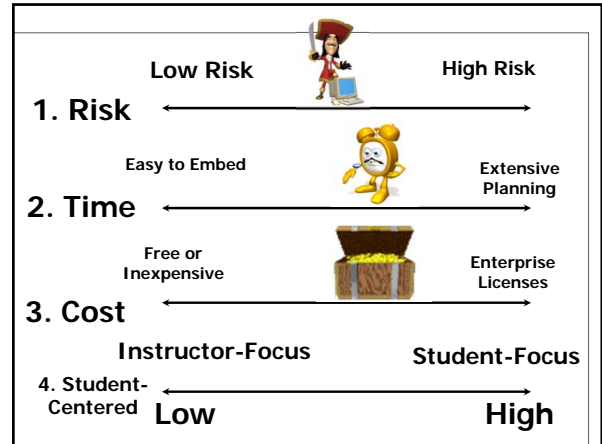
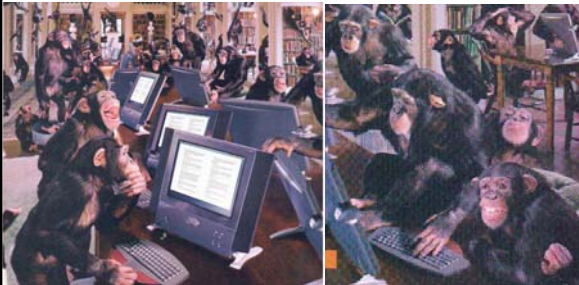


## Stretching the Edges of Emerging Learning Technology with Three Frameworks

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

## Framework #1: From Tinkering to Tottering to Totally Extreme Learning...



## Tinkering




## Tinker #1. Webcast Lectures (Tegrity, Echo360, Mediasite, etc.)



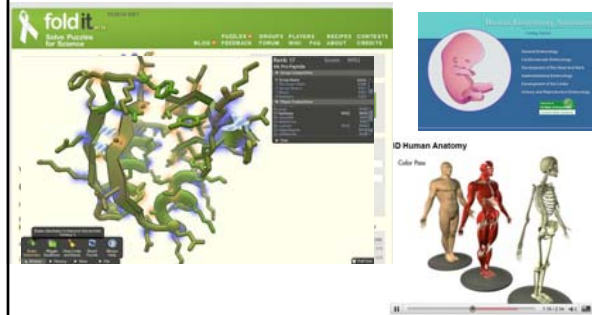
## Tinker #2. Timeline Tools (e.g., USA Today, August 26, 2011)

<http://www.usatoday.com/news/destinations/story/2011-08-25/Martin-Luther-King-Jr-Memorial-in-Washington-A-closer-look/501363701300034news>

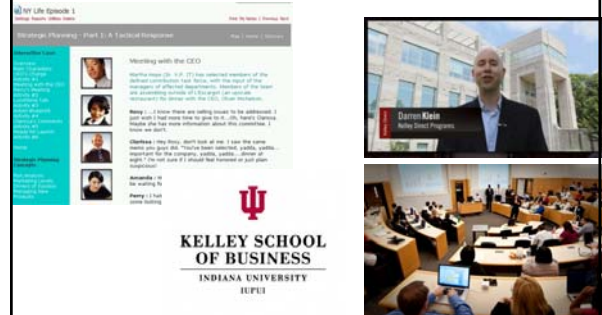
Martin Luther King Jr. Memorial in Washington: A closer look



