Designing Interactive Learning for Visually-Hungry Learners
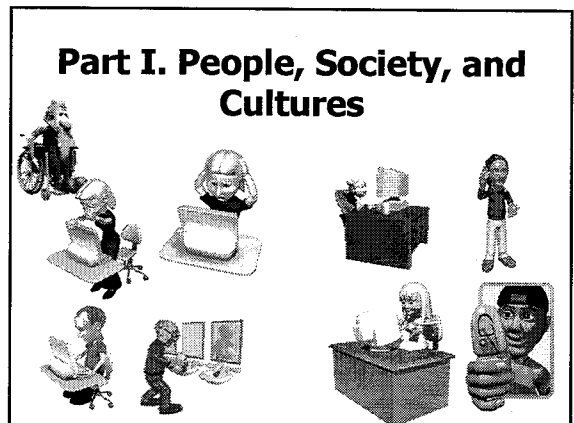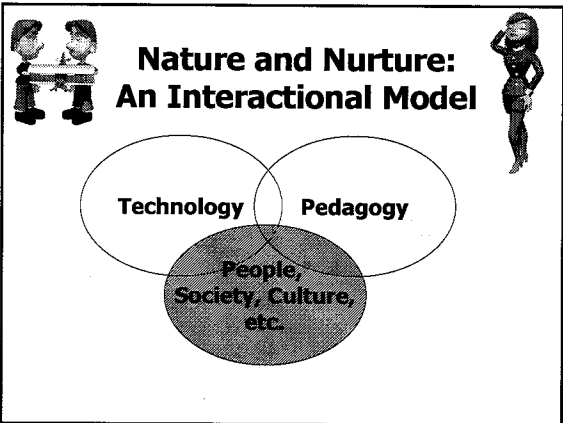
Curt Bonk, Professor, Indiana University
President, SurveyShare, Inc.
cjbonk@indiana.edu
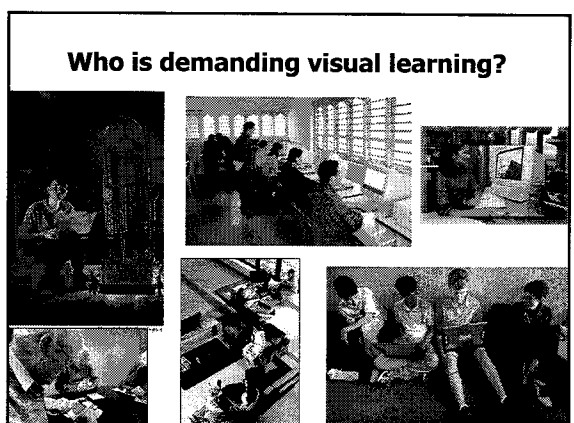http://mypage.iu.edu/~cjbonk/
http://SurveyShare.com

Poll #1. Does the Web offer enough visual opportunities today?

A = yes

B = no

C = not sure

Nature and Nurture: An Interactional Model

Technology   Pedagogy

People, Society, Culture, etc.

Part I. People, Society, and Cultures

Two Part Presentation
1. Next generation of students
2. Visual learning examples

We're LIVE!

Who is demanding visual learning?

Next Generation of Students

Tech creates a bubble for kids

Tech Creates Bubble for Kids
Alejandro Gonzalez, USA TODAY, Updated 6/20/2006 10:34 AM ET
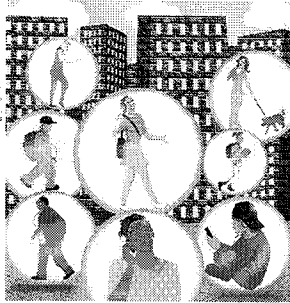
A Different Generation??? Multitasking...
"YOUNG AND WIRED," Katherine Seligman, San Fran Chronicle, Sunday, May 14, 2006

Gloria Kwan listens to her iPod while text messaging a friend who's in class.
Chronicle photo by Mike Kepka

