
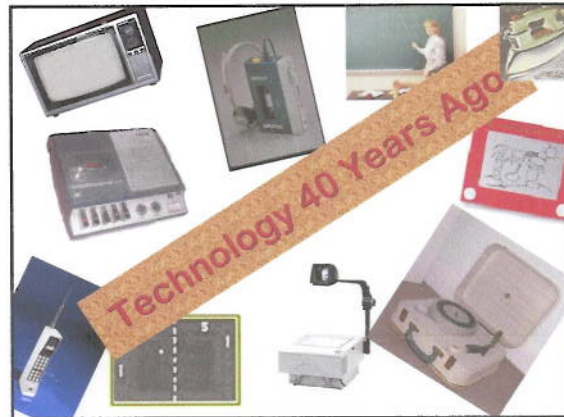


## Jumbo Motivation with the TEC-VARIETY Model: 10 Principles for Motivating Students with Technology

**Curt Bonk, Professor, Indiana University  
President, CourseShare, LLC  
cjbonk@indiana.edu  
<http://mypage.iu.edu/~cjbonk>**

## Technology of the 1980s



Radio Shack TRS-80 Model III	
Introduced:	July 1983
Price:	US \$699 base model US \$2499 w/ 2.5M, dual drives
CPU:	Z80 2.80, 2.03 MHz
RAM:	4K, 48K max.
Ports:	Cassette tape, expansion, serial
Display:	12-inch SPM monitor 64 x 16 text
Storage:	0, 1, or 2 Internal 1.7MB floppy drives External cassette @ 500 / 1500 baud
OS:	BASIC in ROM, TRS-DOS on disk





## Today we have the Web 2.0




## Things That Became Obsolete This Decade

December 11, 2009, Silicon Alley Insider



## Gadgets that Changed Everything This Decade

December 9, 2009, Jay Yarow, Silicon Alley Insider



**Poll #1: Who finds it hard to keep track of all the technology-related changes today???**

**Accelerate Learning**

The image shows the cover of 'TechTrends' magazine with the headline 'Teach the Modern Way!' and a sub-headline 'Examining the historical aspects of technology in education'. Below the magazine is a close-up of a hand holding a red push-button telephone receiver.

**Poll #2: Who is sometimes frustrated???**

The image contains two side-by-side photographs of a man in a suit. In the left photo, he is on a phone call, looking thoughtful. In the right photo, he is covering his ears with his hands, appearing frustrated.

**It's Nature (i.e, technology) and Nurture (i.e., pedagogy)!**

The image shows a monarch butterfly with its wings spread, perched on the back of a frog.

**What if our minds were on fire for learning?**

A Circle of Knowledge Building and Sharing

The diagram illustrates a cycle with four stages: Create, Share, Use, and Re-write. 'Create' involves 'Support for creating representations of disciplinary knowledge'. 'Share' is 'Open Knowledge Exchange Zone' where 'People return for sharing representations to refine practice'. 'Use' is 'Encourage teachers to merge, reflect, and integrate past represented knowledge'. 'Re-write' is 'Enable students to integrate knowledge into their knowledge'. A note says 'Promote these organically & sustainably'.

**MINDS ON FIRE: OPEN EDUCATION, THE LONG TAIL, AND LEARNING 2.0.** JOHN SEELY BROWN AND RICHARD ADLER, EDUCAUSE REVIEW, JANUARY-FEBRUARY, 2008.  
<http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823>

**John Dewey (Author of "How We Think" and "Democracy and Education")**

The collage includes a caricature of Dewey, a 30-cent postage stamp featuring his portrait, and several black and white photographs of him in various settings, including a classroom and a library.

**Ivan Illich (author of "Deschooling Society")**

The collage features a caricature of Illich, a black and white portrait of him smiling, a photograph of him with his hand to his face, and the cover of his book 'Deschooling Society'.



