The Future of E-Learning and Blended Learning
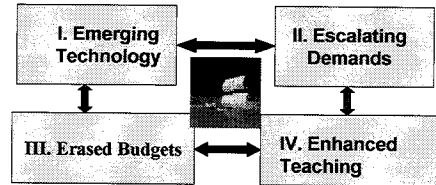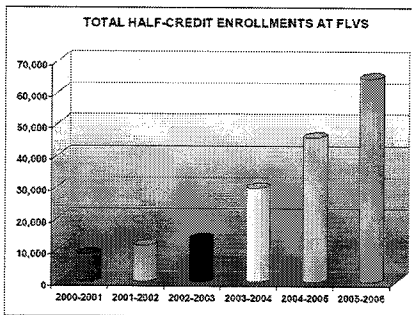
Curt Bonk, Professor, Indiana University
President, SurveyShare, Inc.
cjbonk@indiana.edu
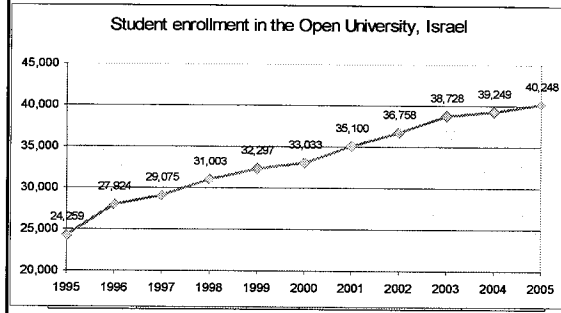http://mypage.iu.edu/~cjbonk/
http://SurveyShare.com

Four Storms are Approaching!

I. Emerging Technology	II. Escalating Demands
III. Erased Budgets	IV. Enhanced Teaching

Growth of Online Learning in Secondary Schools

TOTAL HALF-CREDIT ENROLLMENTS AT FLVS

Open University of Israel (overall enrollment growth)

Student enrollment in the Open University, Israel

24,259 27,924 29,075 31,003 32,297 33,033 35,100 36,758 38,728 39,249 40,248

The OUM

Enrollment Growth at the UOM

Enrollment

Year (2001 to 2005)
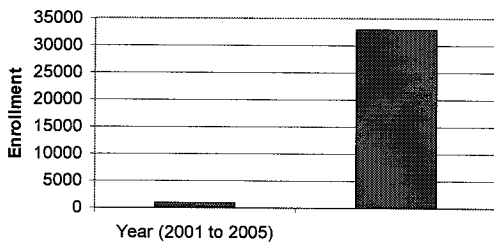
Growth in Student Enrollments

- Certificate Programs
- MS
- Public MBA
- Corporate MBA

2002-3   2003-4   2004-5   2006
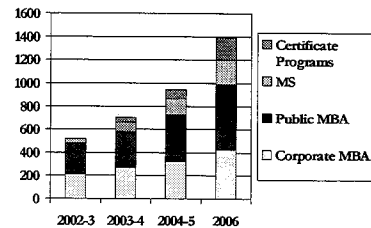
Defense Acquisition University
Shaping a Culture of Career-Long Learning



Graduates (Resident and Web-based)
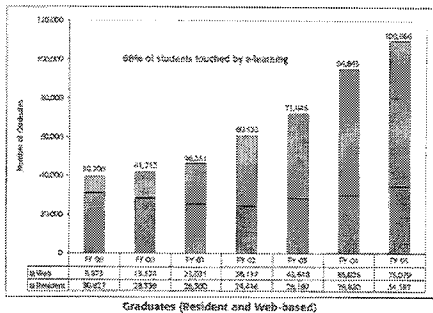
Precursors to this Study

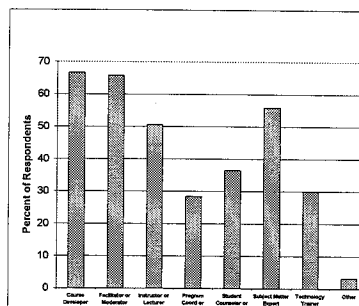| "Online Training in the Online World" (2001-2002)	"Surveying the future of workplace e-learning: *The rise of blending, interactivity, and authentic learning*" (2003-2004)	"The Future of Blended Learning in Corporate and Other Training Settings: An International Study" (2005-2006)