INFORMATION TECHNOLOGY

E-Mail for Old People

"YOUNG AND WIRED, Computers, cell phones, video games, blogs, text messages -- how will the sheer amount of time spent plugged in affect our kids?"
Katherine Seligman, San Fran Chronicle, Sunday, May 14, 2006
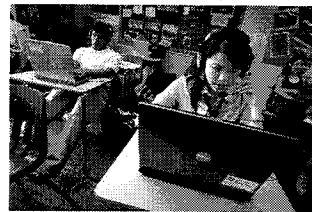
Harker student Stephanie Lil (wearing a false nametag), during language class, recording her voice in Spanish for the teacher to evaluate later. Chronicle photo by Mike Kepka

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USA Today, October 3, 3006

Totally wireless on campus
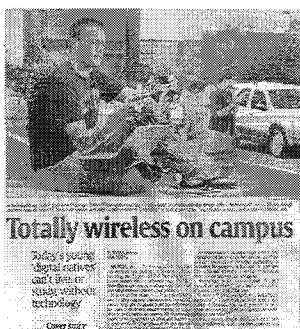
Top 5 "In" Things on Campus
June 7, 2006, USA Today

iPods knock over beer mugs

By Mike Snider, USA TODAY

That iPods are "in" on college c you. That Apple's portable musi than beer? Now that's surprisin

TOP 5 'IN' THINGS ON CAMPUS

	Spring 2005	Spring 2006
iPods	59%	73%
Drinking beer	72%	71%
Facebook.com	N/A	71%
Drinking other alcohol	65%	67%
Text messaging	59%	66%

Source: Spring 2006 Lifestyle & Media Study, Student Monitor

Learning in Cafes and Pubs
USA Today, October 5, 2006

ON DEMAND
IN DEMAND

Computers, quiche and quiet

50 million strong army of workers plugs away away from the office

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Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET

- Nick Currie and his girlfriend Shizu Yuasa (R) surf the internet over breakfast in Tokyo in this handout photo. As the Internet evolves -- with its webcams, iPods, Instant Messaging, broadband, wi-fi and weblogs --. **"For my birthday, he upgraded my RAM and I thought it was incredibly romantic,"** writes Jess.

Generations: Dealing with Boomers, Gen-X, and Beyond
N. Boyce Appel, April 1, 2005, Practice Management Digest

Generalizations about Generations—Categorizations vs. Stereotypes

Generational Group	Born	Age	Stereotype
Silent Generation	1925 - 1942	61 - 78	Adaptive
Baby Boomers	1943 - 1960	43 - 60	Idealists
Thirteenth (Gen. X)	1961 - 1981	22 - 42	Reactive
Millennial (Gen. Y)	1982 - ?	13 - 21	Civic

NEW STUDENTS

All learning in one's own hands?

Wired for safety, late-night snacks

Penn State Live offers mobile news service

Better Technology in High Schools Raises Students' Expectations, George Washington Univ., Sept 22, 2006, Chronicle of HE, JEFFREY R. YOUNG

- **Just a few aisles down at the bookstore, Meenoch Kim, another freshman, said upper-level classrooms in her high school, back in Knoxville, Tenn., also had Smart Boards. She prefers PowerPoint presentations over writing on chalkboards, she said, because instructors' handwriting is "messy," and she often cannot read it.**

Demand for Internet in US
(Special MSNBC report, Dec 13, 2004)

Difficulty in disconnecting

Always online -- and always talking
When three days without a word is an eternity

"Learning that takes place in the classroom isn't as important as time studying on your own."
·Dziuban, Moskal, & Hartman (2005)

Generation Raised on the Internet Comes of Age, MSNBC, Dec., 13, 2004, Martha Irvine

- For 21-year-old William Herbert, the Internet has replaced newspapers and TV weather reports (he visits Weather.com every morning). He pays his bills online, registers for classes, books airline and train tickets, checks TV listings, buys movie tickets and gets travel directions.