### Seymour Papert, MIT Media Lab



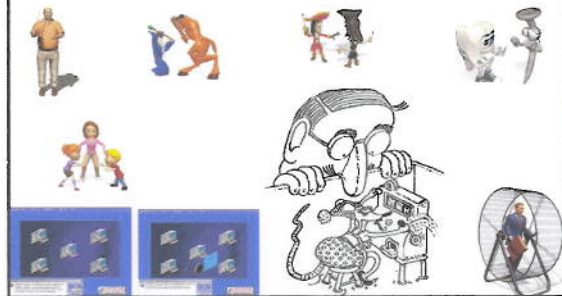
### Stephen Heppell (co-developer of Notschool.net and the ULTRALAB)



### John Seely Brown (author of "Minds on Fire" and The Social Life of Information)



### Old Models of Interactivity



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



### Jumbo Motivation is Needed!



**Ok, Million Dollar Question: How do you motivate online learners? What Words come to mind?**



### 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.



### Active Learning Principles

1. Authentic/Raw Data
2. Student Autonomy/Inquiry
3. Relevant/Meaningful/Interests
4. Link to Prior Knowledge
5. Choice and Challenge
6. Teacher as Facilitator and Co-Learner
7. Social Interaction and Dialogue
8. Problem-Based & Student Gen Learning
9. Multiple Viewpoints/Perspectives
10. Collab, Negotiation, & Reflection



### 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...**

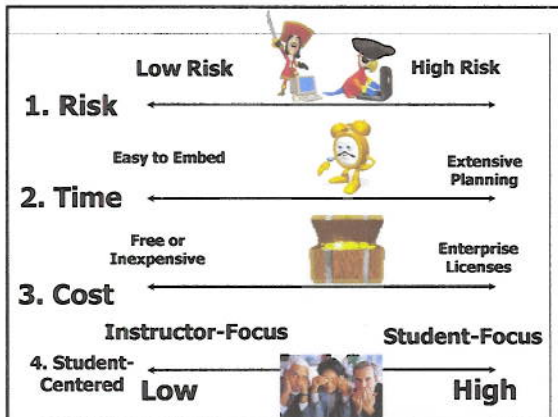


### The TEC-VARIETY Model for Online Motivation and Retention

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







**1. Tone/Climate: (open, inviting)**  
**A. Create a Class Wiki (Wikispaces)**

The screenshot shows a Wikispaces page with a search bar, navigation links, and a main content area with text and images. The text includes a welcome message and a description of the wiki's purpose.

**1. Tone/Climate: B. Video Course Intros from Instructors.**  
 Yun Yun Chow, Open U Malaysia  
 Making Art Lessons Come Alive with Web 2.0  
<http://www.youtube.com/watch?v=BO9rqJD1GXo>

The screenshot shows a YouTube video player with a play button and a video thumbnail. The video title is "Making Art Lessons Come Alive with Web 2.0".

**2. Encouragement, Feedback, etc.:**  
**A. New Self-testing Skills. High School Student Self-Testing (e.g., Calm Chemistry)**

The collage includes a "Virtual Chemistry" website interface, a "Calm Chemistry" logo, and various educational diagrams and images related to chemistry.

**2. Encouragement, Feedback, etc.:**  
**B. Tutorials with Screen Capture (e.g., Jing, Screenr)**

The screenshots show the user interfaces for Jing and Screenr, which are screen capture and sharing tools. Jing is used for quick captures, while Screenr is used for longer, more detailed tutorials.

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

The collage features several news articles from CNN and other sources, including headlines like "Japanese fishermen trace for giant jellyfish", "Local ocean begins Gulf Coast cleanup", and "Human origin takes a new track".

### 3. Curiosity, Fun: B. WolframAlpha (access knowledge)

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

The image shows a screenshot of the WolframAlpha website. At the top, there is a search bar and the WolframAlpha logo. Below the search bar, there are several featured articles and a 'Quick Introduction to Wolfram Alpha' by Stephen Wolfram. The interface is clean and modern, with a white background and blue accents.

### 3. Curiosity, Fun: C. Virtual Tours

This block contains a collage of three virtual tour screenshots. The top left shows a map of a region with various points of interest. The top right shows a scenic landscape view of a river valley. The bottom right shows a 'Vista 1: Squally Point' view of a rocky coastline with a blue sky and sea.

