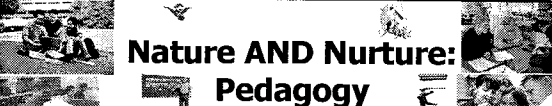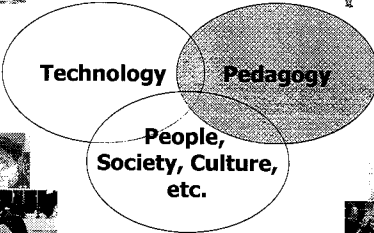**R2D2 to the Matrix: A Galaxy of Online Learning Style, Motivational, and Blended Learning Examples**

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

---

**Nature AND Nurture: Pedagogy**

Technology | Pedagogy

People, Society, Culture, etc.

---

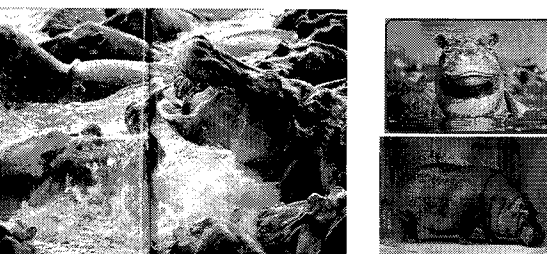| | Low Risk | High Risk |
|---|---|---|
| 1. Risk | ← | → |
| 2. Time | Easy to Embed ← | Extensive Planning → |
| 3. Cost | Free or Inexpensive ← | Enterprise Licenses → |
| 4. Student-Centered | Instructor-Focus ← Low | Student-Focus → High |

---

**Task**

- Ideas definitely Can Use (Circle or write down)
- Ideas you might use (check off or write down in a separate column)
- Ideas you cannot use (cross off or put at the bottom)

---

**Connecting the Digital Dots: Literacy of the 21st Century**
Barbara R. Jones-Kavalier and Suzanne L. Flannigan
Educause Quarterly (2006), 29(2)

"The greatest challenge is moving beyond the glitz and pizzazz of the flashy technology to teach true literacy in this new milieu. Using the same skills used for centuries—analysis, synthesis, and evaluation—we must look at digital literacy as another realm within which to apply elements of critical thinking."

---

**Part I: 25 Learner-Centered Technology Ideas**

## 1. Learner-Centered Learning Principles
### (American Psychological Association, 1993)

**Cognitive and Metacognitive Factors**
1. Nature of the learning process
2. Goals of the learning process
3. Construction of knowledge
4. Strategic thinking
5. Thinking about thinking
6. Context of learning

**Motivational and Affective Factors**
7. Motivational and emotional influences
8. Intrinsic motivation to learn
9. Effects of motivation on effort

**Developmental and Social Factors**
10. Developmental influences on learning
11. Social influences on learning

**Individual Differences**
12. Individual differences in learning
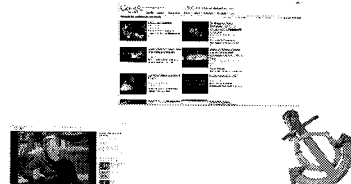13. Learning and diversity
14. Standards and assessment

---

## 1. Anchored Instruction (find anchoring event (CTGV, 1990?)
### (L/M = Cost, M = Risk, M = Time)

- In a synchronous lecture interrupt it with a summary video (could be a movie clip) explaining a key principle or concept.
- Refer back to that video during lecture.
- Debrief on effectiveness of it.

---

## 2. Cool Resource Provider
### (Bonk, 2004) Capture and Videostream Lectures (e.g., Apreso CourseCaster)

- Have students sign up to be a cool resource provider once during the semester.
- Have them find additional paper, people, electronic resources, etc.
- Share and explain what found with class via synchronous meeting or asynchronous discussion post.

---

## 3. ORL or Library Day
### (L = Cost, M = Risk, M/H = Time)
### (Bonk, 1999)

- Have students spend a day in the library or online finding and summarizing a set number of articles.
- Have them bring to class or post abstracts to an online forum.
- Share in small groups interested in similar topics.
- Perhaps give each student 1-2 minutes to describe what found in a chat.

---

## 4. 99 Second Quotes
### (L = Cost, M = Risk, M = Time)

- Everyone brings in a quote that they like from the readings
- You get 99 seconds to share it and explain why you choose it in a sync chat or videoconference
- Options
  - Discussion wrapped around each quote
  - Small group linkages—force small groups to link quotes and present them
  - Debate value of each quote in an online forum

---

## 5. Learner-Self Interactions and Reflections
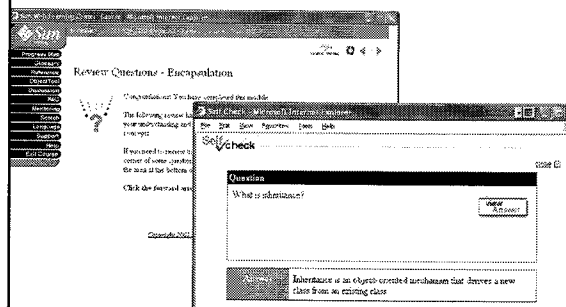
## 6. Use Google Maps Mashups
**By Jeffrey Branzburg, May 15, 2006**
http://www.techlearning.com/story/showArticle.jhtml?articleID=187002846

## 7. Problem-Based Learning (PBL)
((Going EAST to Edutopia?; George Lucas Educational Foundation, 2003)

t the proble

**ENVIRONMENTAL**
**AND**
**SPATIAL**
**TECHNOLOGY**

a major pro
for a unit, s

d communicate

---

## 8. Best 3 (Thiagi, personal conversation, 2003)

- After a lecture, have students decide on the best 3 ideas that they heard (perhaps comparing to a handout or dense sheet of paper).
- Work with another who has 3 as well and decide on best 3 (or 4).
- Those pairs work with another dyad and decide on best 3 (or 4).
- Report back to class.