Behavioristic Interactivity
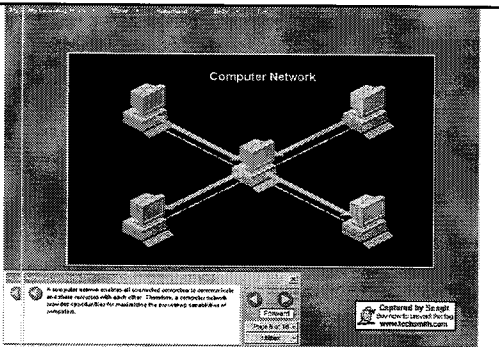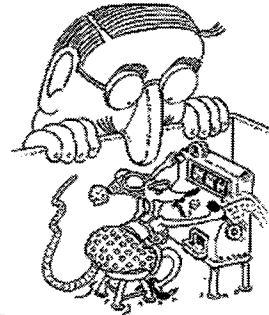
Online PowerPoint?

Interaction: Boomer

- Life experienced at a slower pace promotes an expectation of "it's ok to wait." Learning experienced from an early age as lecture with drill and practice without stimulation/response. Gaming as part of a learning context may be considered less effective because it is less "serious" and in some cases can be distracting.
- Older people prefer less interaction than younger people in distance education (Kearsley, 1995).

Interactivity Online

- Animations in small files (Macromedia (Adobe) Flash)
- Capture desktop activities (Matchware Screencorder)
- Collaborative writing (Writely.com, Jotspot)
- Desktop audio recordings (Audacity; iLife)
- Group Forums (Yahoo! Groups, Google Groups)
- Instant Messaging (AIM, MSN, Yahoo!)
- Noncollaborative writing (Blogger, Pitas)
- Photo Storage (Flickr)
- PP Slides with animation and narration (Articulate)
- VoIP (Skype and Google Talk) voice and text
- Web meetings (Ivisit)
- Wikis (PB Wiki, MediaWiki)

Interaction: Xer

- "The skill to be valued in the twenty-first century is not the length of attention span, but the ability to multitask - to do many things well at once.... [and] the ability to process visual information very rapidly." (Rushkoff, 1996:50)
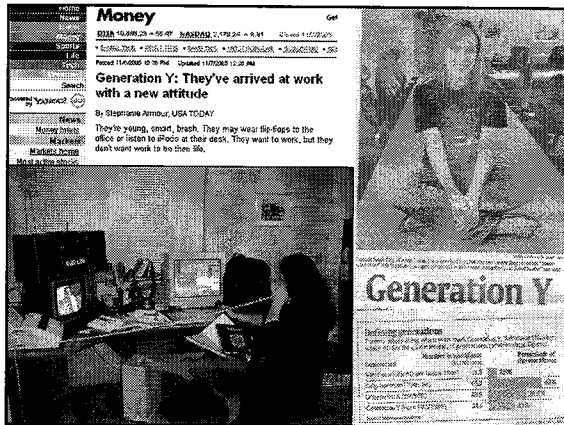
Learner Control: Boomer

- **The traditional instructor-focus is what is expected. The instructor determines what is important to learn and how it should be learned. Consistency and control are maintained with the "tell me, tell me, tell me" approach.**

Learner Control: Xer

- Xers expect a range of options, in terms of what they learn and how they learn it. They require autonomy and flexibility for their own learning. They demand a variety of instructional methods from which they can choose to learn, e.g., videotapes, self-paced modules, interactive CDs.
  - "Online gives me something to do when I'm bored with the professor."
  - "I respect myself more as a self-teacher."
    - Dziuban, Moskal, & Hartman (2005)

Neomillenial Learning Styles

Planning for Neomillennial Learning Styles: Implications for Investments in Technology and Faculty
Chris Dede, Harvard University, Educause, 2005

- Fluency in multiple media--value all types of communication, activities, experiences, not a single best medium
- Actively seek, collect, and synthesize experiences, rather than absorb a single best source
- Active learning and collective reflection
- Non-linear and associated webs of learning
- Co-design of learning experiences for individual needs and preferences not pre-customized

CAMPUSMOVIEFEST.COM showcases the collab work of tens of thousands of student filmmakers from around the world

Dual Coding Theory

Slide 1

The promise of multimedia learning: Using the same instructional design methods across different media
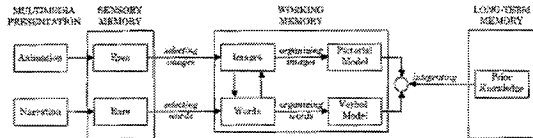Richard E. Mayer, Learning and Instruction, 13 (2003) 125-139.