### 3. Curiosity, Fun: D. Virtual Field Trips

This block features a screenshot of a news article from eSchool News titled 'Web brings national parks closer to kids'. The article discusses how virtual field trips can provide educational experiences for students. To the right, there is a screenshot of a virtual field trip interface showing a person in a hat standing in a natural landscape.

### 3. Curiosity, Fun: E. Adventure Learning (e.g., GeoThentic, GoNorth, Polar Husky, Nat'l Geographic; Aaron Doering, U of Minnesota)

This block contains a collage of screenshots related to adventure learning. It includes a 'Trail Reports' section with a grid of images, a 'Explore' section with a green alien-like creature, and various virtual exploration scenes featuring people in outdoor gear and virtual environments.

### 3. Curiosity, Fun: F. Videoconference (e.g., Int'l Studies for Indiana Schools (i.e., ISIS); Mandarin Chinese, Niger, Sudan, Life in Eastern Europe Today (Bulgaria), History and Culture of Mexico (Deb Hutton, Indiana Univ., Mimi Miyoung Lee, Univ of Houston))

This block features a collage of screenshots from a videoconference. It shows several participants in a virtual meeting environment, some with their names and titles displayed. The participants are engaged in a discussion, and the interface includes a 'Welcome to International Studies for Indiana Schools' banner.

### 3. Curiosity, Fun: G. Oceanographer touts deep sea web surfing (e.g., Nautilus Live allows people to not only learn about the expeditions but watch them live and listen to the scientists in the control rooms as discoveries are made)

From staff and wire reports, eSchool News, June 2010  
<http://www.eschoolnews.com/technologies/oceanographer-touts-deep-sea-web-surfing/>

This block contains a screenshot of the Nautilus Live interface, which displays multiple video feeds of the Nautilus submersible and its crew. To the right, there is a photo of an oceanographer wearing a cap and a jacket, likely involved in the expedition.



**3. Curiosity, Fun: H. Tour a Museum (e.g., British Museum, Smithsonian, Louvre)**

**3. Curiosity, Fun: I. United Nations Opens World Digital Library**

**3. Curiosity, Fun: J. Online Historical Document (e.g., Turning The Pages, British Library)**

**3. Curiosity, Fun: K. Solo Sailing (e.g., Michael Perham & Zac Sunderland, Summer 2009 (each age 17, youngest person to sail solo around the world...meet Minoru Saito, age 75, oldest solo sailor))**

**May 2010, Jessica Watson became the youngest person ever to sail solo, non-stop and unassisted around the world.**

**Abby Sunderland's blog**

**3. Curiosity, Fun: L. Virtual Archaeology (e.g., ARCHAVE from Brown University)**

**3. Curiosity, Fun: M. Tracking Live Internet Thawing: A Colossal of an Idea**

**3. Curiosity, Fun: N. Ice Stories Project from Antarctica**

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

**PS40 Cool Resource Provider and Moderator Sign Up Sheet**

If multiple people are working with the same technology it is an efficient way to get started. Please email your name to the host for the day. Hosts will be responsible for the sign-up sheet for refreshing your browser and other site updates.

**Instructions:**  
 Please put your name in the box for the day. **WEEK** day of the week you will be working on. If you are unable to attend, please email the host for the day.  
 Please complete your sign-up sheet for the day. **WEEK** day of the week you will be working on. If you are unable to attend, please email the host for the day.

**Work:**  
 1. Introduction to the Study of Learning  
 2. Introduction to the Study of Learning  
 3. Social Learning Theory

**4. Variety, Novelty: B. Expert Chats/Real Explorer or Teacher Interaction (Jean Pennycook, blogger)**

**A CHAT EXPERIENCE**

Jean Pennycook is an Antarctic explorer, and she has been working with the PS40 team for the summer to create real-time chat experiences with the PS40 team. She will be part of a panel discussion with other experts in the field of learning and technology. Through the use of social media, she will be sharing her experiences with the PS40 team.

