
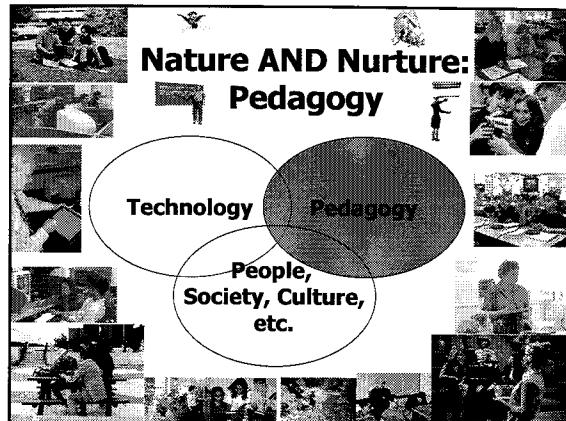


R2D2 on the Matrix: A Galaxy of Online Learning Style, Motivational, Blended Learning and Learner-Centered Examples

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 ←—————→

Easy to Embed Extensive Planning

2. Time ←—————→

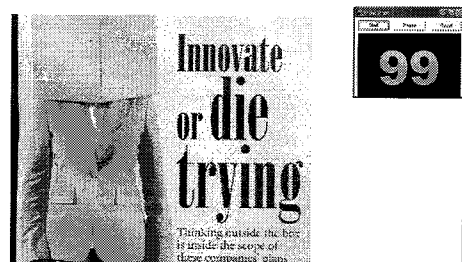
Free or Inexpensive Enterprise Licenses

3. Cost ←—————→

Instructor-Focus Student-Focus

4. Student-Centered ←—————→
 Low High

Let's Think Outside the Box!
 (For 99 Seconds—what technologies that you might not think about using for learning, might students today prefer to use?)




99

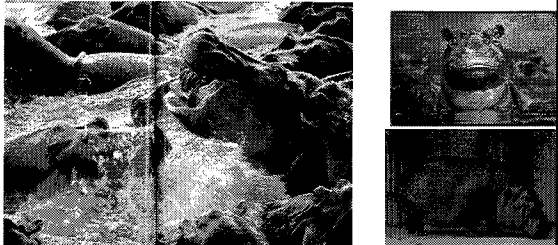
Innovate or die trying
 Thinking outside the box is inside the scope of these companies' plans.

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)



Part I: 10 Learner-Centered Technology Ideas



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

Cognitive and Metacognitive Factors Developmental and Social Factors

- | | |
|--|---|
| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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

Motivational and Affective Factors

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



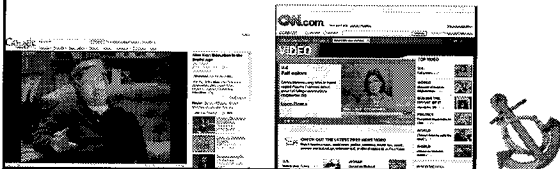
2. Constructivistic Teaching Principles (Brooks, 1990)

1. Build on student prior knowledge.
2. Make learning relevant.
3. Give students choice in learning activity.
4. Student autonomy & active learning encouraged
5. Use of raw data sources & interactive materials
6. Encourage student dialogue
7. Seek elaboration on responses and justification
8. Pose contradictions to original hypothesis
9. Ask open-ended questions & allow wait time
10. Encourage reflection on experiences



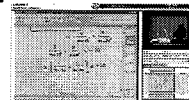
1. Anchored Instruction (find anchoring event (CTGV, 1990?) (L/M = Cost, M = Risk, M = Time)

- 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 ^{Cool Stuff} (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.



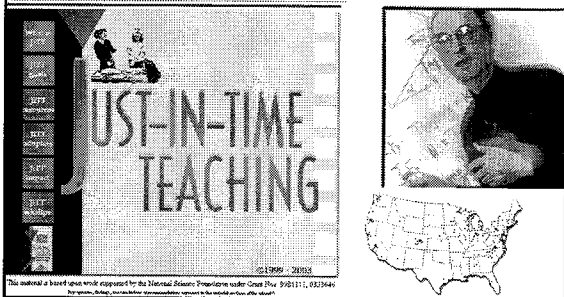
4. 99 Second Quotes (L = Cost, M = Risk, M = Time)

