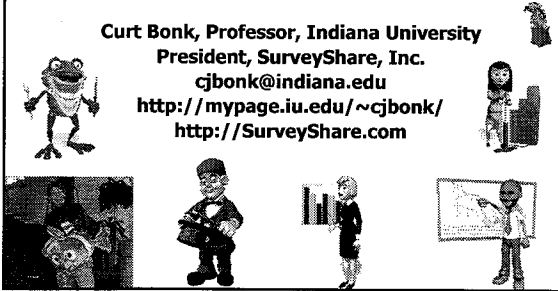


Designing Interactive Learning for Visually-Hungry Learners

Curt Bonk, Professor, Indiana University
 President, SurveyShare, Inc.
 cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>
<http://SurveyShare.com>

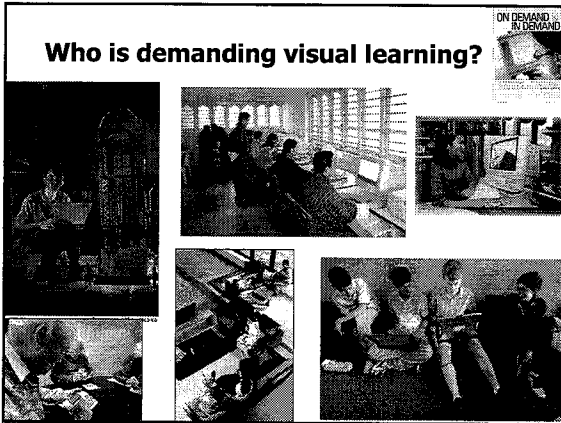


Poll #1. Does the Web offer enough visual opportunities today?

A = yes
 B = no
 C = not sure



Who is demanding visual learning?



Generations: Dealing with Boomers, Gen-X, and Beyond

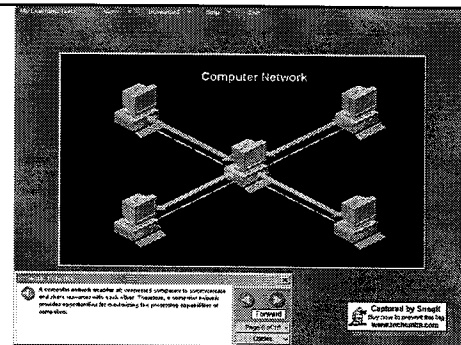
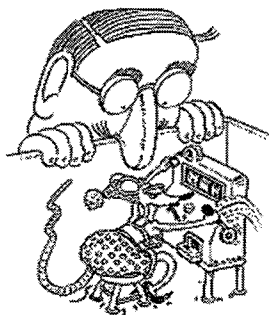
N. Boyce Appel, April 1, 2005, Practice Management Digest

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



Behavioristic Interactivity



Online PowerPoint?

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: 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)

Neomillennial 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

Dual Coding Theory

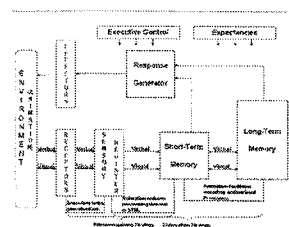


Figure 7.3 A Model of Retrieval, Dual Coding, and Information Processing.
Revised from "The Basic Model of Learning and Memory: Highlighting Modern Information Processing Theories" by K. M. Eagle and M. P. DeGroot, 1986, *Foundations of Learning in Instruction*, p. 15.

The promise of multimedia learning: Using the same instructional design methods across different media

Richard E. Mayer, *Learning and Instruction*, 13 (2003) 125-139.

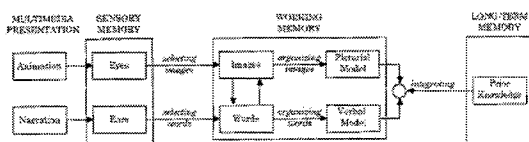


Fig. 1. A cognitive theory of multimedia learning.