---

## 9. Creative Writing or Story Telling and Roundrobins (using email)

a. Tell a Tall Tale:
- One person starts a story and everyone adds something to it. You might throw a ball to the person who is to add to it or the instructor might decide or the next person could just jump in. Could be done via e-mail.

---

## 10. Reverse Brainstorming
(using chat) (L = Cost, L = Risk, M = Time)

- Generating ideas to solve the reverse of a particular problem, issue, situation, or concern. Once again, more is better and the wilder the better. The hitchhiking or piggybacking as well as combination of ideas is encouraged. However, there is no evaluation of ideas allowed.
- For example, How can we decrease the use of active learning ideas in college settings?

---

## 11. PMI (Plus, Minus, Interesting)
(L = Cost, L = Risk, M = Time)

- After completing a lecture, unit, video, expert presentation, etc. ask students what were the pluses, minuses, and interesting aspects of that activity.
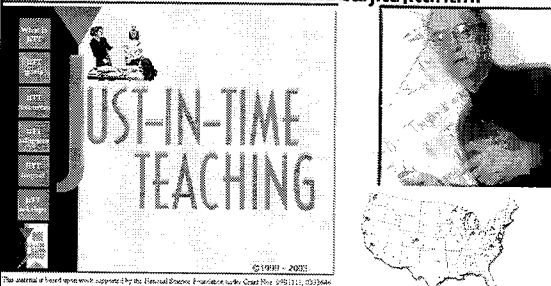
## 12. Workplace and Field Reflections

1. Instructor provides reflection or prompt for job related or field observations
2. Reflect on job setting or observe in field
3. Record notes on Web and reflect on concepts from chapter
4. Respond to peers
5. Instructor summarizes posts



---

## 13: Online Warm-ups Activities Just-In-Time-Teaching (JiTT)

### (M = Cost, M = Risk, M = Time)

http://webphysics.iupui.edu/jitt/jitt.html



---

# 14. Jigsaw

### (L = Cost, M = Risk, H = Time)

- Form home or base groups of 4-6 students.
- Student move to expert groups— discussion ideas in a chat.
- Share knowledge in expert groups and help each other master the material in an online forum.
- Come back to base group to share or teach teammates.
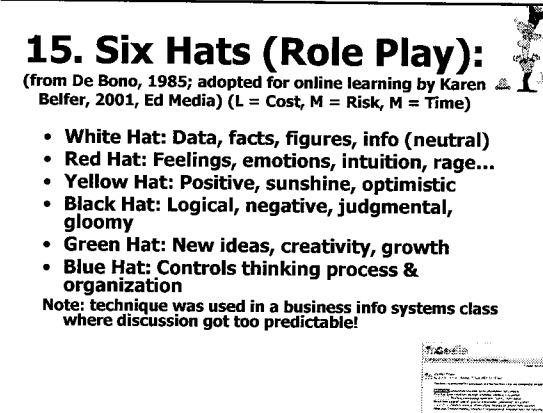- Students present in group what learned.

---

# 15. Six Hats (Role Play):

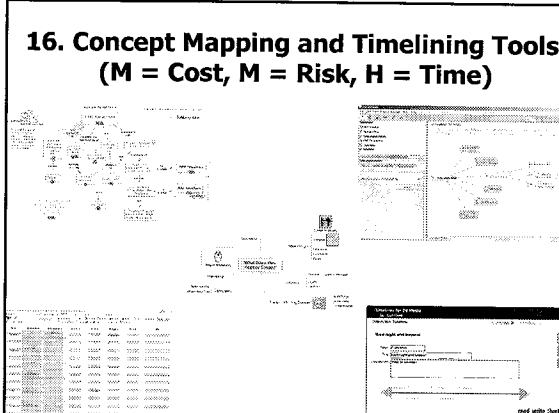(from De Bono, 1985; adopted for online learning by Karen Belfer, 2001, Ed Media) (L = Cost, M = Risk, M = Time)

- White Hat: Data, facts, figures, info (neutral)
- Red Hat: Feelings, emotions, intuition, rage...
- Yellow Hat: Positive, sunshine, optimistic
- Black Hat: Logical, negative, judgmental, gloomy
- Green Hat: New ideas, creativity, growth
- Blue Hat: Controls thinking process & organization

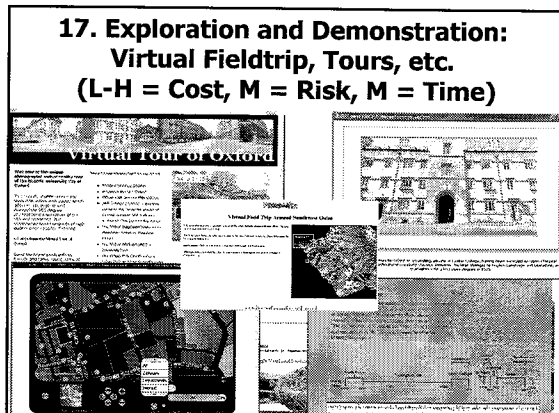Note: technique was used in a business info systems class where discussion got too predictable!