- 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



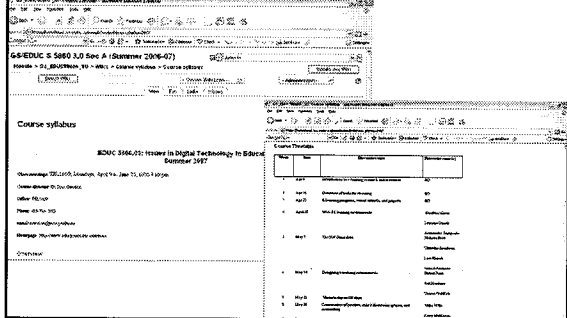
5: Online Warm-ups Activities Just-In-Time-Teaching (JITT)

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



6. Syllabus, Glossary, etc. in wiki: Students sign up for tasks

(Ron Owston, York University)



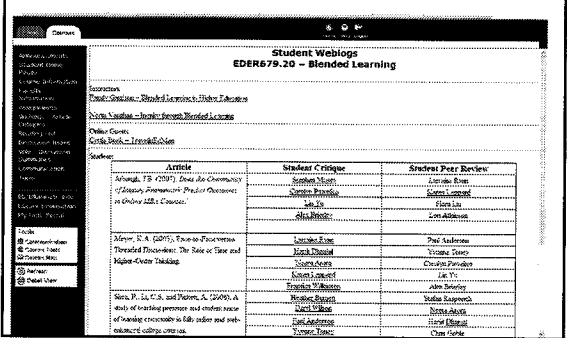
7. Six Hats (Role Play):

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

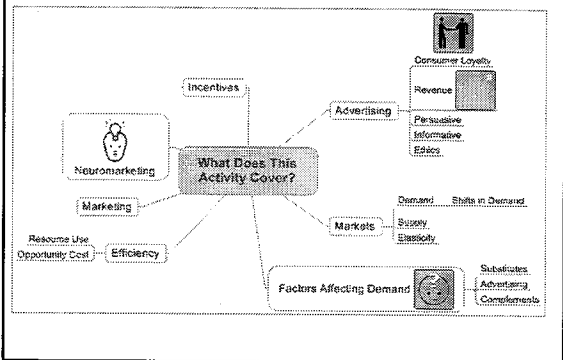
- **White Hat:** Data, facts, figures, info (neutral)
- **Red Hat:** Feelings, emotions, intuition, rage...
- **Yellow Hat:** Positive, sunshine, optimistic
- **Black Hat:** Logical, negative, judgmental, gloomy
- **Green Hat:** New ideas, creativity, growth
- **Blue Hat:** Controls thinking process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

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

8. Paired Weblog Critiques

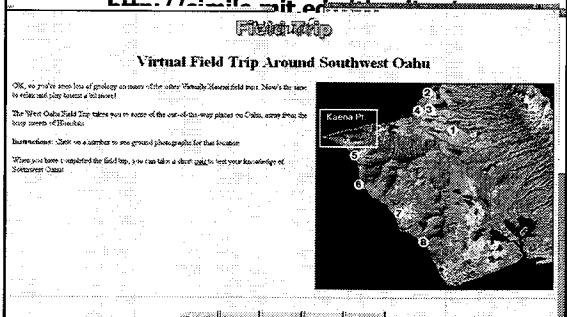


9. Concept Mapping Tools



10. Exploration and Demonstration: Virtual Fieldtrip, Tours, Timelines

<http://www.mit.edu>

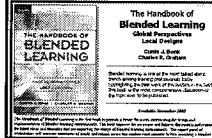


Part II: 10 Blended Learning Solutions



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)

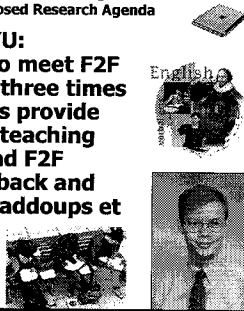


Blended Solution #1.

Divide Online and Class Experiences (e.g., English Classes Online)

Graham, Ure, & Allen (2003, July). Blended Learning Environn
A Literature Review and Proposed Research Agenda

- **Freshman English at BYU:** Students are required to meet F2F once a week instead of three times a week. Online modules provide writing instruction and teaching assistants use online and F2F contact to provide feedback and guidance on writing (Waddoups et al., 2003).