### Tinker #3. Video Animations and Simulations



### Tinker #4. Case Learning and Role Play (Kelley Direct, IU)



### Tinker #5. Online Experiments (e.g., psychology)



### Tottering



### Totter #1. Wikibooks, Wiki-Glossaries, Wiki-Syllabi (Ron Owston, York University, Toronto)



### Totter #2. Global Class Videoconferencing and Remote Lands

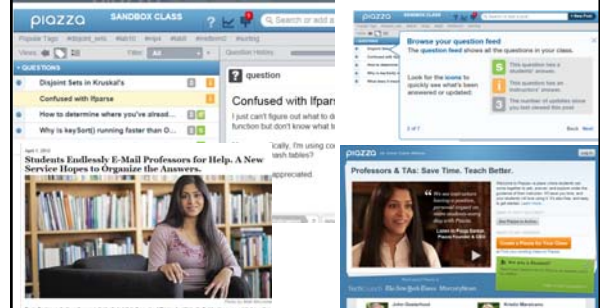


### Totter #3. Video Blogging



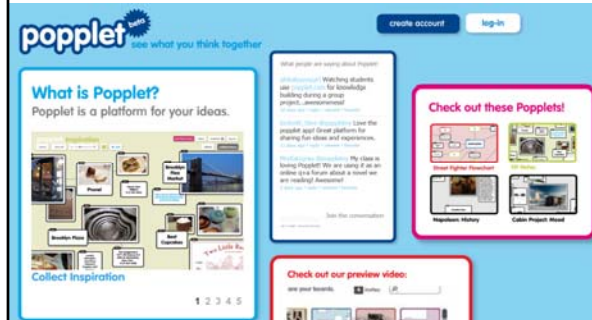
### Totter #4. Online Instructor Q&A

April 1, 2012, Piazza: <https://piazza.com/>



### Totter #5. Student Collaborative Knowledge Building and Sharing

(e.g., Popplet: <http://popplet.com/>)



### Totally Extreme Learning Learn Anytime, Always On/Mobile.



Robert Johnson, who championed the open-format Learn Anytime program at a two-year college in Louisville, Ky. checks students' e-mail while waiting for a flight. "Everything I need to do today, I can do on my phone," says Robert Johnson...He often grades papers and communicates with students from a cafe near his home.

### Totally Extreme #1. Immediate Science Ida (a transitional species) 47-Million-Year-Old Fossil *the Missing Link?* (May 20, 2009)



### Totally Extreme #2. iPod Learning from MIT OCW (e.g., Wendy Ermold, University of Washington)



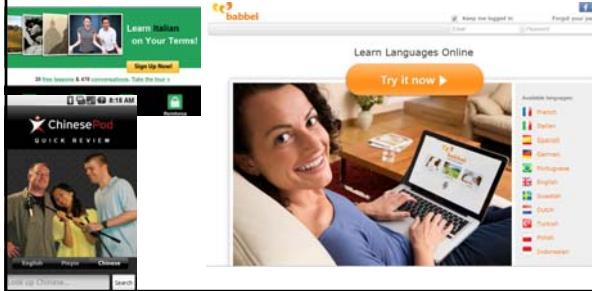
### Totally Extreme #3. International and Global Education and Competitions (e.g., Global Game Jams, online role play, Global Videoconferencing)



### Totally Extreme #5. Telepresence and Teleportec Systems (e.g., Cisco and HP)

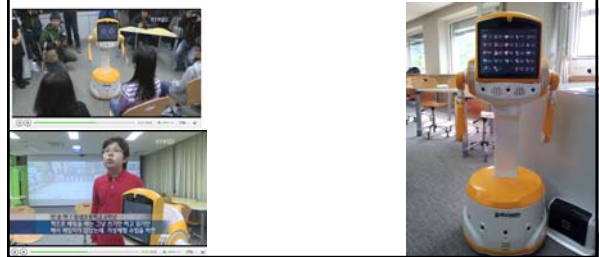


### Totally Extreme #5. Online Language Learning and Conversations (e.g., PaTalk, iTalki, Palabea, Babbel)



### Totally Extreme #6. Robots Teaching English Sejong City, South Korea

The robot assists English teacher & teaches students English, too. The first "Smart School" was a big issue in Korea lately.