---

## 16. Concept Mapping and Timelining Tools
### (M = Cost, M = Risk, H = Time)



---

## 17. Exploration and Demonstration: Virtual Fieldtrip, Tours, etc.
### (L-H = Cost, M = Risk, M = Time)



4

## 18. Numbered Heads Together

a. Assign a task and divide into groups (perhaps 4-6/group).
b. Perhaps assign group names across class or perhaps some competition between them.
c. Count off from 1 to 4.
d. Discuss problem or issue assigned.
e. Instructor calls on groups & numbers.
   a. e.g., in a research methods class, one person reads intro, another the method, another the findings, discussion, implications, etc.

---

## 19. Apprenticeship: Electronic Guests & Mentoring
(Simon Fraser University News:
http://www.sfu.ca/mediapr/sfnews/2001/Sept6/hightech.html)



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## 20. Value Lines

• Pose question or issue
• Students mark down their feelings or votes
• Share votes and rationale with class
• Recast votes

---

## 21. Think-Pair-Share or Turn To Your Partner and Share

• Assign a topic for reflection or writing.
• Have share their responses with someone next to them.
• Share with another team.
• Ask to share 1-2 ideas with class.
• Alternatively, ask students to volunteer something they heard from a peer.

---

## 22. One Stray-Three Stay

• Give a task to small groups of students.
• Assign one person as spy or pirate to see the answers of other students (one stray-three stay method) and share wit group.

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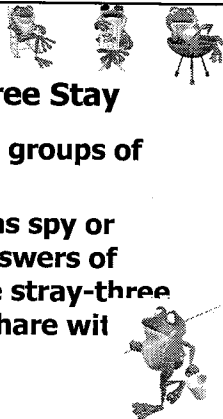
## 23. One Stay-Three Stray

• Group assigns one person from their group to stay behind and share product or ideas with others who visit their poster or station (one stay-three stray method).

5
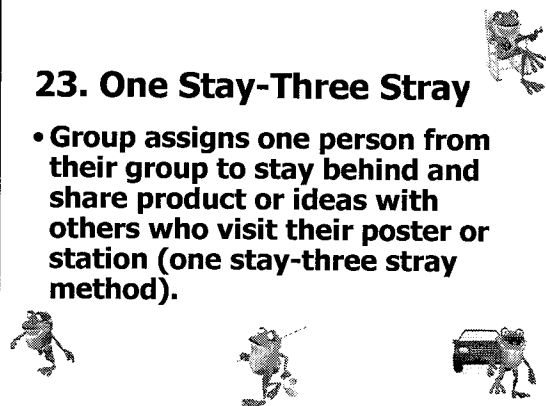
## 24. Product and Project-Based Learning (and Gallery Tours)

- Students decide on a project to pursue from a list.
- Must design something—a poster, poem, song, presentation, radio or TV show, report, advertisement, research report, glossary, website, Wikibook.
- Presentation is made at the end of the unit or semester (perhaps post products on walls in room).
- Evaluation is made by experts and/or the instructor.

## 25. Collaborative Writing
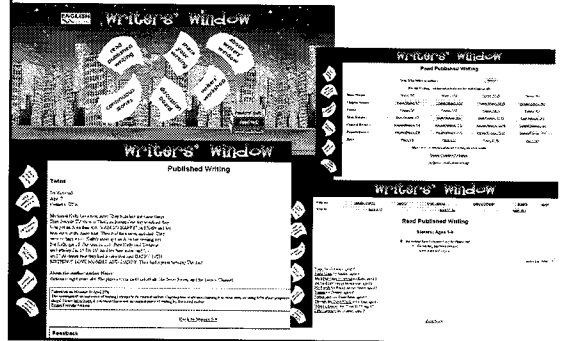


## 99 Seconds: Think-Pair-Share... What have you learned so far? What is Solid and What is Fuzz?

- If no partner, stray to another group.
- Share with group
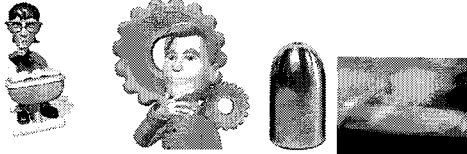


## What can we say about educational technology in education then???
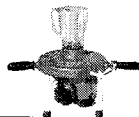
- It is everywhere!!!!!!!!