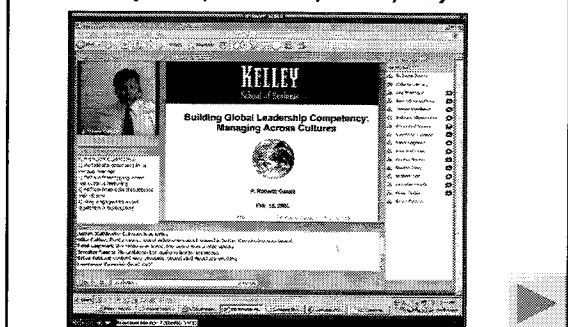
Blended Solution #2. Video Streamed Lectures and Expert Commenting



Blended Solution #3. Apprenticeship: Electronic Guests & Mentoring



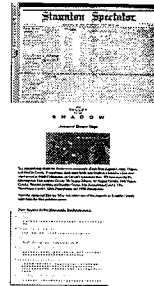
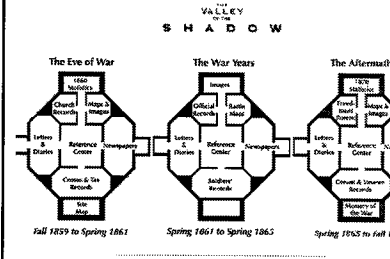
Blended Solution #4. Instructor Presentation in Synchronous Sessions (Breeze, Elluminate, WebEX, etc.)



Blended Solution #5. Online Literature Search (Class Google Jockeys)
The Electronic Literati, in Search of a Voice,
June 1, 2007, Chronicle of Higher Education,
Jeffrey Young
(links to text, soundtracks, video clips, etc.)

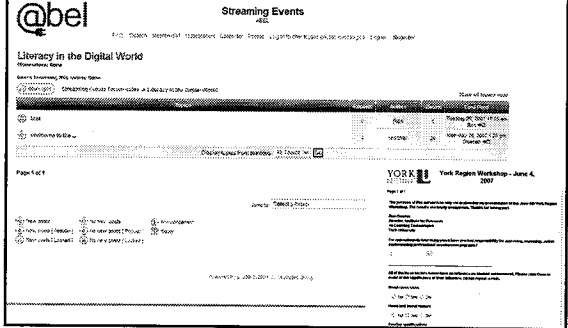


Solution #6. Instructor Portal:
e.g., self study in anatomy

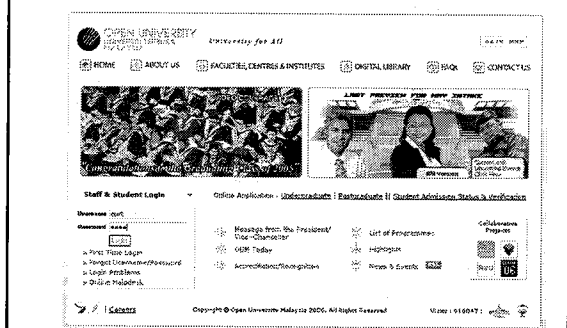


USING THE VALLEY PROJECT
 Click into the resources on right to learn more.

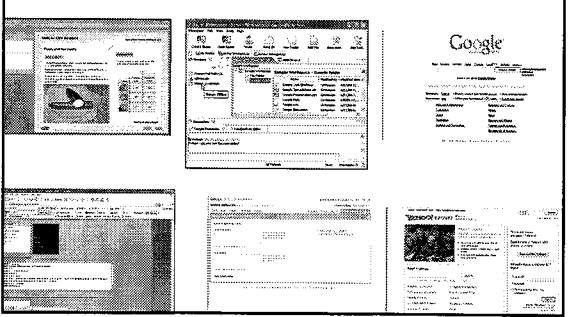
Solution #7. Online Surveys and Discussions Prior to Meeting



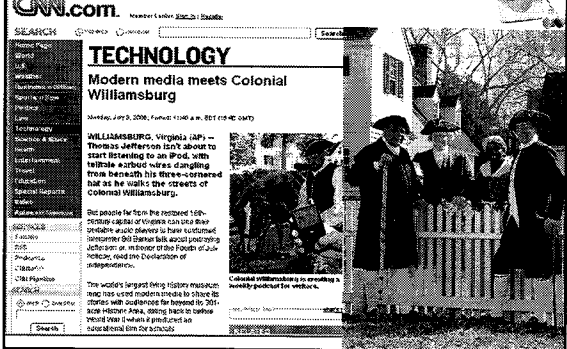
Solution #8. Cross-Class Collab (Indiana Univ and Open U of Malaysia)