Fig. 1. A cognitive theory of multimedia learning.

Slide 2

The promise of multimedia learning: Using the same instructional design methods across different media
Richard E. Mayer, Learning and Instruction, 13 (2003) 125-139.

A review of research on the design of multimedia explanations:

(a) a multimedia effect: in which students learn more deeply from words and pictures than from words alone—in both book-based and computer-based environments,

(b) a coherence effect: in which students learn more deeply when extraneous material is excluded rather than included—in both book-based and computer-based environments,

Slide 3

The promise of multimedia learning: using the same instructional design methods across different media
Richard E. Mayer, Learning and Instruction, 13 (2003) 125-139.

(c) a spatial contiguity effect: in which students learn more deeply when printed words are placed near rather than far from corresponding pictures—in both book-based and computer-based environments, and

(d) a personalization effect: in which students learn more deeply when words are presented in conversational rather than formal style—both in computer-based environments containing spoken words and those using printed words.

Slide 4

What can we say about visual learning then???

• It is everywhere!!!!!!!!

• Resistance is futile!!!!!!!
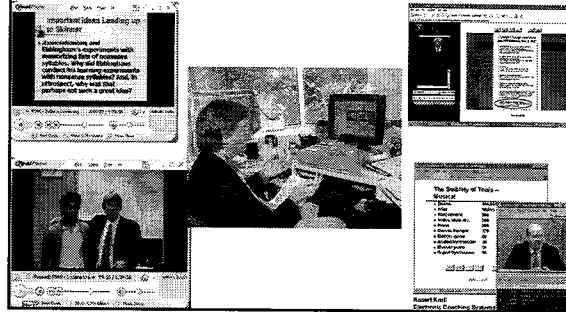
Slide 5

Slide 6
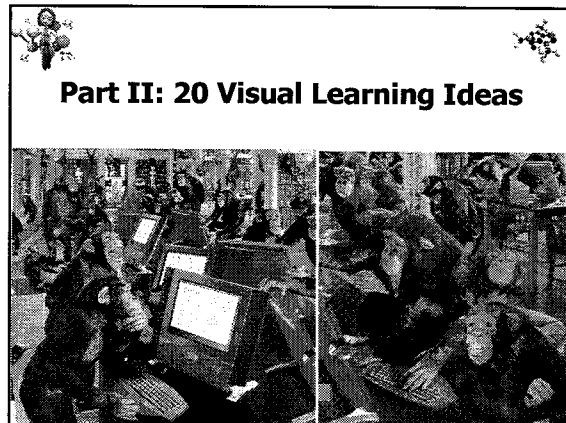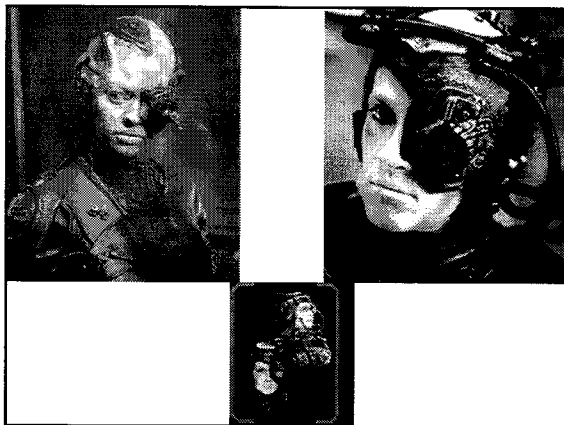
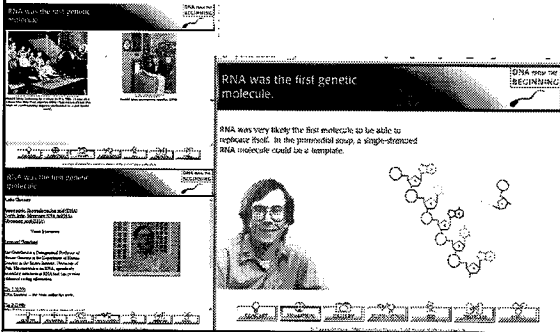**Part II: 20 Visual Learning Ideas**