2003-2004 Study:
Expected quality of online education compared to traditional instruction

Legend:
- Online learning today (2003)
- Online learning in 3 years (2006)
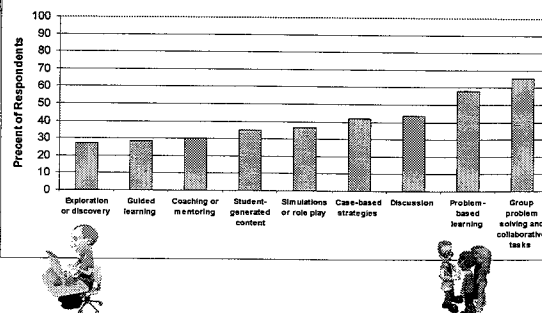- Online learning in 10 years (2013)
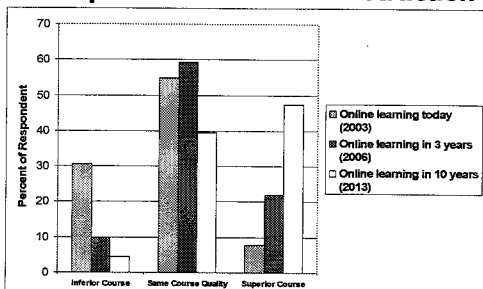
Skills needed to teach online in 2010
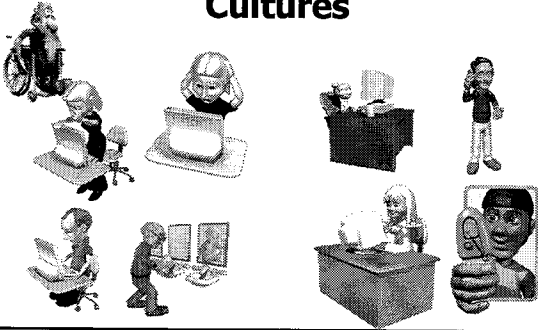

Technologies expected to most impact the delivery of online education in higher education in the next five years
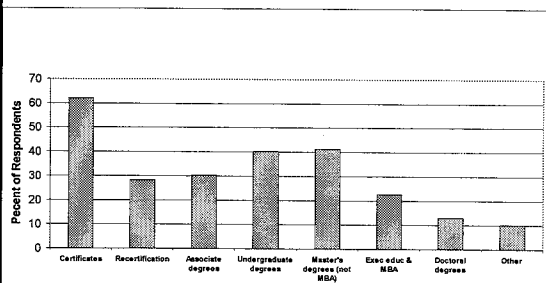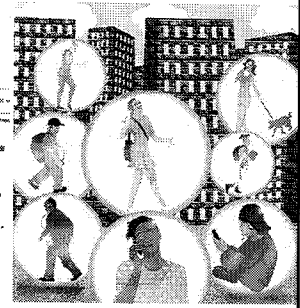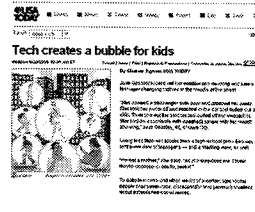

Instructional Approaches that Selected by Respondents as Among the Four Strategies Likley to Become More Widely Used

2

Part I. People, Society, and Cultures


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
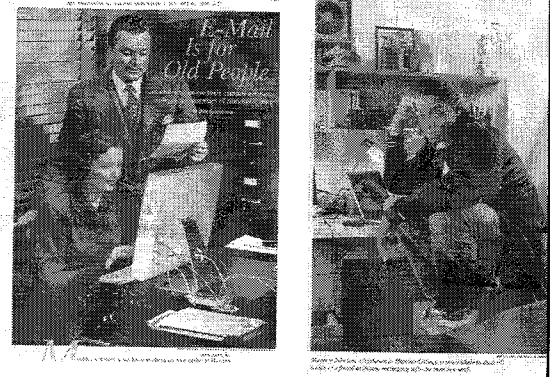
Effects of interactive multimedia in distance learning
Giti Javidi and Ehsan Sheybani, 2004, In Proceedings of the IASTED International Conference WEB-BASED EDUCATION