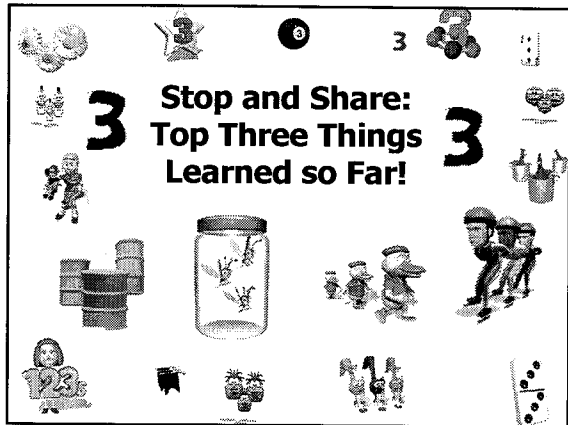


Blended Solution #9. Sharing in Virtual Teams (e.g., Collanos, Groove, SharePoint)



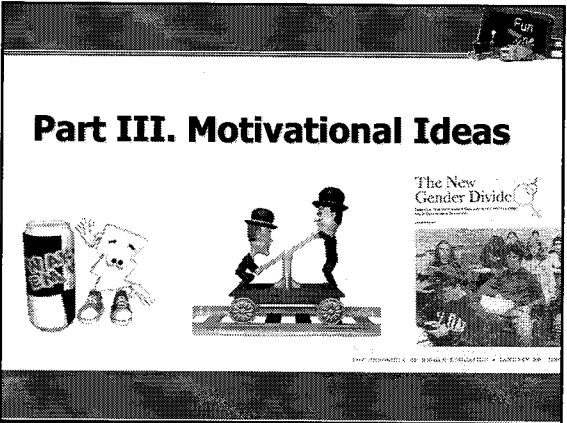
Blended Solution #10. Art and History Exhibits



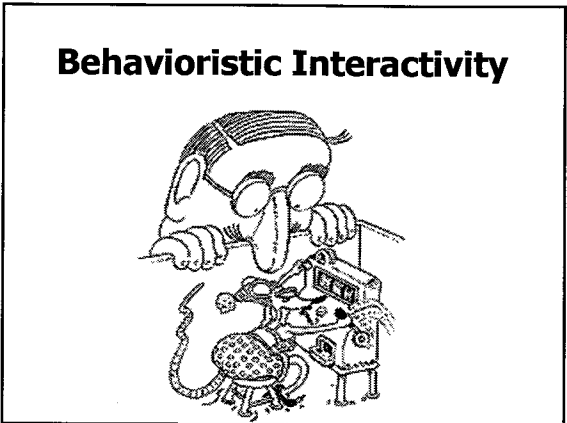


What can we say about blended and learner-centered learning then???

- **It is everywhere!!!!!!!**
- **Resistance is futile!!!!!!!**



- Top Reasons for Dropping Out (Deosnews, May 2004; Frankola, 2001)**
- **Lack of time**
 - **Lack of management oversight**
 - **Lack of motivation**
 - **Lack of student support**
 - **Individual learning preference**
 - **Poorly designed course**
 - **Substandard/Inexperienced instructor**



Three Most Vital Skills

The Online Teacher, TAFE, Guy Kemshal-Bell (April, 2001)

- Ability to engage the learner (30)
- Ability to motivate online learners (23)
- Ability to build relationships (19)
- Technical ability (18)
- Having a positive attitude (14)
- Adapt to individual needs (12)
- Innovation or creativity (11)



Intrinsic Motivation

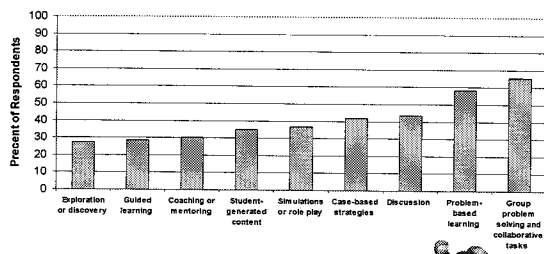
"...innate propensity to engage one's interests and exercise one's capabilities, and, in doing so, to seek out and master optimal challenges

(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.