**Arlington Racetrack**

**Jockey's are Important**



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

**5. Autonomy, Choice: D. Clickers/Student Response Systems**

**5. Autonomy, Choice: E. Famous Person Web Explorations, Searches, Twitter Tracking, and Interviews**  
 (e.g., famous Australian actors)

**5. Autonomy, Choice: F. Explore Online Museums, Zoos, Library Exhibits (Museum of Online Museums or MoOM)**

**5. Autonomy, Choice: G. Free Lesson Plans (Smithsonian Education, Department of Education)**  
<http://www.free.ed.gov/>

**5. Autonomy, Choice: H. Online Portal Explorations**

**5. Autonomy, Choice: I. Samuel Pepys and Phil Gyford, UK**

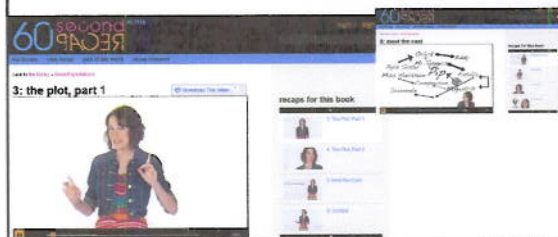


**6. Relevance, Meaningfulness: A. Tour an Oil Drilling Site (i.e., BP)**



**6. Relevance, Meaningfulness: B. 60 Second Recap, Jenny Sawyer**

<http://www.60secondrecap.com/>  
 Actress to students: Lend me your earbuds!  
 English major, 24, rambunctiously recaps the classics in 60-second Web videos; By Greg Toppo; USA TODAY, September 2009



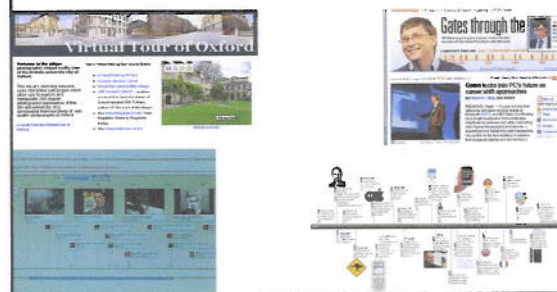
**6. Relevance, Meaningfulness: C. New Real World and Authentic Learning Skills (PBL, evaluation, interaction, communication, etc.)**



**6. Relevance, Meaningfulness: D. Concept Mapping Tools (vUE, Bubbl.us, Cmap, Freemind, Giffy, Mindmeister, or Mindomo)**



**6. Relevance, Meaningfulness: E. Virtual Tours and Timelines (i.e., HyperHistory; <http://simile.mit.edu/timeline/>)**





**6. Relevance, Meaningfulness:  
F. Videos of the Periodic Table**



**7. Interactive, Collaborative:  
A. Collaborative Documents (Google Docs)**



**7. Interactive, Collaborative:  
B. Online Language Learning  
(Skype with Mixxer, Livemocha, Friends Abroad)**



**7. Interactive, Collaborative: C. Int'l  
Children's Digital Library (ICDL)  
project (Univ. of Maryland, *Black Beauty*, *Aesop's Fables*, *Little Red Riding Hood*, *Grimm's Fairy Tales*, *Robinson Crusoe*, and *Mother Goose*.)**



**7. Interactive, Collaborative:  
D. Global Collaboration (e.g.,  
EPals and iEARN (Int'l Education and  
Resource Network))**



**7. Interactive, Collaborative:  
E. Global Nomads Group**



**7. Interactive, Collaborative:**  
**F. Create an Online Community in Ning, Google Groups, or Yahoo Groups.**

This slide shows three examples of online community platforms. On the left is a Ning site for 'Ning in Education'. In the top right is a Yahoo! Groups page. On the right side is a Google Groups page for 'Arizona High School'.

**7. Interactive, Collaborative:**  
**G. Horizon and Flat Classroom Projects** (combine blogs, videoconferencing, chat, async discussion, etc.)

This slide features a magnifying glass icon over the text 'FLAT CLASSROOM'. Below it are screenshots of the 'Flat Classroom' website and the 'Horizon Project' website. To the right are two photographs of women, likely participants or organizers of these projects.

