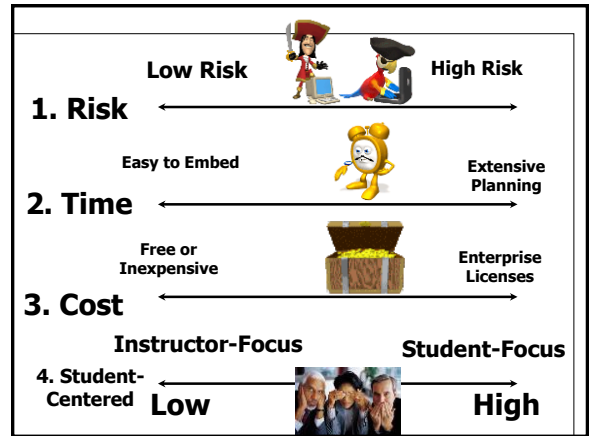


## Where are You R2D2?: Addressing Diverse Online Learner Needs with the Read, Reflect, Display, and Do Model

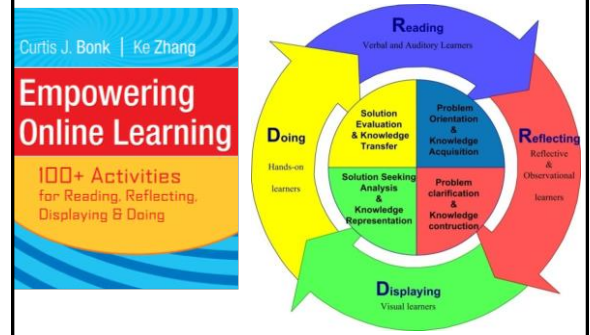
Curtis J. Bonk, Professor, Indiana University  
 cjbonk@indiana.edu  
<http://mypage.iu.edu/~cjbonk/>



## Part I. 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/>)

**Meograph**  
Easily tell interactive stories

Meograph for:

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

**ENGLISH IN THE REAL WORLD**  
Weekly podcasts

**THE FIRST AID SHOW**

About 50 Plus Class Training Instructors Links Online Training Pets Sc

**Keeping Safe Near Railways When Administering First Aid**

By Ash-Joshua@ash - 14 October 2013 - No Comments

Keeping Safe Near Railways When Administering First Aid is important as you may think you are helping someone but you may get sucked under a train in the blink of ...

Continue Reading ...

NursingShow.com

### Read 1c. Grammar Checkers

(e.g., Grammarly, Ginger, GrammarCheck, PaperRater, and SpellCheckPlus)

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

**The World's Best Grammar Checker**

**GRAMMARLY**  
CORRECTOR

**PaperRater**

- Grammar & Spelling Check
- Free Online Proofreading
- No Downloads

**www.grammarcorrector.org**

### Read 1d. Twitter Fed Class Discussions

[https://twitter.com/HSI\\_Brands](https://twitter.com/HSI_Brands)

**ASHIMEDIC First Aid**  
@HSI\_Brands

ASHIMEDIC First Aid: 242 Photos, 2049 Followers, 2495 Friends, 108 Lists & 640 Retweets

Follow ASHIMEDIC First Aid

750 Tweets

ASHIMEDIC First Aid @HSI\_Brands  
Thank you to Conference: Only a Tweet to Get you an @myapp@!

ASHIMEDIC First Aid @HSI\_Brands  
Video to Rescue Arise! [http://arise.org](#)

ASHIMEDIC First Aid @HSI\_Brands  
Hunting Safety, Now Available! [http://arise.org](#)

### Read 1e. Online Crossword Puzzles

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

Create Online Crossword Puzzles!

Welcome to EclipseCrossword!

EclipseCrossword is the first, only, **free** way to create crossword puzzles in minutes. **4,000,000+** downloads

It's never been simpler - just give EclipseCrossword a list of words, and there, we'll show the rest is possible, and there's a crossword puzzle with just the words you want. EclipseCrossword has been downloaded more than four million times by people just like you.