Instructional Approaches that Selected by Respondents as Among the Four Strategies Likley to Become More Widely Used



So, I reflected on this for a moment...



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



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: Ice Breakers

C. Eight Nouns Activity:

1. Introduce self using 8 nouns
2. Explain why choose each noun
3. Comment on 1-2 peer postings



D. Two Truths and One Lie

1. Post 3 things and students must figure out which is the lie.



2. Encouragement, Feedback, etc.: A. Critical/Constructive Friends, Email Pals...

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

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

5. Autonomy, Choice: B. Multiple Topics

- Generate multiple discussion prompts and ask students to participate in 2 out of 3
- Provide different discussion "tracks" (much like conference tracks) for students with different interests to choose among
- List possible topics and have students vote (students sign up for lead diff weeks)
- Have students list and vote.

6. Relevance: Meaningfulness: B. Authentic Data Analysis

**7. Interactive, Collaborative:
D. Discussion: Starter-**



Wrapper (Hara, Bonk, & Angeli, 2000)

1. Starter reads ahead and starts discussion and others participate and wrapper summarizes what was discussed.
2. Start-wrapper with roles--same as #1 but include roles for debate (optimist, pessimist, devil's advocate).

E. Alternative: Facilitator-Starter-Wrapper (Alexander, 2001)

Instead of starting discussion, student acts as moderator or questioner to push student thinking and give feedback

8. Engagement: 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.

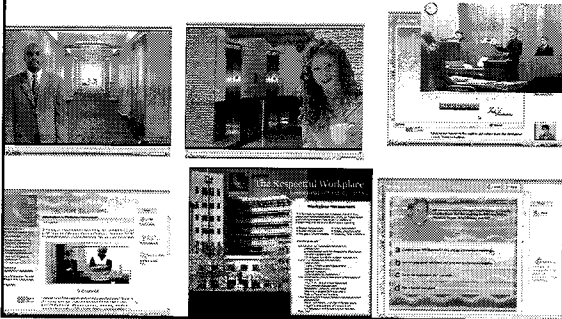
CBCnews CANADA | EDMONTON

Text-message course helping newcomers learn English

A pen and paper aren't necessary in an Edmonton classroom where students are learning English with a tool — text messages on their cellphones.



**9. Tension, Challenge, etc.:
B. Scenario Learning** (Emmis Communications)

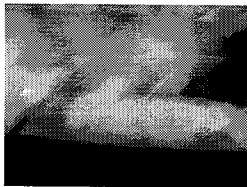


**10. Yields Products: Concept Maps,
Video Papers, Virtual Timelines**

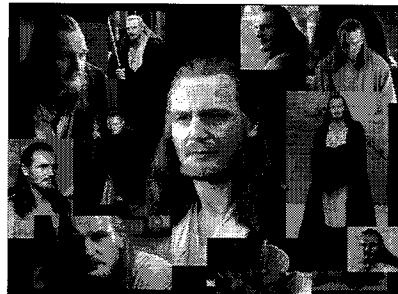


99 seconds: What have you learned so far?

- Solid and Fuzzy in groups of two to four



Part IV. Addressing Learning Styles



Why Address Learning Styles?

- Promotes reflection on teaching
- Move from just one mode of delivery
- View from different viewpoints
- Offer variety in the class
- Might lower drop-out rates
- Fosters experimentation



Poll 1: Which learning style do you prefer?

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



Kolb (1984)

- According to Kolb, effective learning involves four phases:
 - from getting involved (Concrete Experience) to
 - listening/observing (Reflective Observation) to
 - creating an idea (Abstract Conceptualization) to
 - making decisions (Active Experimentation).
- A person may become better at some of these learning skills than others; as a result, a learning style develops.