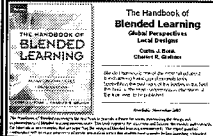- Resistance is futile!!!!!!!
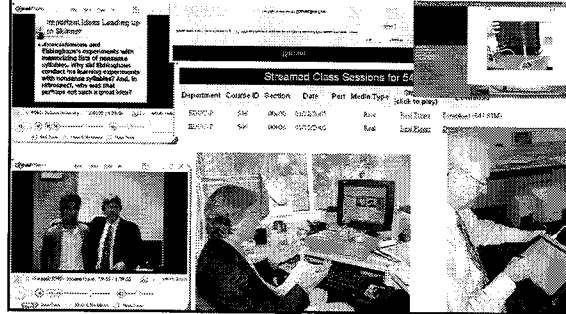


### Part II: 25 Blended Learning Solutions
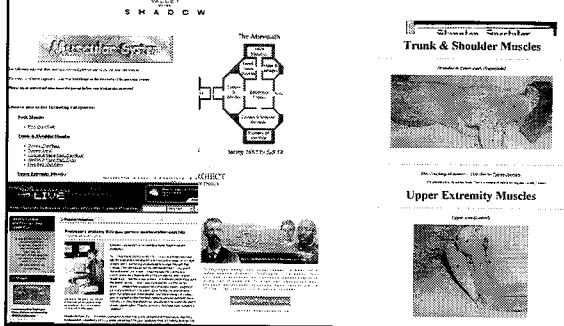
## Blending Online and F2F Instruction

- "Blended learning refers to events that combine aspects of online and face-to-face instruction" (Rooney, 2003, p. 26; Ward & LaBranche, 2003, p. 22)
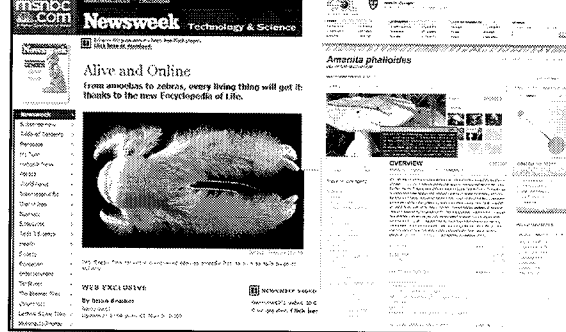


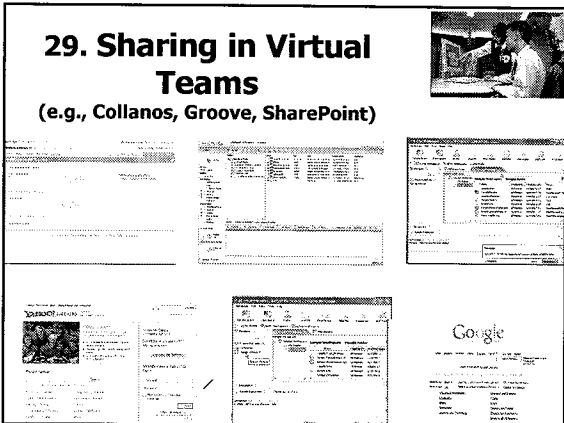## 26. Video Streamed Lectures and Expert Commenting



## 27. Instructor Portal: e.g., Valley of the Shadows



Trunk & Shoulder Muscles

Upper Extremity Muscles

## 28. Referenceware and Terminology Exercises Online (puzzles, games, etc.)
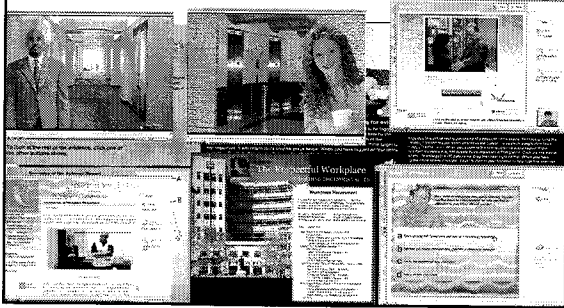


## 29. Sharing in Virtual Teams
(e.g., Collanos, Groove, SharePoint)



## 30. Podcasts of Art and History Exhibits

## 31. Video Scenario Learning
### (Option 6, Arjuna Multimedia, Bloomington, IN)



## 32. Educational Simulations
(HEALING GAMES: Computer simulations don't have to be violent -- they can give peace a chance, Scott Duke Harris May 21, 2006, San Fran Chronicle; and Medical Traumas from TD Magazine, August 2006)
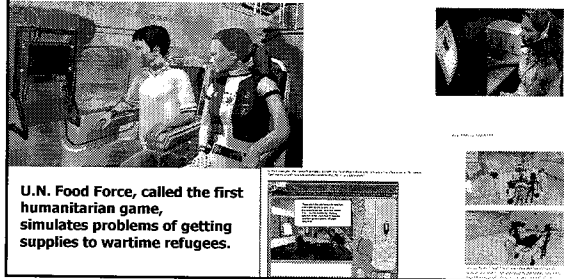


U.N. Food Force, called the first humanitarian game, simulates problems of getting supplies to wartime refugees.
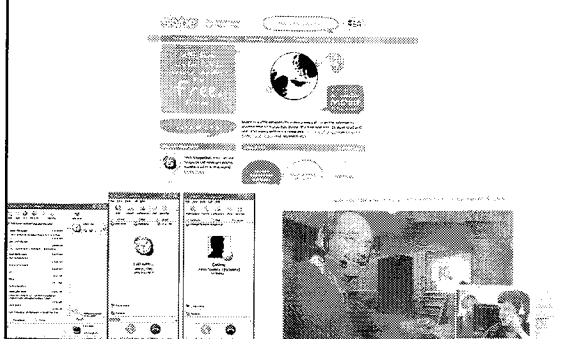
## 33. Electronic Cameras and Maps
### (e.g., Google Earth, Google Mars)