### 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\\_bn11](http://www.cnn.com/2012/05/22/tech/innovation/new-apple-campus/index.html?hpt=hp_bn11)



### Poll #1: Any light bulbs going off in your head so far...?

- A. Yes definitely
- B. Maybe
- C. No

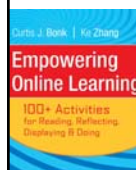


## How can technology address diverse learner needs?



## Framework #2: The R2D2 Method

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



## Yes, there are battles!



## 1. Auditory or Verbal Learners

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



## Read 1a. Wikibook or Wikipedia Editing or Critiques

- Ask students to critique a wikibook or page from Wikipedia



## Read 1b. Reading from Open Access Journals (e.g., PLOS)



### Read 1c. Course Announcements (e.g., Teaching with Twitter; Course announcements and following people (e.g., microblogging)

The image shows a Twitter interface with various tweets and a 'Follow me!' sign featuring a blue bird icon. The tweets include course-related information and user interactions.

### Read 1d. Listen to Open Access Podcast Shows (and write papers)

The collage features a 'Military History Podcast' cover with a question mark, a woman with a laptop from 'NursingShow.com', and a large graphic for 'ENGLISH IN THE REAL WORLD weekly podcasts' with a yellow speech bubble icon.

### Read 1e. Online Crossword Puzzles (e.g., <http://www.eclipsecrossword.com/>)

Create Online Crossword Puzzles!

The screenshot shows the EclipseCrossword website with a crossword puzzle grid and a banner indicating '4,000,000' downloads. The text describes the site's features and provides the URL <http://www.eclipsecrossword.com/>.

### 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

A circular diagram illustrates the reflective learning cycle with stages: Doing, Reflecting, and Reviewing. Below the diagram are three images of people, likely related to the reflective learning process.

### Reflect 2a. Critical Friend Blog Postings (Kristen and Susan)

The collage includes a photo of a woman, a blog post titled 'R685: The Web 2.0', and other related content. The blog post discusses personal reflections on Web 2.0 and mentions 'Personalized Learning'.

### Reflect 2b. Expert and Domain Specific Blog Reflections (English, Health, Business, etc. blogs)

The image shows screenshots of several expert and domain-specific blogs, including 'The Wall Street Journal', 'The English Blog', and 'EMJ'. The content includes news articles and reflections on various topics.

### Reflect 2c.

**Oral Online Dictionaries Help Preserve Languages, Cultures Muted by Modernity, The Wall Street Journal, February 18, 2002**  
<http://online.wsj.com/article/SB100014240529702648904057722898276760026.html#articleTabs%3Dinteractive>



Talking the Talk, for Priority



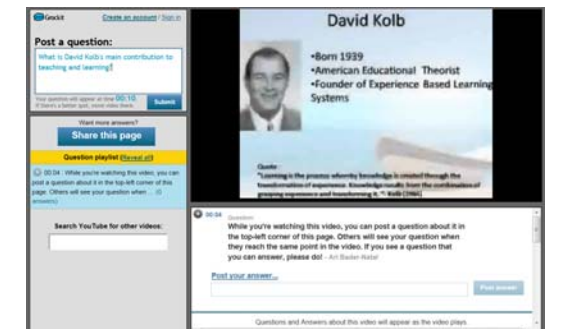

### Reflect 2d. Discuss Videos (e.g., Vialogues; <https://vialogues.com/>)



Edutopia Chairman and George Lucas Discuss Teaching Visual Literacy

### Reflect 2e. Question and Answer on Videos (e.g., Grockit Answers; David Kolb)

[https://grockit.com/answers/v/yt.8VJIKBCZO\\_c.public](https://grockit.com/answers/v/yt.8VJIKBCZO_c.public)



David Kolb


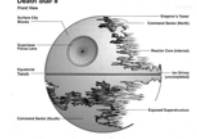

- Born 1939
- American Educational Theorist
- Founder of Experience Based Learning Systems

Question: "Learning is the primary whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it." - Kolb (2006)

