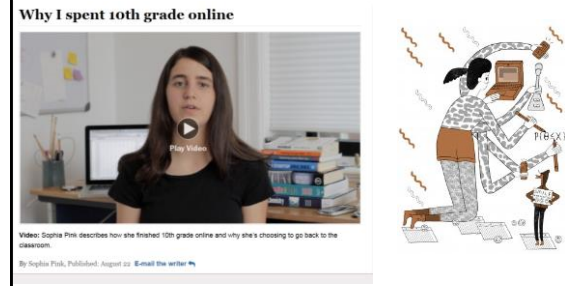


## Opener #2. E-Learning and Blended Learning



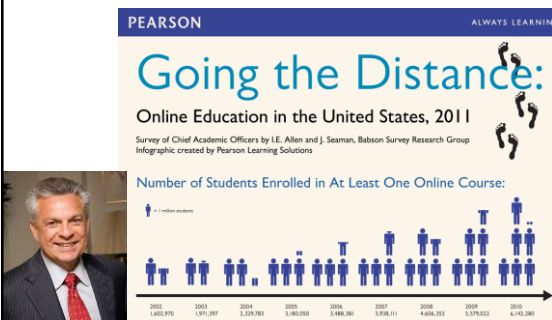
## Why I spent 10<sup>th</sup> grade online. Sophia Pink, Washington Post, August 23, 2013

[http://www.washingtonpost.com/local/education/why-i-spent-10th-grade-online/2013/08/23/?hpid=hp-local%3Aeducation%3A\\_story&hpid=hp-local%3Aeducation%3A\\_story](http://www.washingtonpost.com/local/education/why-i-spent-10th-grade-online/2013/08/23/?hpid=hp-local%3Aeducation%3A_story&hpid=hp-local%3Aeducation%3A_story)



More than six million post-secondary students are taking online classes in the USA; growing by 10% per year.

[http://sloanconsortium.org/publications/survey/going\\_distance\\_2011](http://sloanconsortium.org/publications/survey/going_distance_2011)



## Opener #3. Availability of Open Source and Free Software Moodle (July 18, 2013: 72 million users in 237 countries, 84,518 sites, 7.6 million courses)





**Opener #4. Leveraged Resources and OpenCourseWare (OCW) (e.g., free courses from Harvard Edx, MITx, CORE, OOPS)**

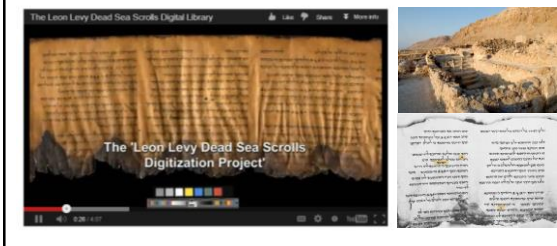


**Saylor.org**  
<http://www.saylor.org/>  
**RedHoop**  
<http://redhoop.org/>

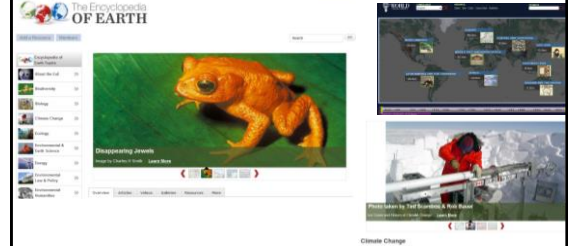


**Opener #5. Online Learning Object Repositories and Portals (shared content)**

<http://www.deadseascrolls.org/#!/explore-the-archive>  
[http://www.deadseascrolls.org/#!/explore-the-archive/search?q=site\\_en:Qumran\\_Cave\\_4](http://www.deadseascrolls.org/#!/explore-the-archive/search?q=site_en:Qumran_Cave_4)  
<http://www.deadseascrolls.org/#!/home>



**Online Encyclopedias**  
(e.g, the Encyclopedia of Earth:  
<http://www.eoearth.org/>)  
[http://en.wikipedia.org/wiki/Encyclopedia\\_of\\_Earth](http://en.wikipedia.org/wiki/Encyclopedia_of_Earth)



**October 2010, The V-PORTAL (Bonk, IU)**  
"Video Primers in an Online Repository for e-Teaching and Learning" V-PORTAL, TravelinEdMan (27 free/open YouTube videos)  
<http://www.youtube.com/user/TravelinEdMan>



**Opener #6. Learner Participation in Open Information Communities (e.g., Slashdot, Digg, Wikipedia, YouTube)**



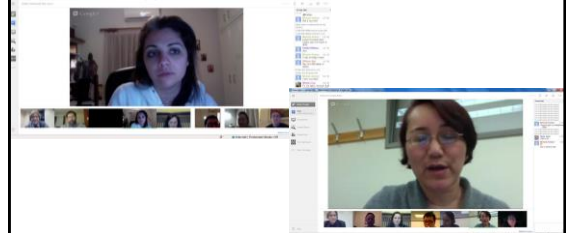
## Opener #7. Electronic Collaboration and Interaction (synchronous & asynchronous)