Who can use EclipseCrossword?

- Teachers and parents: Use crosswords to review vocabulary and lessons for all subjects. Students may actually even enjoy doing the crossword! Crossword puzzles encourage logical thinking and critical thinking. Crosswords can be printed or submitted to your website.
- Students: You can easily create and share crossword puzzles with EclipseCrossword - crossword puzzles are a great way to get practice with our site, and even take on the challenge. You can also play the puzzle right on our website, or you can print a printable version so they can take it to their home.
- Homework: Parents: Reduce the stress on homework by adding a crossword puzzle each time and make parents and kids do a fun homework activity. EclipseCrossword lets you easily see how they can be used in your school or home or publishing website.
- Word lists: You can use EclipseCrossword to produce great looking crossword puzzles. If you're not sure what you'd make a crossword about, check out our word lists.

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

### Read 1f. Emergency Preparedness Information

**First Aid Topics**  
Step by Step Procedures for First Aid

**Disaster Preparation**  
Tornadoes, Floods, Earthquakes, Etc.

**Emergency Protocols**  
Site Specific Protocols and Equipment

**Essential Reference Videos**  
Video Demonstrations of Essentials

**Overview**

Tornadoes are nature's most violent storms. Spinning from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard.

Some tornadoes are clearly visible, while others are merely being hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible.

Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the leading edge of a thunderstorm. It is not uncommon to see clear, dark skies behind a tornado.

The following are facts about tornadoes:

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dark and debris are picked up or a cloud forms in the funnel.
- The average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 MPH, but may vary from relatively to 70 MPH.
- Tornadoes can accompany tropical storms and hurricanes as well.

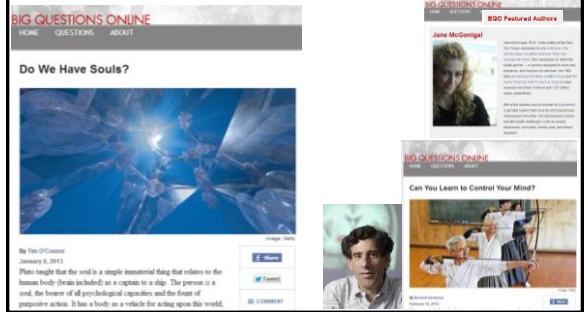
## 2. Reflective and Observational Learners

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



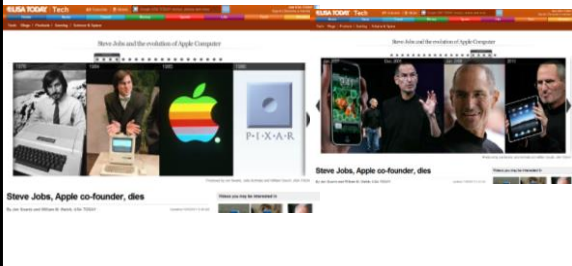
## Reflect 2a. Big Issue Reflections (Big Questions Online (BQO)), January 8, 2013 (e.g., Do We Have Souls?)

<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/DeathAndFunerals/story/2011-08-25/Martin-Luther-King-38-Memorial-in-Washington-8-closure-book/36136490/3?scsp=34news>  
<http://www.usatoday.com/story/life/movies/2011/04/10/harrison-ford-jackie-robinson/2001783/>