Answer: While you're watching this video, you can post a question about it in the top-left corner of this page. Others will see your question when they reach the same point in the video. If you see a question that you can answer, please do! - Grockit (2012)

### 3. Visual Learners

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


### Display 3a. Videos for clinical education (Sungkyunkwan University School of Medicine, [www.mededu.or.kr](http://www.mededu.or.kr))



환자의 앞쪽에서, 왼손으로 환자의 오른쪽 갈상살을 반대편으로 밀고,

### Display 3b. Online News Stories

Frontier Airlines employees sharing concerns over impending layoffs, WTMJ News, Feb 14, 2012  
<http://www.todaystmj4.com/news/local/139325383.html>



FRONTIER GETS JOBS

RICH BONK





**Display 3i. Concept Mapping and Timeline Tools** (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

**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. Podcast Productions and Shows**

**Do 4b. Student Films and Documentaries**



<http://vimeo.com/33090550/> (Verily)  
<http://vimeo.com/33123125> (Anjali)  
[http://www.youtube.com/watch?v=EM1Tz0CV\\_5A](http://www.youtube.com/watch?v=EM1Tz0CV_5A) (Umida's R546 Documentary Project)  
<http://www.youtube.com/watch?v=IQZHvuZ3rbw&feature=youtu.be> (Yue)

**Do 4c. Visual presentations** (e.g., Prezi)

<http://prezi.com/lhmbhl59xd46/is-the-world-open/>  
<http://prezi.com/8h7qrxtyaymv/the-world-is-open/>

**Do 4d. Survey Research and Market Analysis** (e.g., Mister Poll, MicroPoll, Zoomerang, SurveyShare)

### Do 4e. Uploading Mobile Books (e.g., BookRix, <http://www.bookrix.com/>)





**Mobile Devices & Learning**  
How mobile devices are re-shaping the field of education

By Anne Meyer

### Do 4f. Negotiate Meanings Online (e.g.m MeetingWords: <http://meetingwords.com/>)

MeetingWords is a simple text editor for the web.  
Your text is saved on the web, and more than one person can edit the same document at the same time. Everybody's changes are instantly reflected on all screens.  
Work together on meeting notes, brainstorming sessions, homework, team programming and more!



**MeetingWords**  
MeetingWords is a simple text editor for the web.

Your text is saved on the web, and more than one person can edit the same document at the same time. Everybody's changes are instantly reflected on all screens.

Work together on meeting notes, brainstorming sessions, homework, team programming and more!

**Create public pad**  
No sign-in, start writing instantly

- Highlighted edits: Each author has their own highlight color
- Instantly updated: Get everyone on the same page at the same time
- Easy undo: Every change is saved on the web and can easily be undone

### Do 1g. Interactive Glossaries Umida Khikmatillaeva, Dec. 2011, P540 <http://learningplanet.shutterfly.com/>



**Learning Planet**  
Home Glossary Videos Theorists People

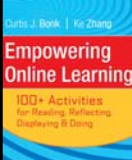


Make your Share site today. Great for Family Blogs, Youth Blogs

Learning Theorists

- Classical Conditioning - Ivan Pavlov (2:55) Video on Classical Conditioning
- Piaget Vygotsky video (2:09) Action • 1 view
- Piaget & Vygotsky (3:24) Action • 1 view see for EDUC-17310, 5% Learning and Addressed and "Piaget's Cognitive Observational Learning"
- PIAGET VS VYGOTSKY (3:06) Action • 0 views

### Poll #2: What phase of the R2D2 Method will you use most?

- Read (Auditory and Verbal Learners)
- Reflect (Reflective Learners)
- Display (Visual Learners)
- Do (Tactile, Kinesthetic, Exploratory Learners)

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




### April 15, 2012 Can Colleges Manufacture Motivation?, Dab Berrett, Chronicle of Higher Ed <http://chronicle.com/article/Can-Colleges-Manufacture/131564/>

April 15, 2012

#### Can Colleges Manufacture Motivation?

By Dan Berrett  
Vancouver, British Columbia

Motivation is often thought of as an inborn personality trait whose absence helps explain why some succeed while others fail. Recent research, including here at the annual meeting of the Educational Research Association, suggests that colleges can't manufacture motivation.