"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, 3006

Totally wireless on campus

3
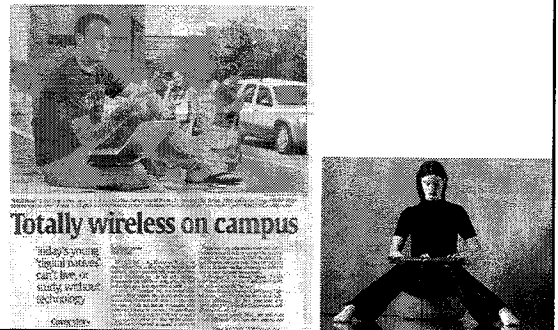
EDUCATION with Student News

Students prefer online courses of age

Classes popular with on-campus students

Friday, January 13, 2006; Posted: 3:18 p.m. EST (20:18 GMT)

(AP) — Andy Steele lives just a few blocks from the campus of Black Hills State University in Spearfish, South Dakota, so commuting to class isn't the problem. But he doesn't like lectures much, isn't a morning person, and wants time during the day to restore motorcycles.

So Steele, a full-time senior business major, has been taking as many classes as he can from the South Dakota state system's online offerings. He gets better grades and learns more, he says, and

Andy Steele takes an online course the library of Black Hills State Univer

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Training Magazine, October, 2006

ON DEMAND is IN DEMAND

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

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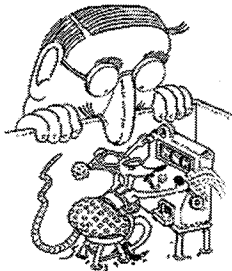
Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET

- 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.

Behaviorist Interactivity

Simulation: Neomillennial 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: Neomillennial Learner

- 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

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

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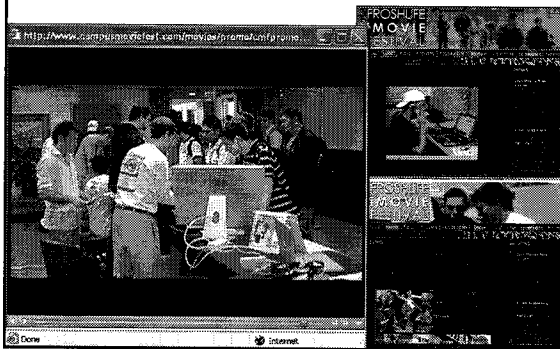
The promise of multimedia learning: Using the same instructional design methods across different media

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

Part II: Emerging Technologies
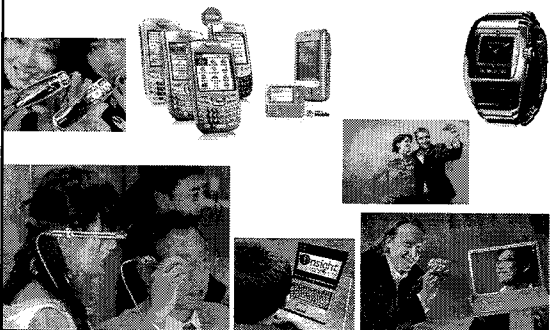
The Ten Forces that Flattened the Learning World

orld

tion (e.g.,

eduCommons
Word,

technology)
tion of

RLOT,

, Johns

The Learning World is Flat

Telegraph:
Flattening the world in 1860
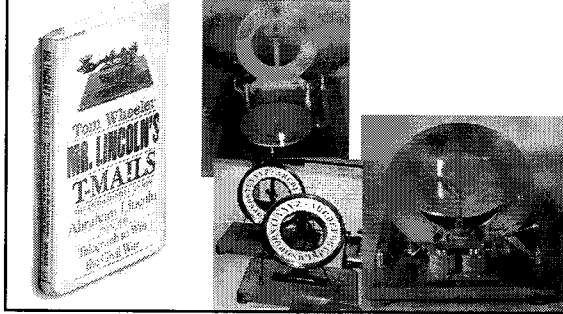
Dramatic NEW Teaching Aid...

