
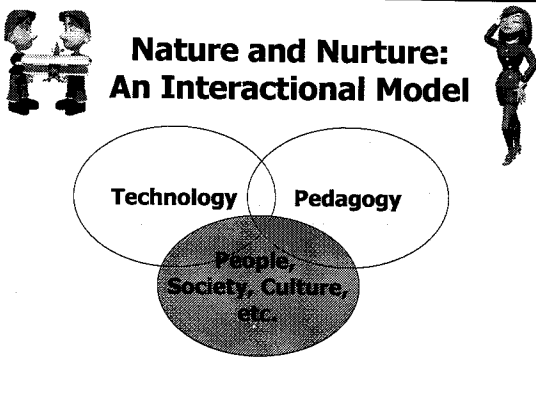
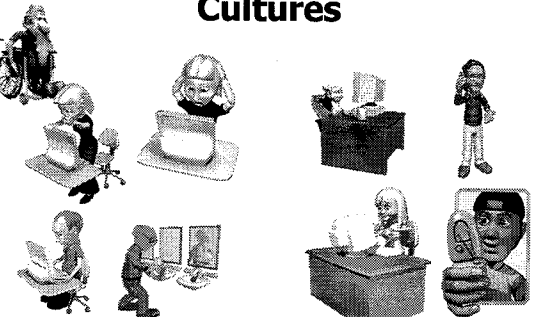


E-Learning: It's about Nature (technology) AND Nurture (pedagogy)
Curtis J. Bonk, Professor, Indiana University
 President, SurveyShare
 cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>

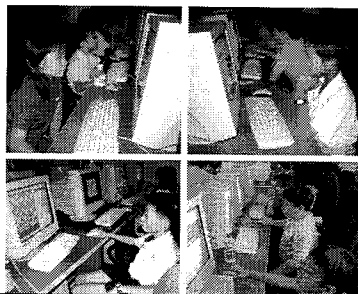



Nature and Nurture: An Interactional Model

Part I. People, Society, and Cultures

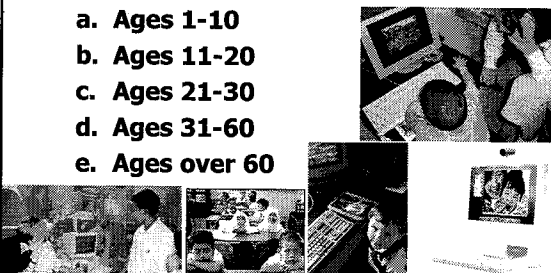


Poll #1:
 Raise your hands if you are a digital native (grew up with a computer at home).



Poll #2:
 What age learners are you interested in?


- a. Ages 1-10
- b. Ages 11-20
- c. Ages 21-30
- d. Ages 31-60
- e. Ages over 60



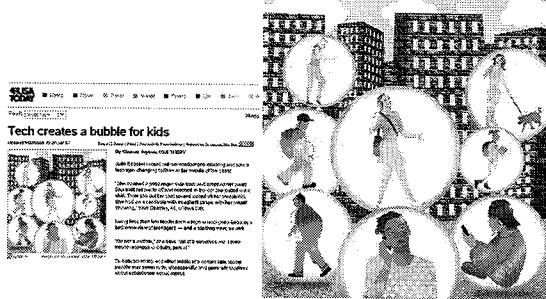
Generations: Dealing with Boomers, Gen-X, and Beyond
N. Boyce Appel, April 1, 2005, Practice Management Digest

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 |



Next Generation of Students



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



Effects of interactive multimedia in distance learning

Giti Javidi and Ehsan Sheybani, 2004, In Proceedings of the
IASTED International Conference WEB-BASED EDUCATION

"The advancement in technology is shaping every aspect of our life, including education. One decade ago, the Internet was not critical to education. However, now, it has become an integral part of learning process. Internet technology is having a dramatic effect on colleges and universities, producing what may be the most challenging period in the history of higher education."

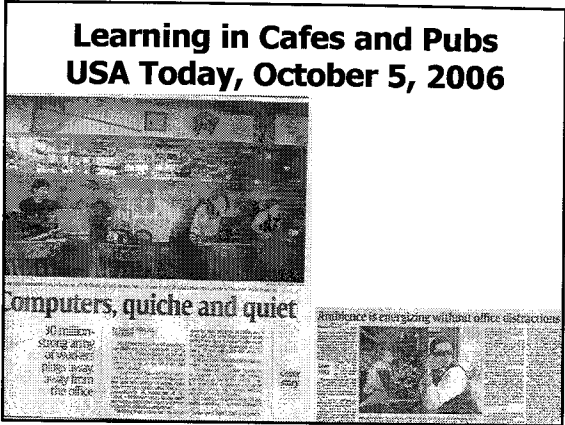
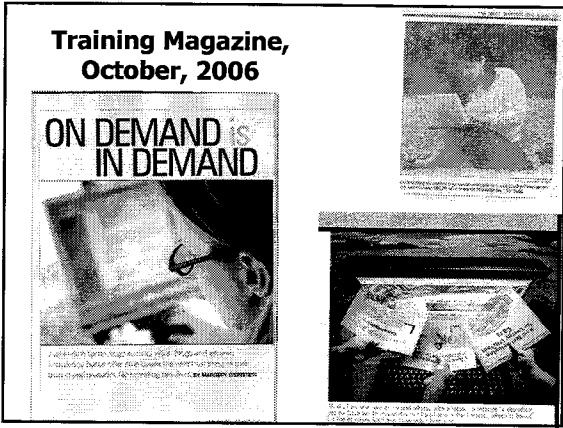
USA Today, October 3, 2006



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.





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 -- its image as a relationship-wrecker is changing. Now a sociable habit is emerging among the Netorati: couple-surfing. (Nick Currie/Handout/Reuters)
- "For my birthday, he upgraded my RAM and I thought it was incredibly romantic," writes Jess.

Behavioristic Interactivity

Online PowerPoint?

Learner Control: Older learners

- 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: Younger Learners

- 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)

Interaction: Older Learner

- 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).

Simulation: Younger Learner

- Genxers have a rapid-fire information consumption capability. Rushkoff argues that many of the things for which this generation is maligned, such as short attention spans and lack of ability to concentrate on a single task at once are not problems but actually brilliant coping mechanisms for a world overloaded with information.

Simulation: Younger Learner

- "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: Younger Learner

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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



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http://www.campusmoviefest.com/index/promo.html#ramp

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Dual Coding Theory

Figure 1. A Model of Instructional Dual Coding and Information Processing.
 Reprinted from: "The Basic Model of Learning and Memory: Underlying Memory Information Processing Theories," by R. M. Glaser and M. P. Thrun, 1988. Educational Technology for Instruction, p. 13.

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) 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,

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.

Nature and Nurture: An Interactional Model