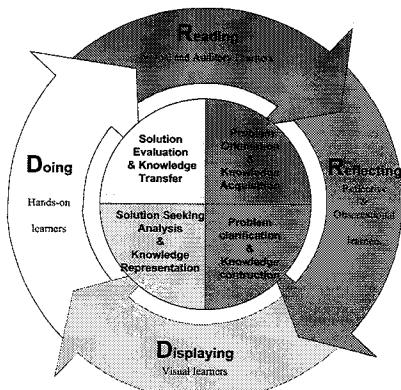


Index of Learning Styles Questionnaire

Barbara A. Solomon, North Carolina State Univ
<http://www.engr.ncsu.edu/learningstyles/ilsweb.html>

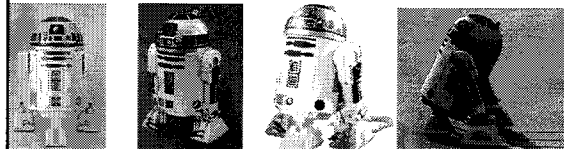


- If I were a teacher, I would rather teach a course
 - (a) that deals with facts and real life situations.
 - (b) that deals with ideas and theories.
- I prefer to get new information in
 - (a) pictures, diagrams, graphs, or maps.
 - (b) written directions or verbal information.



The R2D2 Method

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

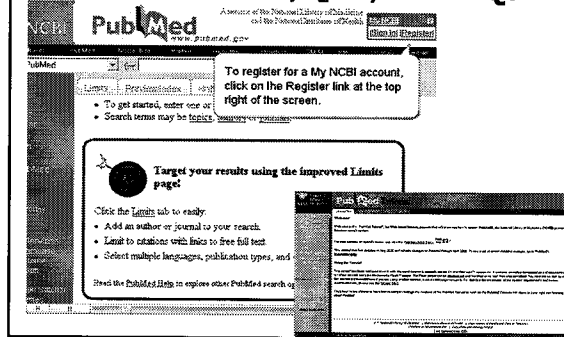


1. Auditory or Verbal Learners

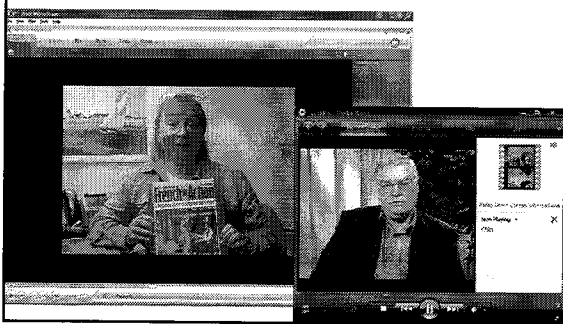
- Auditory and verbal learners prefer words, spoken or written explanations.



1a. Online Tutorials, Help, Announcements, Q&A, and FAQs



1b. Video Course Introductions (examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

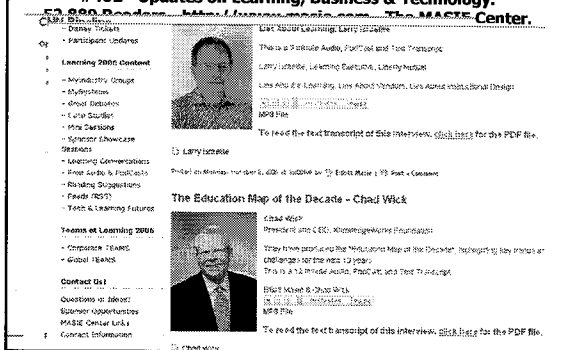


1c. Use of Weblogs (especially English writing class)

1. Instructor or Tutor blog: resources, information, space to chat
2. Learner blog: reflections, sharing links and pics, fosters ownership of learning
3. Partner blog: work on team projects or activities
4. Class blog: international exchanges, projects, PBL
5. Revision: review and explode sentences from previous posts, add details
6. Nutshell: summarize themes or comments across blogs
7. Blog on blog: reflections on feelings, confusions, and experiences with blogs

1d. Podcast

Learning TRENDS by Elliott Masie - September 18, 2006.
#402 - Updates on Learning, Business & Technology.