Technology of the 1980s

Technology of the late 1990s:
Course Management Systems

Entice Students with Technology Giveaways

Next-Generation Course Management Systems, Educause Quarterly, Number 1, 2003, Colleen Carmean & Jeremy Haefner

"A very good thing has grown very large, very quickly, and few faculty are speaking or being heard in the discussions of what an ideal CMS might look like in maturity."

"Difficult choices lie ahead both for CMS vendors and for institutions of higher learning."

Sakai Project

Accessible Technology

The project aims to build peer-to-peer communications

Negroponte says the new laptop is designed to be kid-friendly

The CM1: Taking technology to the developing world
A revolution in a laptop
By Greg Norman
Sunday 13 August 2006, 18:49
Makka Time, 15:49 GMT

OLPC aims to turn the tide of urban poverty

Hot Trend: Mobile Technology

Work away from work gets easier with technology

All learning in one's own hands?

Wired for safety, late-night snacks

DePauw University

Wireless Technology

MOST (UN)WIRED SCHOOLS?

CNET and U.S. News and World Report got the top 50 universities' tech specs and asked them which computers they recommend to students and faculty.

Handheld Computing

Skype: Online Phone Calls

Collaborative Tools
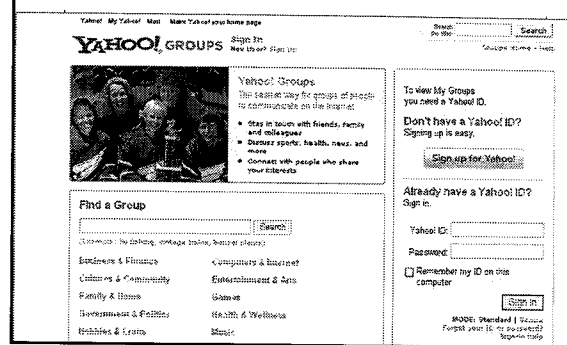
Social Networking Software
(Web 2.0)

Blogging Questions

1. Who has a blog? Any for a specific class?
2. Who regularly reads other people's blogs?
3. Who assigns blogging tasks?
4. Who has created a video blog?
5. Who thinks it is an utter waste of time to blog?

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

Vlogging (Video Blogging)
e.g., Andy Calvin's Waste of Bandwidth

8
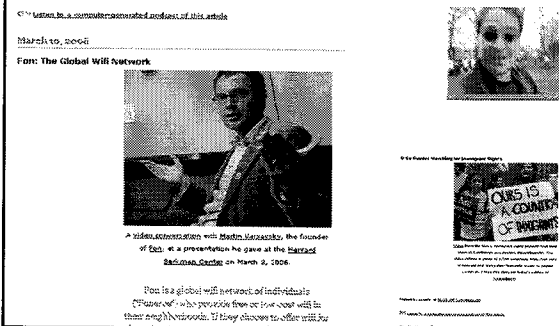
Adventure Blogging
(Ben Saunders, Mark Fennell)

Wikis

Wikibook Creation and Collaboration

Stanford Debuts Wiki of All Things Stanford
October 10, 2006
Campus Technology

Podcasting, Webcasting, and Coursecasting
(Adam Curry; www.dailysourcecode.com)

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

Podcasting

The quality of some of the podcasts I have listened to is certainly as good as many supposedly professional radio stations

---

Brandon Hall, Chief Learning Officer Magazine, July 2006

"Podcasts provide a way to distribute an audio or video episode via the Internet for playback at any time on any MP3 device or PC. Podcasts allow training in the form of event capture, new product information, sales tips, orientation, etc. to be delivered on a just-in-time, just-enough basis to anyone anywhere."