Virtual Tour - South Pole
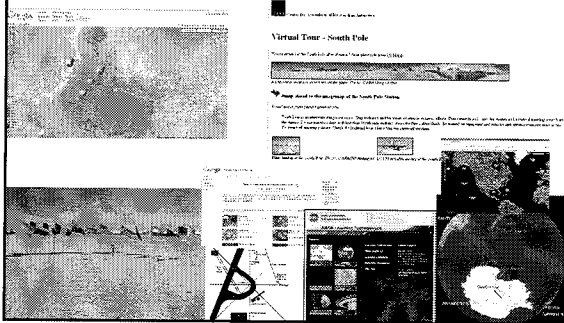


## 34. Student Vlogging (Video Blogs)
Chronicle of Higher Ed, May 11, 2007
An Anthropologist Explores the Culture of Video Blogging
By JEFFREY R. YOUNG; Michael Wesch, KSU, asst prof of cultural anthro
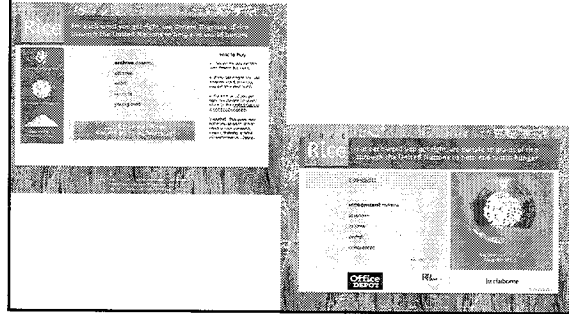


## 35. Team Meetings in Skype



## 36. Online Simulation: Financial Accounting; (University of Calgary)

Lyryx
Interactive
Financial
Accounting

Lyryx Interactive
Financial Accounting



INCORRECT
X
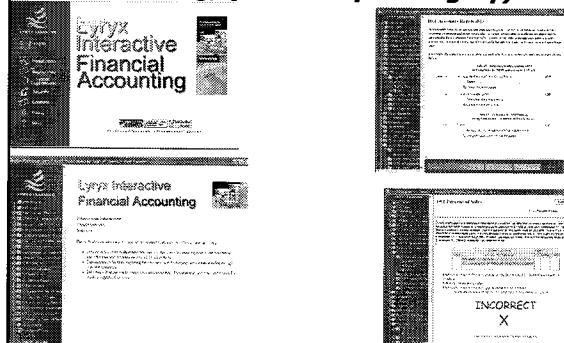
## 37. History Online
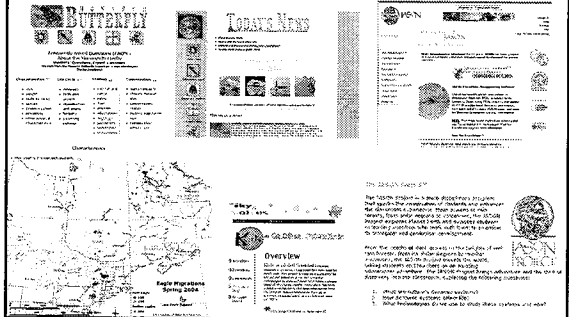### (the Jamestown Adventure)
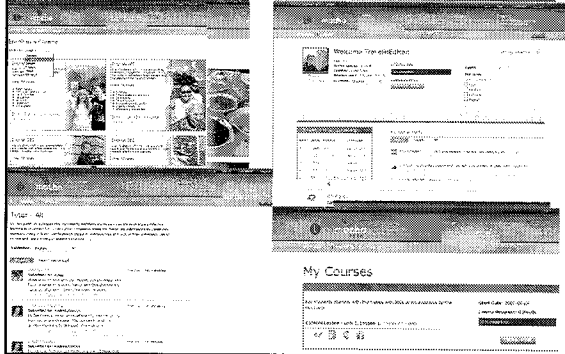


## 38. Learn Vocabulary Online



## 39. Online Science Interactives



## 40. Online Science (collecting global data and sharing it)



## 41. Presentations with Expert Reviews



## 42. Social Networking for Kids
### (e.g., Club Penguin)

## 43. E-books with Embedded Animations

Earthquake Location          Imbedded animation

Earthquakes represent the failure of the rock along a fault, or the fracture of unfaulted rock. Stress builds up until the strength of the fault is exceeded, and then the two sides of the fault move rapidly and enormous energy is released. The energy is released in the form of elastic or shock waves that travel through the earth and can be recorded around the world, as seen in the image to the right.

Primary wave

Secondary wave
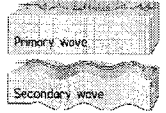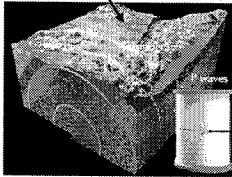
There are two major types of waves that we use to locate the source, or epicenter, of the earthquake. They are P and S waves, shown to the left. In this exercise you will learn about the location of earthquakes using P and S waves. To see an animation about earthquakes and waves, click Next.