## Reflect 2c. Workplace and Field Reflections



## Reflect 2d. Scenario Learning

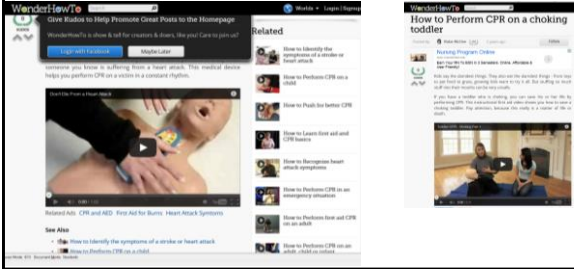


## 3. Visual Learners

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



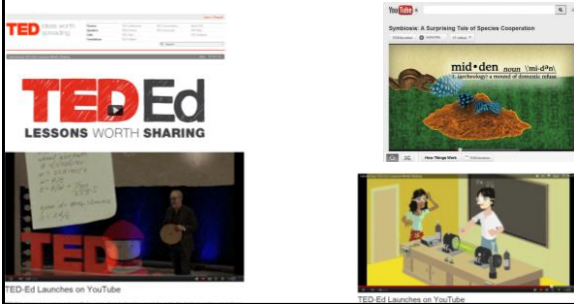
**Display 3a.**  
**Anchored Instruction in Shared Online Videos (e.g., WonderHowTo)**



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



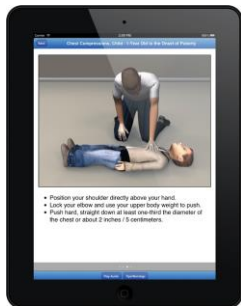
**Display 3c.**  
**Educational Videos: TED-Ed**  
<http://education.ted.com/>



**Display 3d. Medical Animations**  
 (e.g., YouTube, CNN, BBC)  
[http://www.youtube.com/watch?v=gMpXrk2\\_Qzc](http://www.youtube.com/watch?v=gMpXrk2_Qzc)



**Display 3e. Video Demonstrations**  
 (e.g., chest compressions child)



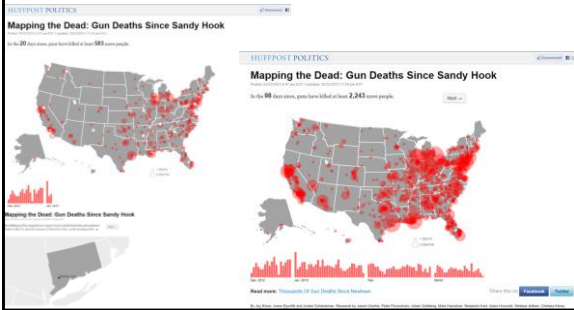
**Display 3f. Virtualize Words Used**  
 (e.g., Wordle, Taggedo, Tagul, WordSift, Word It Out)

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



**Display 3g. Time Revealed Interactive Maps**  
**Mapping the Dead: Gun Deaths Since Sandy Hook,**  
**Huffington Post, March 22, 2013**

<http://data.huffingtonpost.com/2013/03/gun-deaths>



**Display 3h. Visual Library Search**  
**DPLA (Digital Public Library Of America)**

<http://dp.la/>

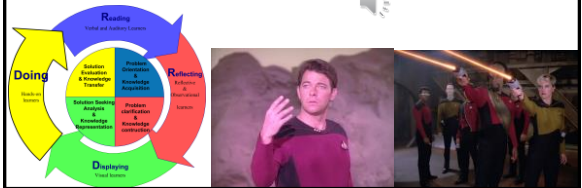


**Display 3i. Concept Mapping and**  
**Timeline Tools (Bubbl.us, Cmap, Freemind,**  
**Gliffy, Mindmeister, or Mindomo)**