Nancy L. Ford

**Ok, Million Dollar Question:**  
 How do you motivate online learners?  
 What Words come to mind?  
 (Please enter in chat window)



### 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.



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



### Framework #3: 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 Course Intros**  
(examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

Yun Yun Chow, Open U Malaysia, Making Art Lessons Come Alive with Web 2.0  
<http://www.youtube.com/watch?v=BO9rqJD1GXo>



**2. Encouragement, Feedback, etc.:**  
**A. Create Screencasts**

(Jing, GoView, Screenr, slide from Zaid Ali Alsagoff [zaid.alsagoff@gmail.com])



**2. Encouragement, Feedback:**  
**B. System Feedback and Self-Testing**

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



**2. Encouragement, Feedback, etc.:**  
**C. Video Scenario Learning...Accounting Interviews and Preparatory Course Review Modules**

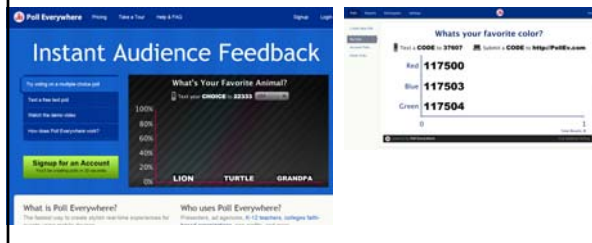
(Franklin University, cost and forensic accounting course)  
<http://video.franklin.edu/Franklin/acct/management/accounting/cost-behavior-player.html>  
<http://video.franklin.edu/Franklin/acct/342/common/fraudScenario02.html>



**2. Encouragement, Feedback, etc.:**  
**D. Blog and Website Polling**

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

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



**2. Encouragement, Feedback, etc.:**

**E. Student response systems**

(e.g., Socrative; <http://www.socrative.com/how-it-works.php>)



### 3. Curiosity, Fun: A. Online News (Politics, Giant jellyfish, Tiny T. rex, and Ardi)

### 3. Curiosity, Fun: B. Online Database Activities (e.g., WolframAlpha; <http://www.wolframalpha.com/>)

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

### 3. Curiosity, Fun: D. Cross-Cultural Videoconference (e.g., Global Nomads Group, Int'l Studies for Indiana Schools (i.e., ISIS); Chinese, Niger, Sudan, Life in Eastern Europe, the History and Culture of Mexico)

### 3. Curiosity, Fun: E. Create Cartoons, Movies, and Animations (slide from Zaid Ali Alsagoff [zaid.alsagoff@gmail.com])

Create Cartoons, Movies & Animations!

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

**4. Variety, Novelty, Fun, Fantasy:**  
**B. Random Lists** (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)

The screenshot shows three interactive tools: a coin flipper with two gold coins, a dice roller showing two dice, and a list randomizer with a list of names and a 'Random Sequence Generator' button. A timer shows 00:01:39.

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

The image features a stylized horse silhouette composed of various Google search results and icons. To the right, a person is shown sitting at a desk with a large curved monitor, representing a 'Google Jockey'.

**5. Autonomy, Choice:**  
**B. Web Exploration Assignments**

1. Complete Works of Charles Darwin Online: <http://darwin-online.org.uk/>
2. The Complete Works of William Shakespeare: <http://shakespeare.mit.edu/>
3. Edgar Allan Poe Society of Baltimore: <http://www.eapoe.org/>
4. Einstein Archives Online: <http://www.alberteinstein.info/>
5. Federal Resources for Educational Excellent project: <http://free.ed.gov/>
6. Global Text Project: <http://globaltext.org/>
7. iBerry (Open Courseware Directory): <http://iberry.com/>
8. Jane Austen: <http://www.janeausten.org/>
9. The Jane Goodall Institute: <http://www.janegoodall.org/>
10. Timeless Hemmingway: <http://www.timelesshemingway.com/>

A collage of four website thumbnails: Darwin Online, Edgar Allan Poe Society, Einstein Archives, and the Jane Goodall Institute.