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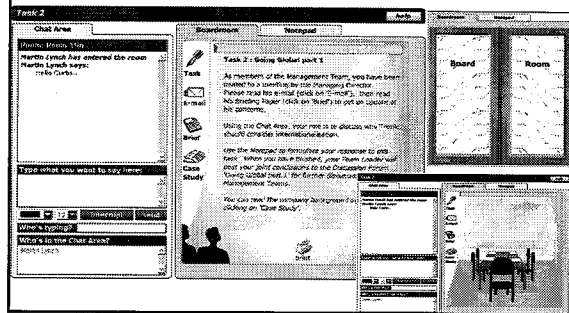

Visual Solution #1. Video Streamed Lectures and Expert Commenting

Visual Solution #2. Instructor Portal: e.g., self study in anatomy

Visual Solution #3. Online Synchronous Cases and Teams; Simulated Boardroom Chat; College Wales, Univ. of Glamorgan

Visual Solution #4.
Video Observations (e.g., Virtual Psychiatric Interview, Trinity College, Dublin)

Visual Solution #5. Cases Online
http://optionstraining.org/login
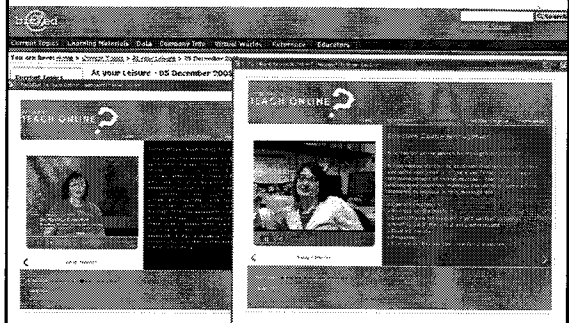
Visual Solution #6. Real World Problems (PBL online): Real-time Cases

Visual Solution #7. Explore Virtual Worlds and Online Representations (UCLAs CVRLab)


Visual Solution #8. 3-D Visualization & Laboratory Software


Visual Solution #9. Online Content Videos

Visual Solution #10. Use Google Maps Mashups in K-12 Education
By Jeffrey Branzburg, May 15, 2006
http://www.techlearning.com/story/showArticle.jhtml?articleID=18700 2846

Maps: Earthquakes in the last week

## Visual Solution #11. Concept Mapping Tools

Visual Solution #12. Exploration and Demonstration: Virtual Fieldtrip and Tours
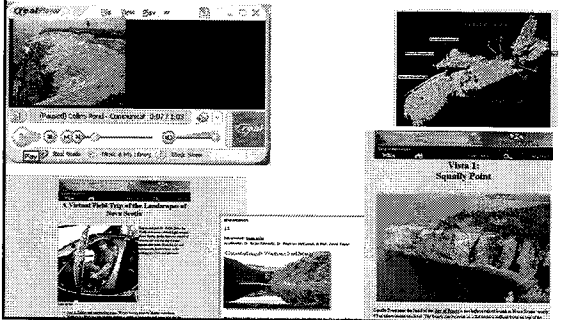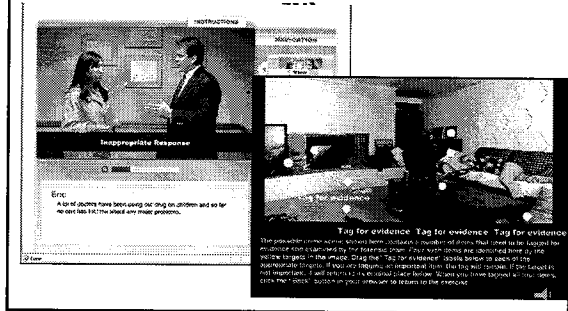