Learning TRENDS by Elliott Masie - September 18, 2006.
#402 - Updates on Learning, Business & Technology.
52,889 Readers - http://www.masie.com - The MASIE Center.

Fingertip Knowledge Podcast & Transcript:
One of my focus points these days is Fingertip Knowledge. You and I and most of our colleagues are increasingly using search engines, from Google to Corporate Intranets, to "walk" our way to the information or knowledge that we need.

Podcast (and Transcript) about the implications of Fingertip Knowledge and the Learning Field:
- http://www.learning2006.com/university/
  (Duration: 20 Minutes)

Coursecasting: Purdue and IU

Podcasting and Coursecasting
(Adam Curry; www.dailysourcecode.com)

"Just the word 'podcast' scares a lot of teachers away," Ms. Schrock said. "There are a lot of misconceptions."
"All you need is a computer, access to the Internet and a microphone that you can buy at Toys 'R' Us," Mr. Warlick said. "I listen to podcasts on my computer." (NY Times, Jan 25, 2006)

Language Learning
(ChinesePod—learn Mandarin)

Jenny Zhu

Educational Applications of Podcasting

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

Museum of Online Museums
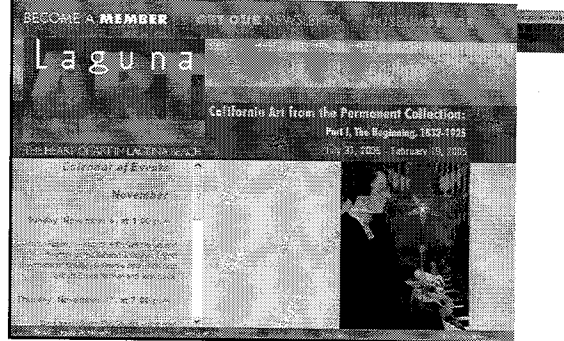
Connections Growth

>3500 modules (3-5 pages)
>180 courses (October 2006)
multiple languages
engineering, computer science, nanotech, physics, statistics, math, history, music, bio-diversity, botany, bio-info, IP, BRIT, UNESCO, UN, Sigma Xi, ...
from authors *worldwide*

Usage September 2006
17 million hits
1.2m page views
520k unique users
from 157 countries

Open Source Courseware
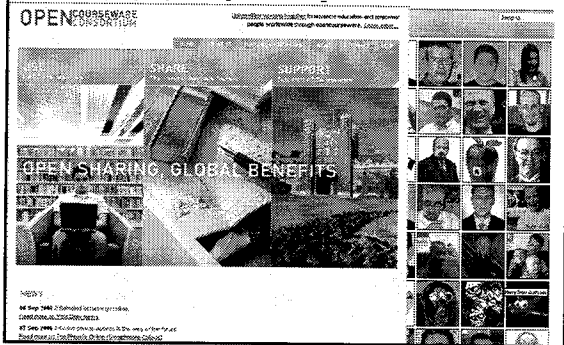
Open CourseWare
Tufts OpenCourseWare Project

Tufts OpenCourseWare

IDP200 Pathophysiology of Infectious Diseases, Fall 2004/2005
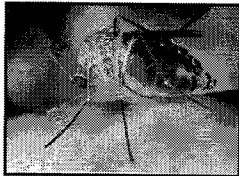
Vietnam Fulbright Economics OCW

Sharing Questions (future)

- How will such learning objects of today be viewed in 100 or 200 years?
- What new technologies will emerge and be used for knowledge sharing?
- Will online sharing become expected of all faculty members around the planet?
- If so, how will that change the face of higher education?
- What collaborations are possible between corporate world and OOPS, OCW, MERLOT, etc.?