Soliya Connect

<http://gli.georgetown.edu/#soliya>



## Google Hangouts Class Sync Collaboration and Discussion (Spring, 2013)



## April 15, 2013 Guest Speakers

Sara de Freitas and Jim Hensman (<https://connect.iu.edu/p2ie1yx6z6x/>)  
Jay Cross (<https://connect.iu.edu/p4bytsoronh/>)



## Opener #8. Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)

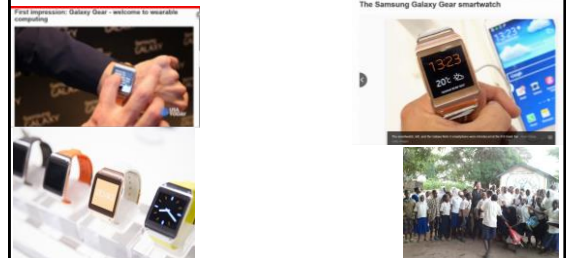


## September 5, 2013 Video games may improve brain power in older adults

<http://www.usatoday.com/story/news/nation/2013/09/04/video-games-brain-power-dementia/2762523/>



## Opener #9. Real-Time Mobility and Portability (e.g., iPhone, iPads, smart watches (September 4, 2013))







## Instructor as Conductor



## Instructor as Curator



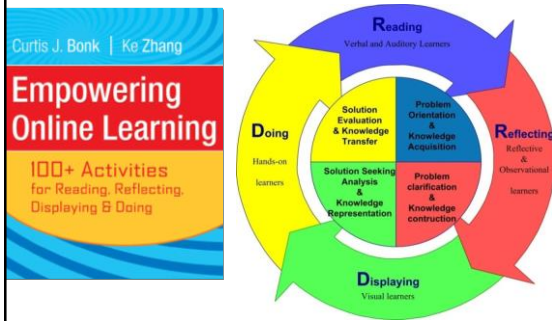
## Instructor as Concierge



## How can technology address diverse learner needs?



## Framework #1: The R2D2 Model



## The R2D2 Method

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



## 1. Auditory or Verbal Learners

- Auditory and verbal learners prefer words, spoken or written explanations.

## Read 1a. Collect and Listen to Interactive Stories

(e.g., Meograph: <http://www.meograph.com/>)  
 Timelines with Oral Histories, Slavery and the Making of America  
 Time and Place, PBS  
<http://www.pbs.org/wgbh/slavemylifetime/1857.html>

## Read 1b. Follow on Twitter

<http://venture-lab.org/education>  
<https://twitter.com/electricians>

## 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)), January 8, 2013  
 (e.g., Do We Have Souls?)

<https://www.bigquestionsonline.com/content/do-we-have-souls>

## Reflect 2b.

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

<http://www.usatoday.com/tech/news/story/2011-09-22/steve-jobs-dies/50672498/1>  
<http://www.usatoday.com/news/entertainment/story/2011-04-23/Harrison-Ford-dies-at-82/50672498/1>  
<http://www.usatoday.com/story/life/movies/2013/04/10/harrison-ford-jackie-robinson/2001783/>



### 3. Visual Learners

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



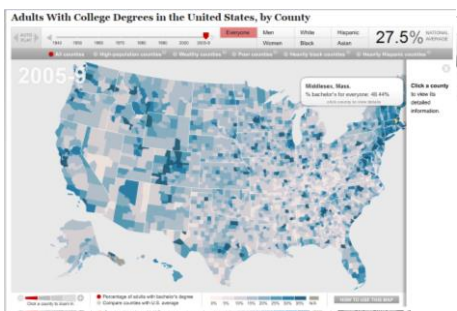
### Display 3a. Virtualize Words Used (e.g., Wordle, Taggedo, Tagul, WordSift, Word It Out)

<http://shellyterrell.com/2010/02/14/12-word-cloud-resources-tips-tools/>



### Display 3b. Interactive Map Timelines (adults with college degrees by county, May 7, 2012)

[http://270education.com/article/Keith\\_Hempen\\_Interview\\_Book\\_Author\\_on\\_Interactive\\_Graphics\\_for\\_Higher\\_Education](http://270education.com/article/Keith_Hempen_Interview_Book_Author_on_Interactive_Graphics_for_Higher_Education)



### Display 3c. 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.



### Do 4a. Student Class Documentaries

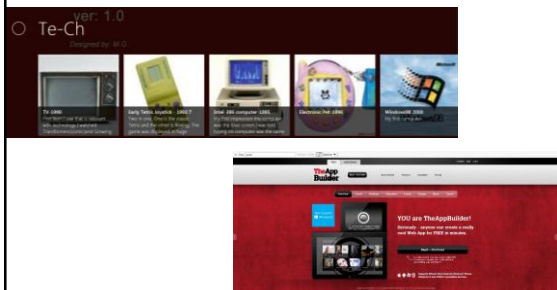
Umida's R546 Documentary Project

[http://www.youtube.com/watch?v=EMLTzqCV\\_5A](http://www.youtube.com/watch?v=EMLTzqCV_5A)