Visual Solution #13. Virtual Timelines
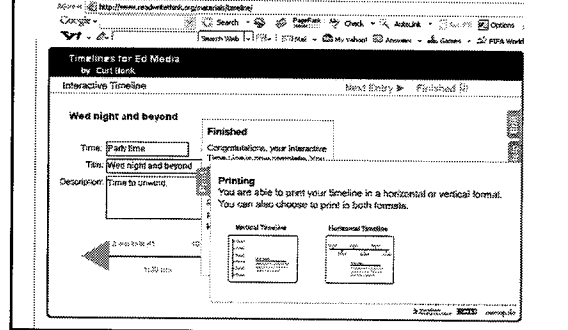
Visual Solution #14. Educ Simulations
(HEALING GAMES: Computer simulations don't have to be violent -- they can give peace a chance, Scott Duke Harris
### May 21, 2006, San Fran Chronicle; and Medical Traumas from TD Magazine, August 2006)
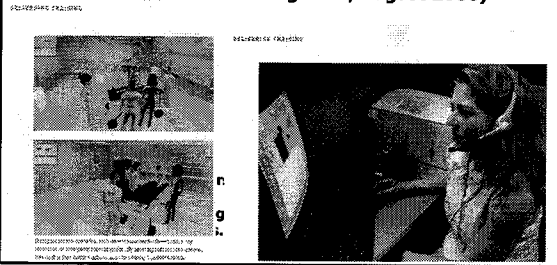
Visual Solution #15.
Video Scenario Learning
(Option 6, Arjuna Multimedia, Bloomington,

Visual Solution #16. Instructor Presentation in Synchronous Sessions
(Breeze, Elluminate, WebEx, etc.)
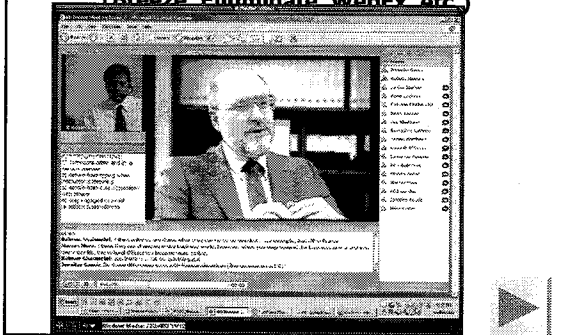
Visual Solution #17. Peer Critique in Breeze
(Table of Benefits of Peer Critique; Park & Bonk, in review)
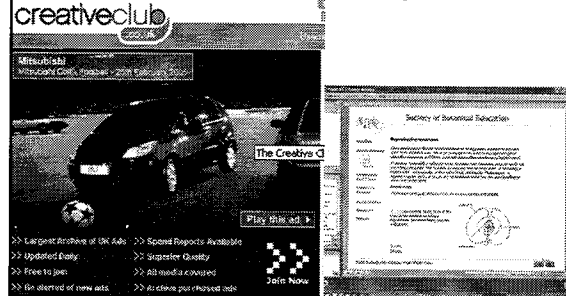
Visual 18. Current Events: Interactive Online New Stories & Cases

Visual Solution #19. Expert Mentoring in Art and Design (COFA Online, Omnium Project, Creative Waves—onine graphics and photomedia project)

Visual Solution #20. Historical Documents discoverbabylon.org

- In its final form, the multi-player game will let you march through three-dimensional recreations of the first city-states, around 3000 B.C., the first empires, around 2300 B.C., and finally the famous Iron Age empire of Assyria...offers three-dimensional walk-throughs of sites in the Valley of the Kings.

The End...Remember

It's Over...

Poll: Ok, then, who wants more???

A. Yes
B. No
C. Not sure

Sorry...it really is the end!!!