**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.

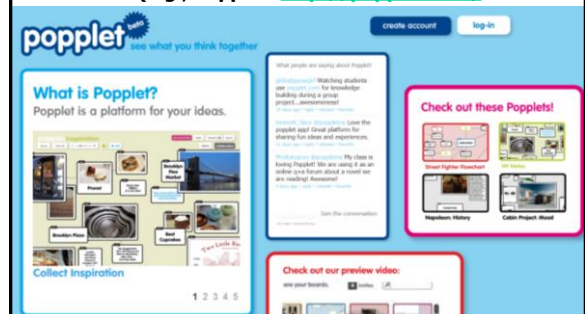


**Do 4a. Podcast Productions**  
**and Shows**

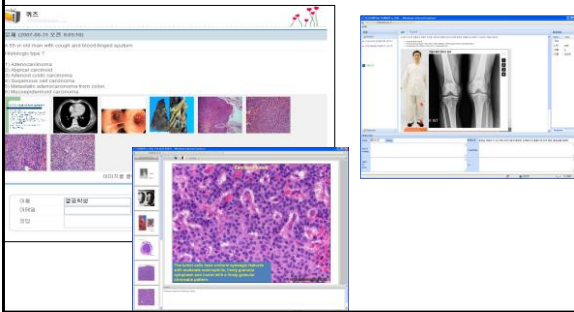


**Do 4b. Student Collaborative**  
**Knowledge Building and Sharing**

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



**Do 4c. Virtual Quizzes**  
 (Sungkyunkwan University School of Medicine, www.mededu.or.kr)



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

<http://prezi.com/lhmhhl59xd46/is-the-world-open/>  
<http://prezi.com/Rh7arxlyaymv/the-world-is-open/>



**Do 4e. Student Class Documentaries**  
 Umida's R546 Documentary Project

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



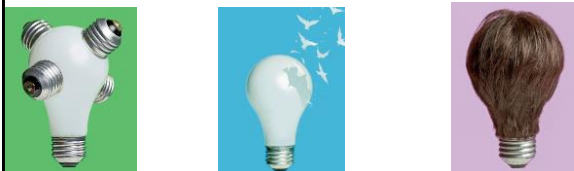
**Poll #1: What phase of the R2D2 Method did you get the most ideas from ?**

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



**Poll #2:**  
**Any light bulbs going off in your head so far...?**

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



**We're not done yet...**



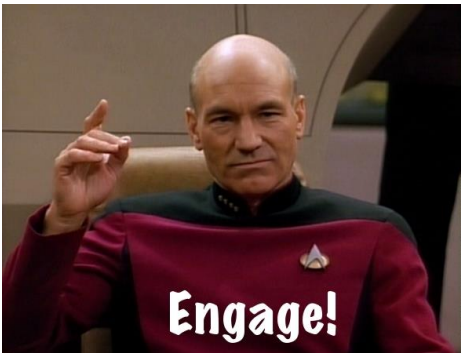
## Part II. Motivation and Engagement



## What did Jean-Luc Picard say?



## That's right, Engage!



How do we engage online?



## What was it that he said?



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 Course Intros

<http://www.youtube.com/watch?v=kOdFRFDIbW0>



CPR - First Aid Instructor Workshop



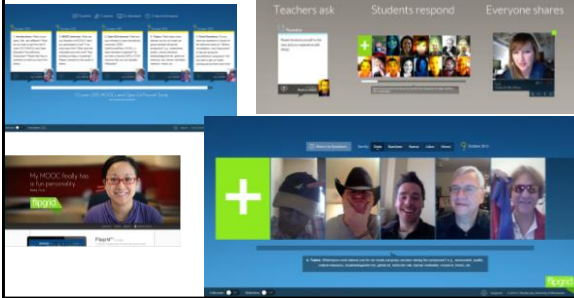
AnointedTherapist 22 videos



439 views



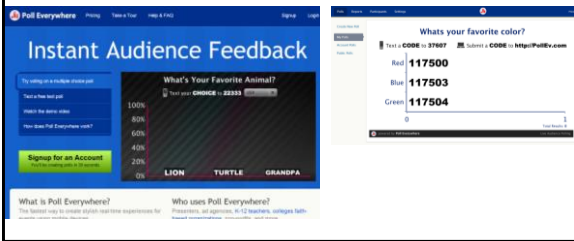
**1. Tone/Climate: B. Video Introductions, e.g., Flipgrid**  
<http://flipgrid.com/#429f88c5>



**2. Encouragement, Feedback, etc.: A. Voice Feedback**  
**Vocaroo;** <http://vocaroo.com/http://vocaroo.com/i/s1SnBUXDxFdf> (Oct 30)