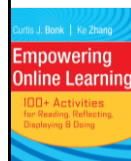
## Do 4b. Student Mobile App Creation

The App Builder: <http://www.theappbuilder.com/>  
Mintian Guo (April 2013): <http://myapp.is/r685final>



## Poll #2: What phase of the R2D2 Method do you like best?

- A. Read (Auditory and Verbal Learners)
- B. Reflect (Reflective Learners)
- C. Display (Visual Learners)
- D. Do (Tactile, Kinesthetic, Exploratory Learners)



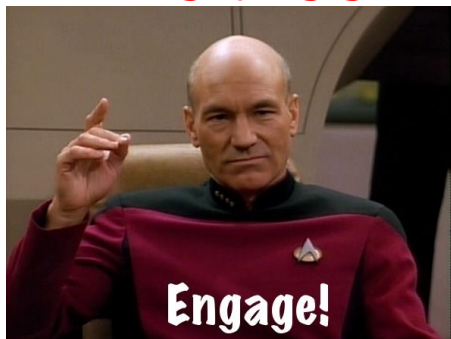
## Do you ever sleep through your classes?



## What did Jean-Luc Picard say?



## That's right, Engage!



## Ok, 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.



## 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 #2: TEC-VARIETY for Online Motivation and Retention

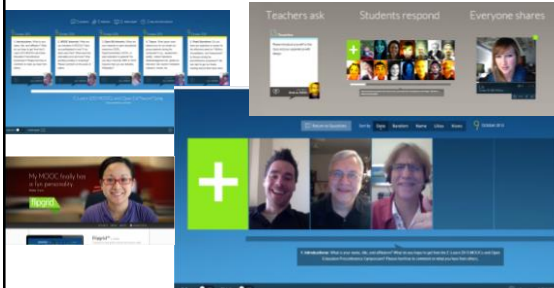
1. **Tone/Climate:** Psych Safety, Comfort, Belonging
2. **Encouragement, Feedback:** Responsive, Supports
3. **Curiosity:** Fun, Fantasy, Control
- ...
4. **Variety:** Novelty, Intrigue, Unknowns
5. **Autonomy:** Choice: Flexibility, Opportunities
6. **Relevance:** Meaningful, Authentic, Interesting
7. **Interactive:** Collaborative, Team-Based, Community
8. **Engagement:** Effort, Involvement, Excitement
9. **Tension:** Challenge, Dissonance, Controversy
10. **Yields Products:** Goal Driven, Products, Success, Ownership

## Examples of TEC-VARIETY



### 1. Tone/Climate: A. Video Introductions, e.g., Flipgrid

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



### 2. Encouragement, Feedback, etc.: A. Voice Feedback

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

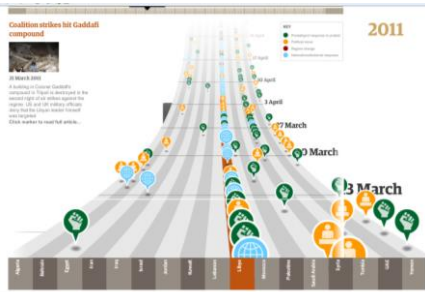
<http://vocaroo.com/i/s01g2uGFCZ4S> (NCTU)



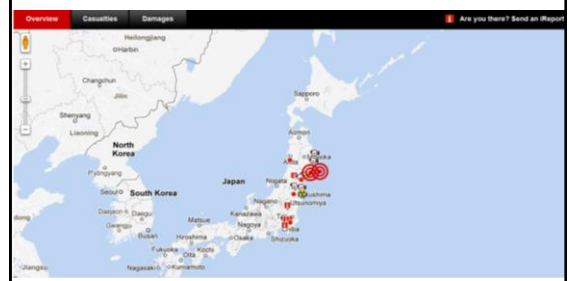




**8. Engagement, Effort: A. Arab spring: an interactive timeline of Middle East protests, The Guardian, Garry Blight, and Sheila Pulham, July 12, 2011**  
<http://www.guardian.co.uk/world/interactive/2011/mar/22/middle-east-protest-interactive-timeline>



**8. Engagement, Effort: B. CNN (2011). Map: Impact of Japan tsunami and earthquake. CNN.**  
<http://www.cnn.com/SPECIALS/2011/japan-quake/map/>  
 also: Visualizing Emancipation



**9. Tension, Challenge, etc.: A. Game Show Final Project, April 25, 2011, Kim Seeber**  
 Website: <http://mypage.iu.edu/~kseeber/web2.0technology.swf>

**10. Yields Products, Goals: A. Final Product Video Summaries**

Piercarlo Abate: <http://www.youtube.com/watch?v=-TURzHQ0aU>  
 Qi Li, Gangnam: <http://www.youtube.com/watch?v=7Q429lpZaU&feature=youtu.be>  
 Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW91W8>

**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**



**Slides at: TrainingShare.com**  
**Papers: PublicationShare.com**  
**Book: <http://worldisopen.com/>**