Blended Learning

Future Directions of Blended Learning
(Bonk, Kim, & Zeng, 2006, Chapter 39)

Percent of Student Learning that is Blended

Emergence of Blended Learning Systems in Higher Ed

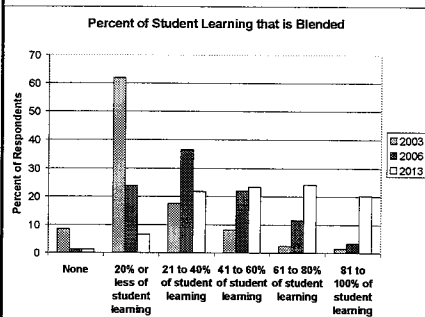In 2002 the President of Pennsylvania State University said that the convergence between online and residential instruction was "the single-greatest unrecognized trend in higher education today."

Young, J. R. (2002, March 22). 'Hybrid' teaching seeks to end the divide between traditional and online instruction. *Chronicle of Higher Education,* pp. A33.

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)
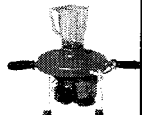
The Sloan Consortium
(2003). Sizing the Opportunity: The Quality and Extent of Online Education in the U.S., 2002 and 2003
http://www.sloan-c.org/resources/sizing_opportunity.pdf

- **Traditional: 0% online technology**
  - (all content in writing or orally)
- **Web facilitated: 1 to 29% online**
  - (Web syllabus or tasks supplemental)
- **Blended/Hybrid: 30-79% of content is delivered online & some FTF meetings**
- **Online: 80+% of content is online**

Harvey Singh (2006)

Blending Learning and Work 477

FIGURE 34.1. PAST, PRESENT, AND FUTURE
OF BLENDED LEARNING.

Historical Emergence of BL
(Graham, 2006)

Frameworks and Models of Blended Learning...

Models of Blending

Blending occurs at the following four levels:

- Activity Level
- Course Level — Instructor stakeholders
- Program Level
- Institutional Level — Administrator stakeholders
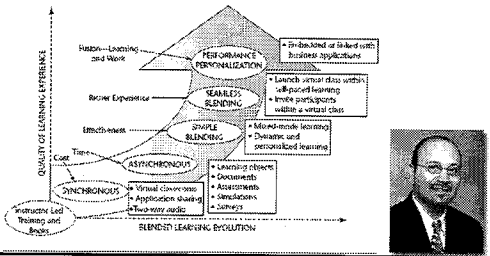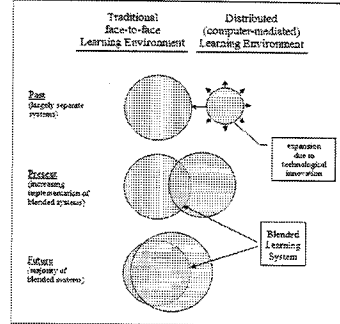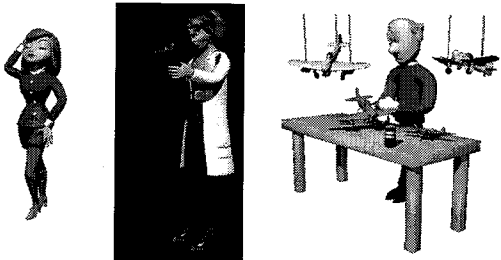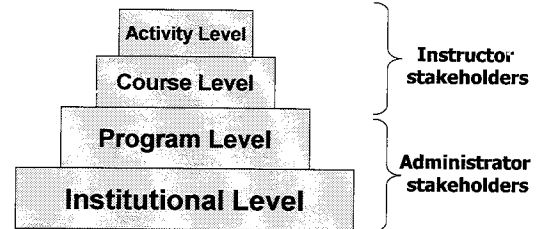
AMA Special Report, Blended Learning Opportunities
Alison Rossett (2006)

Table 1. What Might Go in the Blend

Live face-to-face (formal)	Live face-to-face (informal)
• Instructor-led classroom (F2F)	• Collegial relationships
• Workshops	• Work teams
• Coaching, mentoring	• Apprenticeships
• On-the-job (OTJ) training	
• Work-based problems	