Educational Applications of Podcasting (Essex, 2006, Leftwich, 2007)

1. Recordings of lectures (Coursecasting)
2. Supplemental textbook or entire book
3. Student projects
4. Interviews
5. Language lessons
6. Oral reports
7. K-12 classroom interactions
8. Downloadable library of resources
9. Recordings of performances



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

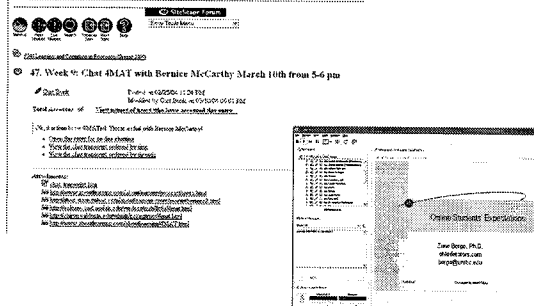
2a. Post Model Answers

Employment Law and Ethics Project

Question 1
Would it be illegal for Laure 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 Laure does not recommend Lewis, she is guilty of violating the law. None of the three primary defenses—seniority, merit, or bona fide occupational qualifications—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 who 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

2b. Reuse Blog, Chat Transcripts, Presentations

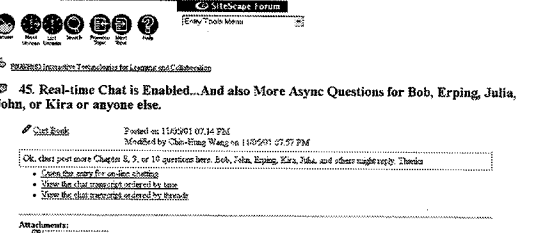


2c. Reflecting on Adventure Blogging

(Ben Saunders, Mark Fennell, Andrew Rowlin)

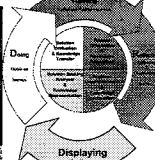



2d. Practitioner Feedback: Asynchronous Threaded Discussion plus Sync Expert Chat (e.g., Starter-Wrapper + Sync Guest Chat) (L/M = Cost, M = Risk, M = Time)



3. Visual Learners

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

3a. Online Anatomy and Physiology

The screenshot displays an interactive anatomy website. On the left, there is a navigation menu with options like 'Home', 'About Us', 'Contact Us', and 'Feedback'. The main content area is titled 'INTERACTIVE ANATOMY' and 'CARDIOVASCULAR SYSTEM'. It features a 3D anatomical model of the human torso with the heart and major blood vessels highlighted. Text on the right explains the function of the cardiovascular system, mentioning the heart as a pump that circulates blood throughout the body. There are also several small images and diagrams illustrating different parts of the system.

3b. Animations, Video Clips, Audio, Pictures, Web Resources, etc.

The screenshot shows a web page with a dark background and white text. The main heading is 'RNA was the first genetic molecule.' Below this, there is a paragraph of text: 'RNA was very likely the first molecule to be able to replicate itself. In the primordial soup, a single-stranded RNA molecule could be a template.' To the right of the text is a diagram of a single-stranded RNA molecule, represented as a chain of interconnected circles. There are also several small thumbnail images and video player icons scattered across the page.

3c. Explore Virtual Worlds and Online Representations (UCLAs CVRLab, Univ of Virginia, June 11, 2007)

The screenshot shows a virtual world interface with a dark background. In the center, there is a large, glowing, abstract structure that resembles a classical building or monument. The interface includes several smaller windows and panels, some of which display text and images. The overall aesthetic is futuristic and digital.

3d. Vodcast for Medical Training (e.g., "SonoSite on the small screen: The Bothell-based")

The screenshot shows a video player interface. The main video area displays a close-up of a person's hands performing a medical procedure, likely an ultrasound, on a patient's arm. The video player has a standard control bar at the bottom with buttons for play, stop, and volume. The text above the video provides context for the training material.

3e. Math Representation

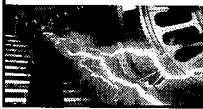
The screenshot shows the Maple T.A. (Test, Assign, and Practice) software interface. It features a complex layout with multiple windows. On the left, there is a navigation pane. The main area displays a math problem involving a graph of a function. The graph shows a curve that starts at the origin and increases. The text '1 New Shipping' is visible, along with a small diagram of a shipping container. The interface is designed for students to interact with mathematical problems and receive feedback.

3f. Reflection Sheets and Scaffolds online (E-Reading First Ohio) (reflect, share, and compare)

The screenshot shows an online reflection sheet interface. It features a large video player on the right side, which is currently showing a woman speaking. Below the video player, there are several text boxes and input fields for students to enter their reflections. The interface is designed to facilitate a structured reflection process on the video content.