**Next**

## 44. Flowcharts, Diagrams, Maps, etc.
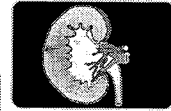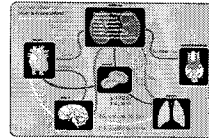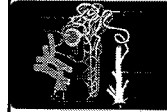
Elements in the system for control of oxygenation in the human body (e.g., the Kidney): From: Next-Generation Educational Software Why We Need It and a Research Agenda for Getting It. Van Dam, Becker, & Simpson, *Educause Review,* March/April 2005

## 45. Simulations (SimTeacher)

Ariella Roden

Birthdate
Mar 12, 1996

Grade Level
First Grade

Demographics
Suburban, Midwest, USA

Physical Characteri...
Very pretty.

Family Life
Lives with both paren...

Test Scores
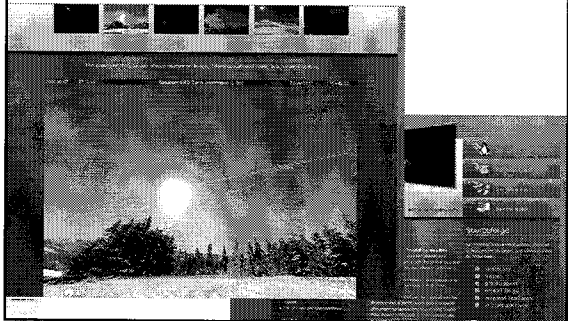No information on file

Ethnicity and/or rel...
Jewish

Likes or Dislikes
Likes anything to do...
cultures. Likes dance...
activities. Dislikes soc...

## 46. Free Online Planetarium (Stellarium)

## 47. REAL-TIME PALEONTOLOGY
(videoconferencing) Ozarks Technical Community College (MO) and MOREnet, the Missouri Research and Educ Network

- They've installed 1,600 feet of armored, direct-burial fiber-optic cable in the Riverbluff Cave in southwest Missouri, and have networked a field house where work is being done on discovered artifacts. Those finds include some of the oldest Ice Age fossils in North America.
- RESEARCHERS broadcast live classroom content from Riverbluff Cave.

## 48. Assign Audio to Listen to such as Basic Acoustics of Musical Instruments 2005 MERLOT Classics Award

## 49. Exploration: Virtual Museums and Archeology
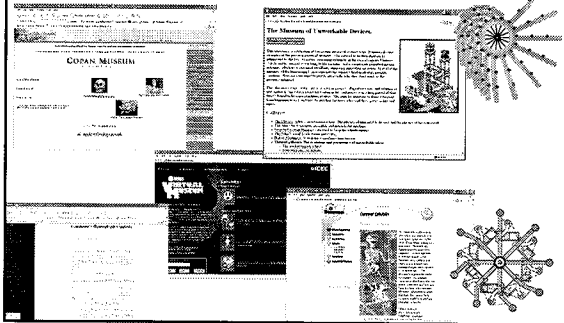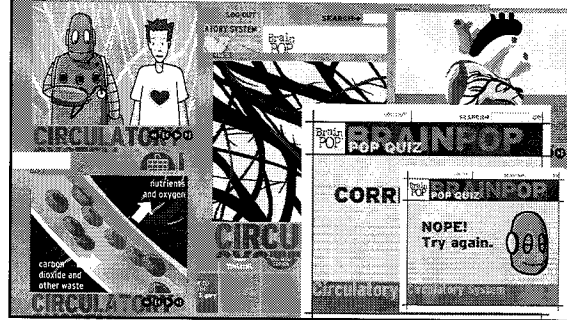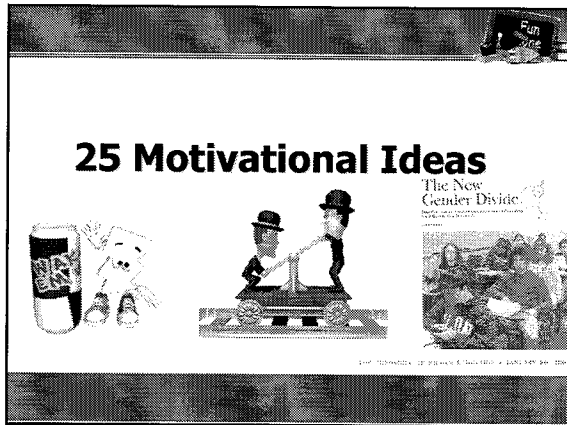