**8. Engagement, Effort:**  
**A. Follow Online Adventure**  
 Australian adventurer Don McIntyre and teenage circumnavigator Mike Perham to re-enact Capt William Bligh's epic mutiny on the Bounty open boat voyage

This slide illustrates an online adventure project. It includes a photograph of a sailboat with red sails, a screenshot of a blog titled 'ZAC'S BLOG', and two photographs of the participants, Don McIntyre and Mike Perham, on a boat.

**8. Engagement, Effort:** **B. Anchored Instruction** (find anchoring event in YouTube, CNN, BBC, TeacherTube, CurrentTV)

This slide shows examples of anchored instruction. It features a YouTube video player, a CNN news broadcast, and a screenshot of a video player from TeacherTube. A small anchor icon is also present.

**8. Engagement, Effort:**  
**C. Shared Online Video** (e.g., the Khan Academy; videos on math, bio, trig, chemistry, money and banking, economics, statistics, etc.)

This slide focuses on shared online video. It shows several Khan Academy video thumbnails, including one titled 'Salman Khan: Math master of Internet'. A diagram with red arrows illustrates the flow of video sharing between YouTube and Khan Academy.

**8. Engagement, Effort:**  
**D. Synchronous and Asynchronous Events** (Webinars in Elluminate, Dimdim, WebEx, Adobe Connect Pro)

This slide displays various synchronous and asynchronous event platforms. It includes screenshots of a webinar interface, a Dimdim meeting, and a WebEx session.



**8. Engagement, Effort:  
E. Basic Acoustics of Musical Instruments (Univ. of New South Wales)**

**9. Tension, Challenge, etc.:  
A. Ethical Medical Debates**

Students to protest human body exhibit

Maggie Thoma  
Issue date: 24-02 Section: News

**9. Tension, Challenge, etc.:  
B. Controversial Science (e.g., *Ida* (a transitional species) 47-Million-Year-Old *Darwinius Masillae* Fossil the Missing Link? (wowOwow, May 20, 2009)**

Ida's World

**10. Yields Products, Goals:  
A. Movie Festivals, Virtual Timelines, Digital Movies**

Educational Uses of Digital Storytelling

**10. Yields Products, Goals:  
B. Video Blogs**

**10. Yields Products, Goals:  
C. Photo Festivals and Competitions (e.g., COFA at UNSW, Scrapblog, flickr, etc.)**

**10. Yields Products, Goals:  
D. Using Online Video (e.g., YouTube) to Memorize Sonnets and Poems**

The image shows two side-by-side screenshots of YouTube video players. Both videos are titled 'How to Memorize Sonnets'. The left video features a close-up of hands holding a red rose, while the right video features a man in a suit speaking. Both videos have a view count of 25.

**10. Yields Products, Goals:  
E. Wikis (e.g., for Monster Writing)**

A collage of four different wiki pages. The top-left page is 'Wikis for Everyone' with a 'Get Started' button. The top-right page is 'Cougars Pictures in Pre-K' with various images. The bottom-left page shows a group of people. The bottom-right page shows a person's face.

**10. Yields Products, Goals:  
F. Student Developed Wikibooks (Wikibooks Junior)**

A collage of Wikibooks Junior content. It includes a 'WIKI 2.0' logo, a 'Current Titles' section with book covers, and a 'Discovery and Innovation' section with a dinosaur image and a globe.

**TEC-VARIETY Model for Online Motivation and Retention**

**Tone/Climate**  
Encouragement, Feedback  
Curiosity

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

A cartoon character with a yellow body and a blue hat, standing next to a blue and white can labeled 'WAX'. The character is wearing shoes and has its arms raised.

**Poll: How many ideas did you get...so far?**

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

Decorative graphics for the poll include a gold medal with the number '0', a 'TOP 10' sign, and two cartoon figures of people running.

**Do you feel JUMBO MOTIVATION?**

Note: Bonk papers and talks at:  
<http://www.publicationshare.com/>  
<http://www.trainingshare.com/>

The image features a large elephant in a savanna setting, a person wearing a headset, and a small blue motorcycle.