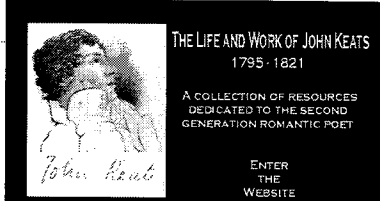
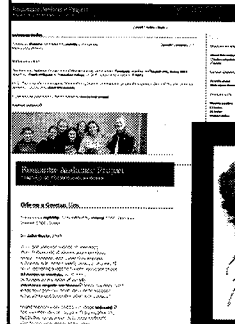
4. Tactile/Kinesthetic Learners

- 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.



4a. Romantic Poetry Project

(Professor Mike Phillipson, English at Bowdoin College)



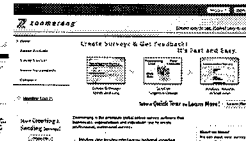
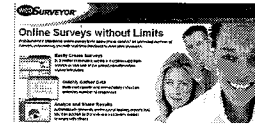
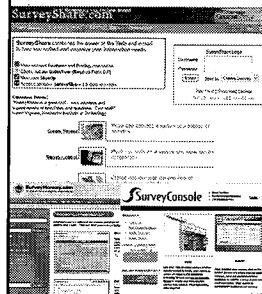
4b. Videoconferencing with Hearing Impaired Students Online

- 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



4c. Survey Research and Market Analysis

(e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)



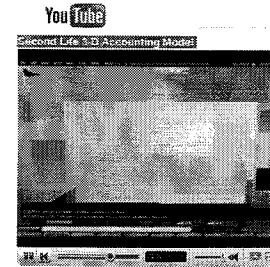
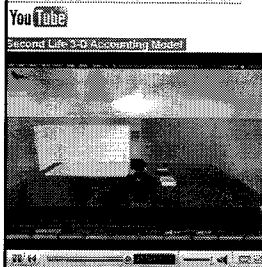
4d. Virtual Worlds/Virtual Reality/MMOG

Wednesday, August 30, 2006
 Harvard Law School (Charles & Rebecca Nesson)
 Chronicle of Higher Ed (open to the public)
<http://chronicle.com/daily/2006/08/2006083001t.htm>




Second Life 3-D Accounting Model

<http://www.youtube.com/watch?v=4T4zTSvK6Y>



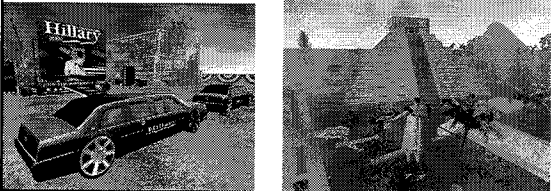
SURFING SECOND LIFE



Pepperdine University Professor Bill Moseley's students created an online world to reflect themes in Daniel Pink's A Whole New Mind. At the end of the course, Pink came to see their projects and joined them in a virtual hot tub for a decidedly informal discussion. (student creativity can grow and flourish; July 2007)

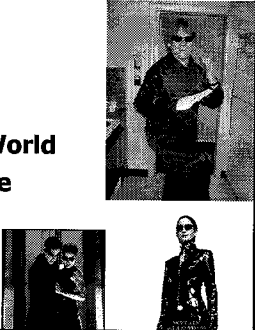
By Jayne Clark, USA TODAY, June 15, 2007, Oh, the places you'll go — on the Internet

- The Mexican Tourism Board threw a party Sunday at Chichen-Itza, the magnificent Mayan archaeological site in the Yucatan jungle. The thousands of guests, many of whom donned complimentary Mayan warrior get-ups and salsa-danced to live music, were an international mix. But nobody checked into a hotel when the festivities ended.

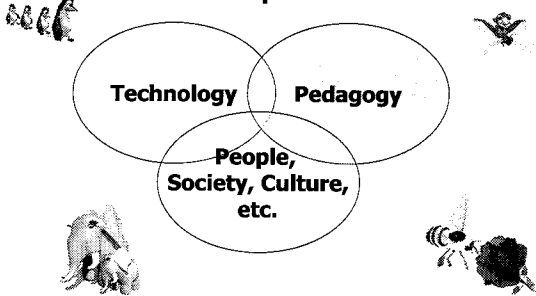



Next up: The MATRIX!!!!!!!!!!!!


- **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



 **The End...Remember**



Try the R2D2 Method!!!
Try TEC-VARIETY!!!
 Sample papers at: <http://www.publicationshare.com/>
 Archived talks at: <http://www.trainingshare.com/>