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

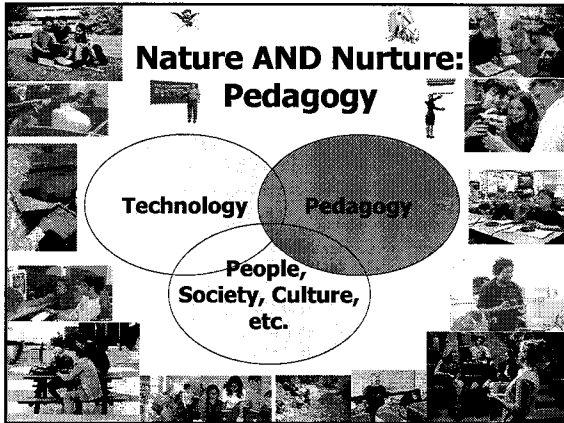
The promise of multimedia learning: using the same instructional design methods across different media

Richard E. Mayer, *Learning and Instruction*, 13 (2003) 125-139.

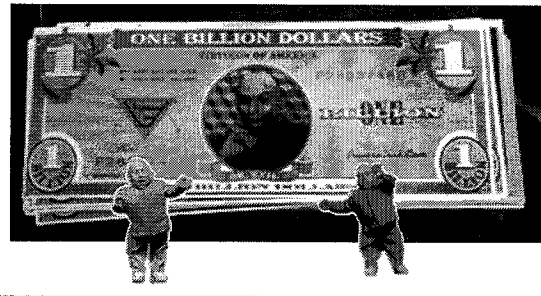
- (c) a spatial contiguity effect: in which students learn more deeply when printed words are placed near rather than far from corresponding pictures—in both book-based and computer-based environments, and
- (d) a personalization effect: in which students learn more deeply when words are presented in conversational rather than formal style—both in computer-based environments containing spoken words and those using printed words.



Part II: 40 Visual Learning Ideas



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



Visual Solution #1. Instructor Portal: e.g., self study in anatomy

Muscular System

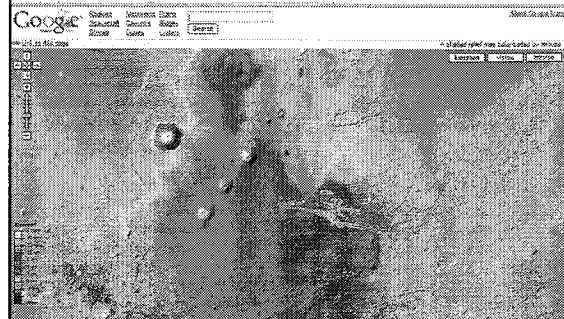
Upper Extremity Muscles

Click on one of the following categories:

- Neck Muscles
- Neck & Shoulder Muscles
- Forearm Muscles
- Hand & Wrist Muscles
- Deltoid & Shoulder Muscles
- Biceps & Forearm Muscles
- Triceps & Forearm Muscles
- Hand & Wrist Muscles

Upper Arm (Anterior)

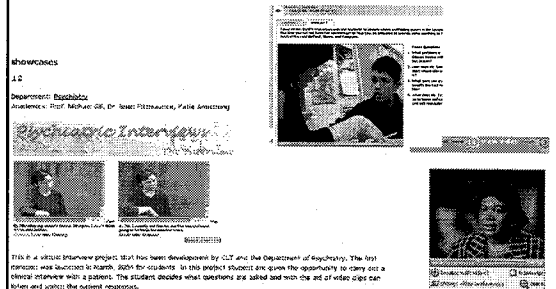
Visual Solution #2. Electronic Cameras and Maps



Visual Solution #9. Video Course Introductions
(examples from Northern Virginia Community College and Indiana University KD (online MBA) program)



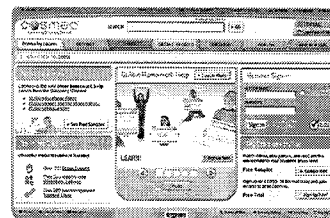
Visual Solution #10. Video Observations and Reflections (e.g., Virtual Psychiatric Interview, Trinity College, Dublin, e-Read First Ohio)



Visual Solution #11. Online Content Videos (e.g., Google Video, CNN Video, etc.)



Visual Solution #12. COSMEO: Online Homework Help from the Discovery Channel includes math homework help, 15,000 interactive learning quizzes, games, and puzzles, 27,000 research articles, and 30,000 video clips that correlate to state standards!!! And the collection is expanding daily (cost = \$9.95/month for up to 4 kids per family)



Visual Solution #13. REAL-World, 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.



Visual Solution #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