## 50. Review Games like BrainPop
(movies, experiments, timelines, activity pages)



## Stop and Share for 3 minutes:
Share at your table!



## 25 Motivational Ideas



## Ok, Million Dollar Question: How can you motivate learners online?
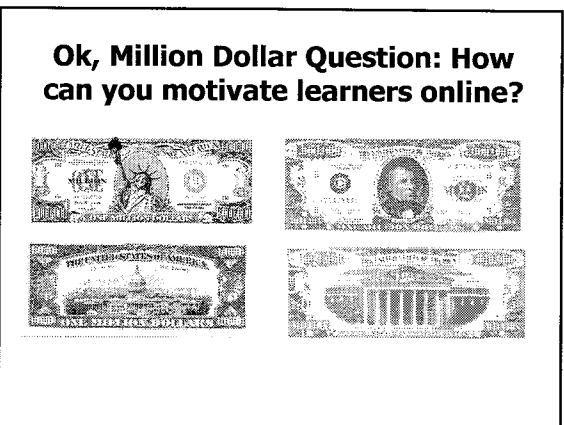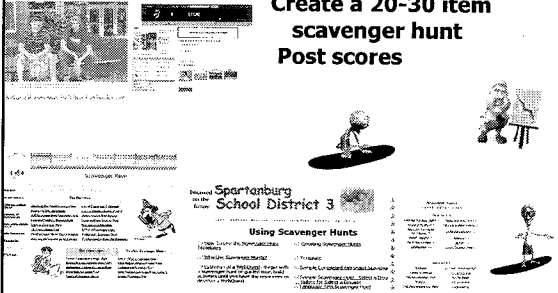


## TEC-VARIETY Model
## Online Motivational

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: Scavenger Hunt, a. Expectations, b. Post commitments, c. Find friends in Facebook

Create a 20-30 item scavenger hunt
Post scores



Spartanburg School District 3

Using Scavenger Hunts

---

### 2. Encouragement, Feedback, etc.:
...ls...



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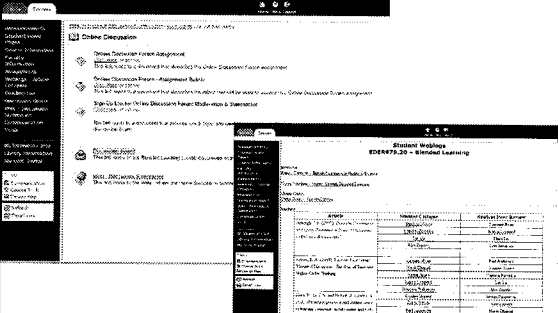### 2. Encouragement/Feedback: Paired Weblog Critiques
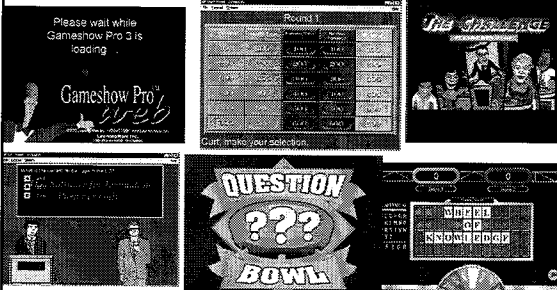


Student Weblogs
EDER#79.20 – Blended Learning

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### 3. Curiosity, Fun: A. Games
### e.g., Online Jeopardy Game
### www.km-solutions.biz/caa/quiz.zip;
### Games2Train: The Challenge; Thiagi.com



Please wait while Gameshow Pro 3 is loading .

Gameshow Pro web

---

### 3. Curiosity: Fun,
### A. Online Seance

- Students read books from famous dead people
- Convene when dark (sync or asynchronous).
- Present present day problem for them to solve
- Participate from within those characters (e.g., read direct quotes from books or articles)
- Invite expert guests from other campuses
- Keep chat open for set time period
- Debrief



---

### 4. Variety, Novelty:
### A. Video Streamed Lectures & B. Expert Commenting

## 5. Autonomy, Choice: Historical Documents discoverbabylon.org



## 5. Autonomy, Choice: B. Clickers; Innovation is but one click away...



## 6. Relevance: Meaningfulness: A. Authentic Data Analysis

Jeanne Sept, IU, Archaeology of Human Origins; Components: From CD to Web

- A set of research q's and problems that archaeologists have posed about the site
- A complete set of data from site & background info
- Students work collaboratively to integrate multidisciplinary data & interpret age of site
- Interpret of ancient environments
- Analyze artifacts/fossils from site

## 7. Interactive: A. Text Messaging

Students at the Mennonite Centre for Newcomers are testing mobile learning - downloading an English grammar lesson, then answering a series of multiple choice, or true or false questions.
Friday, February 9, 2007, CBC News



## 7. Interactive, Collaborative:

**B. Panels of Experts: Be an Expert/Ask an Expert:** Have each learner choose an area in which to become expert and moderate a forum for the class. Require participation in a certain number of forums (choice)

**C. Press Conference:** Have a series of press conferences at the end of small group projects; one for each group)

**D. Symposia of Experts**

## 7. Interactive: E. Online Labs
(e.g., Foreign Language Practice Exercises Online)



13

**8. Engagement:**
**A. Student Self-Testing**
**(e.g., Calm Chemistry)**



**9. Tension, Challenge, etc.:**
**A. Online Role Play of Famous People, B. Role**
**Play Personalities, C. Mock Trial, D. Debates, etc.**

– Enroll famous people in your course
– Students assume voice of that person for
  one or more sessions

24.3.  I am so wise..so listen.    Aristotle  11/25/03 05:49 PM

– Training Magazine might have a a little bit of a bias too. Also, I h

74.5  He ain't heavy - he's my brother...  Mother Theresa  04/22/04 11:41 AM

For me, my children, it's all about helping each other.
Our friends Bruner and Vygotsky suggested that learn
partes, either! They wanted us to work together and
enables all of us to benefit from each other's knowled