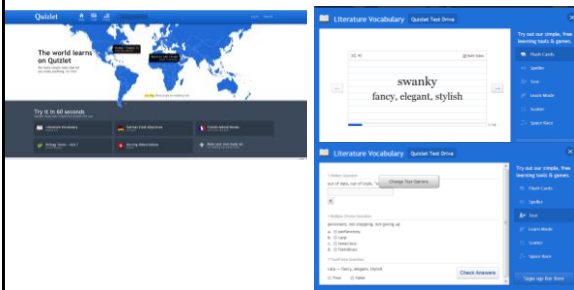
**2. Encouragement, Feedback, etc.: B. Blog and Website Polling**  
 (e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)  
<http://www.pollerywhere.com/>



**2. Encouragement, Feedback, etc.: C. Create Screencasts**  
 (Jing, GoView, Screenr, slide from Zaid Ali Alsagoff [zaid.alsagoff@gmail.com])



**2. Encouragement, Feedback, etc.: D. Quizlet (online quiz tools)**  
<http://quizlet.com/>



**3. Curiosity, Fun: A. Something in the News**  
 (e.g., Fauja Singh, 101, finishes last race, February 24, 2013)  
[http://espn.go.com/sports/running/story/\\_/id/8979487/fauja-singh-101-caps-career-10k-hong-kong](http://espn.go.com/sports/running/story/_/id/8979487/fauja-singh-101-caps-career-10k-hong-kong)



**3. Curiosity, Fun:**  
**B. Demonstrate Skill in Action**  
 (e.g., In the Right Place at the Right Time - CPR Save Caught on Camera, March 5, 2013, Kristine Rice, ASHI)

<http://www.hsl.com/Blog/Bid/195941/In-the-Right-Place-at-the-Right-Time-CPR-Save-Caught-on-Camera>



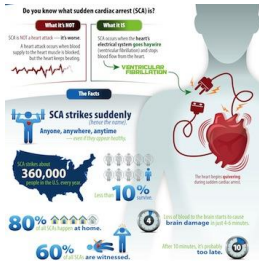
**3. Curiosity, Fun:**  
**C. Online Quiz Games**  
**Jeopardy Labs**

<https://jeopardylabs.com/play/ganttpardy>



**3. Curiosity, Fun:**  
**D. Infographics**  
 (October is Sudden Cardiac Arrest Month)

<http://www.hsl.com/Blog/Bid/1102242/October-is-Sudden-Cardiac-Arrest-Month>



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



**5. Autonomy, Choice:**  
**A. Online Database Activities**  
 (e.g., WolframAlpha)

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



**5. Autonomy, Choice:**  
**B. Demonstrate, Explore, and Share Websites**  
 Commonwealth of Learning, March 2013

[http://www.col.org/news/Connections/2013Mar/Documents/Connections\\_March2013.pdf](http://www.col.org/news/Connections/2013Mar/Documents/Connections_March2013.pdf)

ONLINE COURSE DEVELOPMENT FOR TEACHER EDUCATION IN JAMAICA



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

**6. Relevance, Meaningfulness:**  
**A. Video Scenario Learning**  
 (Franklin University, cost and forensic accounting course)  
<http://video.franklin.edu/Franklin/acct/managerialAccounting/cost-behavior-player.html>  
<http://video.franklin.edu/Franklin/acct/342/common/fraudScenario02.html>  
<http://www.youtube.com/watch?v=cmost5UgQ8&list=TLzmmALKW1T>

**6. Relevance, Meaningfulness:**  
**B. Design Multimedia Glossaries**  
 Ozgur Ozdemir, December 2012  
<http://r685glossary.shutterstock.com/>  
 Umida Khikmatillaeva, Dec. 2011, P540  
<http://learningplanet.shutterstock.com/>

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

**7. Interactive, Collaborative:**  
**A. Collaboration and Discussion in**  
**Google Hangouts**  
 (January 29 and February 25, 2013)

**7. Interactive, Collaborative:**  
**B. Negotiate Meanings Online**  
 (e.g., PiratePad: <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!