**Poll #3:**  
**Which of the first 5 motivational principles will you use the most?**

- A. Tone/Climate
- B. Encouragement/Feedback
- C. Curiosity/Fun
- D. Variety/Novelty
- E. Autonomy/Choice/Flexibility

A small cartoon illustration of a person with long hair sitting at a desk with a laptop.

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

The image shows a medical case presentation with several slides. The main slide is titled 'Stomach, endoscopic examination and biopsy: Poorly differentiated tubular adenocarcinoma'. It includes microscopic images and a 'Final conclusion: Advanced gastric carcinoma with multiple lung metastases with lymphatic growth'. A portrait of Mark Braun is at the bottom.

**7. Interactive, Collaborative:**  
**A. Working In Virtual Teams**  
 (e.g., Collanos, Ning, Wikispaces, Google Docs)

Two images: one showing a group of people in a virtual meeting environment, and another showing a woman smiling at a computer monitor. Logos for Ning and Google Docs & Spreadsheets are at the bottom.

**7. Interactive, Collaborative:**  
**B. Collaborative Video Annotations and Discussions**  
 (Craig Howard, IU)  
<http://scholarworks.iu.edu/journals/index.php/ijdl/article/view/853/912>

**7. Interactive, Collaborative:**  
**C. Smartboards and 3D worlds**  
 (Meeyong Kim, Korea)

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

**8. Engagement, Effort:**  
**B. Interactive Simulations**  
<http://phet.colorado.edu/en/simulation/energy-skate-park>

**9. Tension, Challenge:**  
**A. Predict outcomes (May 2012)**  
 (e.g., Interactive Political Maps: Huffington Post)  
<http://elections.huffingtonpost.com/2012/romney-vs-obama-efactoral-map/cartogram>

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


**10. Yields Products, Goals:**  
**A. Student YouTube Products**

Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW9lW8>  
 Shuya Xu and Yue Ma (Blog my online lrng): <http://www.youtube.com/watch?v=jm7GQM9rzhc>  
 Cesur Dagli (Animal perspectives on course): <http://www.youtube.com/watch?v=cDeTEld05lc>



**Poll #4:**  
**Which of the last 5 motivational principles will you use the most?**

- A. Relevance/Meaningfulness
- B. Engagement/Effort
- C. Interactive/Collab/Community
- D. Tension/Challenge/Dissonance
- E. Yielding Products/Goals



**Time for Commitments:**  
 Which principle(s) of TEC-VARIETY will you use?

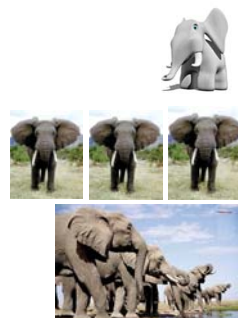
- Tone/Climate
- Encouragement, Feedback
- Curiosity

- Variety
- Autonomy
- Relevance
- Interactive
- Engagement
- Tension
- Yields Products




**Poll #5: How many new ideas did you get today?**

1. 0 if I am lucky.
2. 1 or 2.
3. 3-5.
4. 6-10.
5. More than 10.



**Poll #6:**  
**Which framework do you like better?**

- A. TEC-VARIETY
- B. R2D2



**Any Questions?**  
 Try the R2D2 Model!  
 Try TEC-VARIETY too...

- Slides at: [TrainingShare.com](http://TrainingShare.com)
- Papers: [PublicationShare.com](http://PublicationShare.com)
- Book: <http://worldisopen.com/>
- Email: [curt@worldisopen.com](mailto:curt@worldisopen.com)