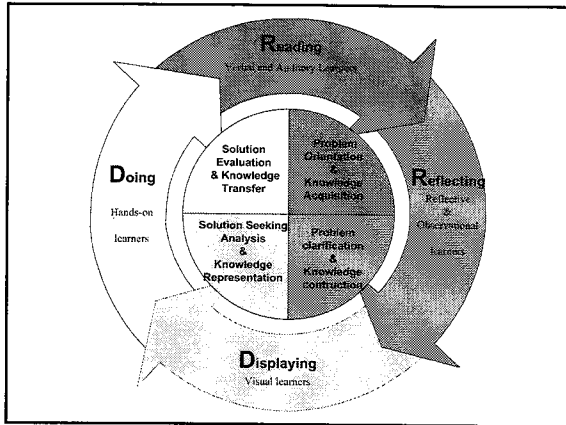74.6  HAPPY ARBOR DAY    Jane Goodhall  04/23/04

I hope that everyone has been feeling wonderful toda



**10. Yields Products:** A. Digital
Movies and B. Digital Storytelling



**99 Second Stretch Break and**
**Chat!!!**





**15 Ideas for Addressing**
**Learning Styles With Technology**

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## 1. Auditory or Verbal Learners

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



## The R2D2 Method

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



## 1. Online Audio Cases
### Audio Dramas
### eCollege Wales, Univ. of Glamorgan



## 2. Online Tutorials and Help



## 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**

## 3. Reuse Web Activities and Transcripts



## 4. Online Professional Development (E-Reading First Ohio) (reflect, share, and compare)



## 5. Post Model Answers

**Employment Law and Ethics Project**

*Question 1*

Would it be illegal for Laura to recommend Billings instead of Lewis? Explain, being specific about the legal doctrines that would apply?

*Answer 1*

Under both Title VII of the 1964 Civil Rights Act and Section 1981 it is illegal to discriminate on the basis of race or color, and Lewis would likely win a lawsuit using the claim of disparate treatment if he were not recommended for the promotion. If Laura does not recommend Lewis, she is guilty of violating the law. None of the three primary defenses—seniority, merit, or bona fide occupational qualification—apply to this situation since Lewis has higher seniority, equal skills, and more direct experience with power tools, than does the other candidate Frank Billings.

Title VII "prohibits discrimination based on race, color, religion, sex, and national origin in hiring, firing, job assignments, pay, access to training and apprenticeship programs, and most other employment decisions." ARPCO is a covered entity under Title VII because they are "employing 15 or more employees and engaging in an industry affecting interstate commerce" and as the case footnotes point out "as of November 21, 1991, the Civil Rights Act of 1991 extended protection from discrimination in employment to U.S. citizens working in foreign countries while employed by U.S. firms."

In this case, Title VII's disparate impact is not applicable since ARPCO's policy clearly states to "promote the most

## 6. Reflecting on Adventure Blogging (Ben Saunders, Mark Fennell)



## 3. Visual Learners

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



## 7. Expert Mentoring Online in Art and Design (COFA Online, Omnium Project, Creative Waves—onine graphics and photomedia project)



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## 8. Animations, Video Clips, Audio, Pictures, Web Resources, etc.



## 9. Online Anatomy and Physiology



## 10. Flash Animations: Interactive Online New Stories & Cases



## 11. Online Modeling: Watch Expert Performances (Music, Cyber Fashion Shows, etc.)



## 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.



## 12. and Romantic Poetry
### http://en.wikibooks.org/wiki/Main_Page

## 13. Wikibooks and Junior Wikibooks (Dinosaurs)



## 14. Videoconferencing with Hearing Impaired Students Online

- **College students tutoring high schools on their homework**
- **Instructors observing how teacher education students are doing in field placements (practice presentation and communication skills)**
- **Interpret speaker via Web cam**



## 15. Survey Research and Market Analysis
(e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)

Add a new question at the end of this survey

1) What is the name of the e-learning course in which you participated?

2) Did you access the course from your home computer, work or school computer or both?
— Select Here —

3) Overall, how satisfied or dissatisfied were you with the course?
- Very Dissatisfied
- Dissatisfied
- Neither Satisfied or Dissatisfied
- Satisfied
- Very Satisfied
- Don't Know

4) How satisfied or dissatisfied were you with the content of the course?

## Next up: The MATRIX!!!!!!!!!!!!

- **Mobile**
- **Auditory**
- **Thought-stimulating**
- **Reflective/Real-World**
- **vIsually Interactive**
- **eXtremely Hands-on**



## It is both Nature AND Nurture as well as PEOPLE!!! Technology is just part of the Equation

Technology    Pedagogy

People, Society, Culture, etc.

## The End...Remember

**Remember that WE-ALL-LEARN**
**Try the R2D2 Method!!!**
**Try TEC-VARIETY!!!**

Sample papers at: http://www.publicationshare.com/
Archived talks at: http://www.trainingshare.com/

# Stand and Share

- **Will Work:** _____
- **Might Work:** _____
- **No Way:** _____