### 8. Engagement, Effort: A. Online Experiments (e.g., psychology)

**perception lab**

Facial Transforming Software & Demos

**PSYCHEXPERIMENTS**  
Psychology Experiments on the Internet

Participate in Experiments

Top Ten Online Psychology Experiments  
By SANDRA KUIBE  
Psych Central  
Best of the Web

### 8. Engagement, Effort: B. Interactive Simulations

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

PhET Interactive Simulations

Color Vision

Download 1,200 kb | Run Now

Version: 1.04 (change log)

Sample of student-generated explanation of spring energy

### 9. Tension, Challenge, etc.: A. Decision-Making Scenarios (e.g., Articulate Storyline)

[http://articulate.demos.s3.amazonaws.com/broken\\_co-worker/story.html](http://articulate.demos.s3.amazonaws.com/broken_co-worker/story.html)

Decision-Making Scenario Interface

Options: "I'll check them out at home in 3 hour time", "I'm sorry, I can't help you right now", "I'll check them out at home in 3 hour time", "I'm sorry, I can't help you right now"

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

Piercarlo Abate: <http://www.youtube.com/watch?v=-TURzH0aU>  
Qi Li, Gangnam: <http://www.youtube.com/watch?v=7Q429lqxZaU&feature=youtu.be>  
Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFW9lW8>

Final Project Video Summary

**FREEDOM**

1. Flexibility
2. Expression
3. Collaboration
4. Digital Content
5. Open Resources
- Motivation

### 10. Yields Products, Goals: B. Final Product Presentations

Kristen Needler, Self-Directed Simulation  
<http://www.youtube.com/watch?v=aT-YZj-b8-g>

Self-Directed Simulation

Nodes: Health, Safety, Performance, Quality, Reliability, Usability, Maintainability, Supportability, Interoperability, Security, Privacy, Confidentiality, Integrity, Availability, Portability, Reusability, Scalability, Flexibility, Adaptability, Resilience, Robustness, Compatibility, Interchangeability, Compatibility, Interoperability, Security, Privacy, Confidentiality, Integrity, Availability, Portability, Reusability, Scalability, Flexibility, Adaptability, Resilience, Robustness, Compatibility, Interchangeability

### 10. Yields Products, Goals: C. I Done This, Milestone Planner, and 43 Things

43Things



Changing your life is hard. Doing it by yourself is harder.

Start listing your goals now...

Sign up

BARNEY STINSON

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

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

**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**



**Poll #3:**  
 Do you feel "MOTIVATED" to try any of this out?

**A. Yes, R2D2**  
**B. Yes, TEC-VARIETY**  
**C. Yes, both**  
**D. Neither**

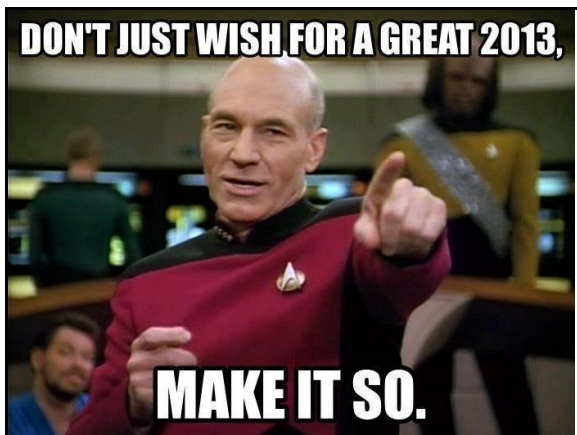



**Poll #4: How many new ideas did you get?**

- 0 if I am lucky.
- Just 1.
- 2, yes, 2...just 2!
- Do I hear 3? 3!!!!
- 4-5.
- 5-10.
- More than 10.







**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/>  
 Dr. Curt Bonk – [CJBonk@Indiana.edu](mailto:CJBonk@Indiana.edu)