Virtual collaboration/asynchronous	Virtual collaboration/asynchronous
• Live e-learning classes	• Email
• E-coaching, e-mentoring	• Online communities and discussion boards
• Instant messaging, SMS	• Listservs
	• Blogs, wikis, podcasts

| Self-paced learning (print, CD/DVD, electronic, wireless)	Performance support
• Online modules	• Online help systems
• Online resource links	• Print job aids
• Simulations and scenarios	• Online knowledge databases
• Assessments and self-assessments	• Documentation
• Workbooks, readings	• Performance support tools

Adapted from (Rossett, Douglis & Frazee, 2003, July)

AMA Special Report, Blended Learning Opportunities
### Alison Rossett (2006)

1. **Anchor Blend: Start FTF, then online**
2. **Bookend Blend: Three part: e.g., online preassessments, then FTF, and then online post assessments**
3. **Field Blend: Assets, resources, and choices including perhaps FTF**

13

Course-Level Blend: Using CMS to blend distance and F2F learners
(Rogers, Graham, et al., 2003)
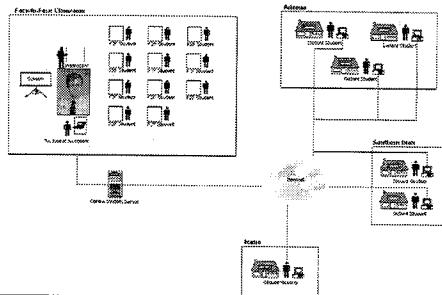
Specific Learning Elements
An Learning Ecology from Sun Microsystems
(Wenger & Ferguson, 2006)
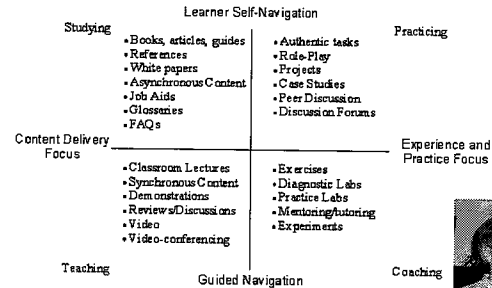
National University
Department of Teacher Education
(Reynolds & Greiner, 2006)

Year / Students Enrolled in Online Classes	FY 2000		FY 2001		FY 2002		FY 2003		FY 2004	
	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
In At Least One	4,692	18%	7,684	29%	10,352	39%	10,070	37%	11,366	45%
In A Majority	763	3%	1,321	5%	6,326	24%	4,852	18%	7,260	29%
In All	332	1%	792	3%	2,494	9%	1,314	5%	3,067	12%
Total Active Students	25,436		26,419		26,955		26,359		25,704	

Enhancing Blends
(Univ of Glamorgan, Wales, 2006)
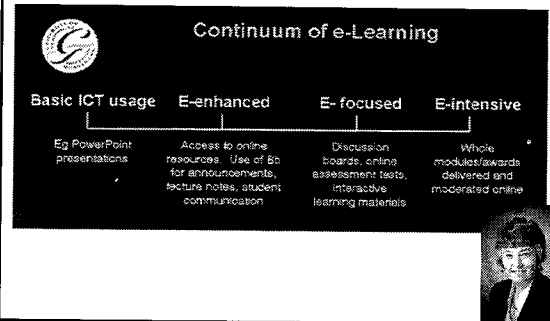
10 Predictions for Blended Learning

- From: Bonk, C. J., & Kim, K. J. (in press). Future directions of blended learning in higher education and workplace learning settings. To appear in C. J. Bonk & C. R. Graham (Eds.). *Handbook of blended learning: Global Perspectives, local designs.* San Francisco, CA: Pfeiffer Publishing.

Blended Learning Trend #1. Mobile Blended Learning

- Increasing use of mobile and handheld will create rich and exciting new avenues for blended learning.
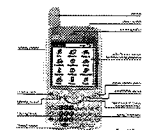
Blended Learning Trend #2.
Greater Visualization, Individualization, and Hands-on Learning

- **Blended learning environments will increasingly become individualized; in particular, emphasizing visual and hands-on activities.**

Blended Learning Trend #3.
Self-Determined Blended Learning

- Blended learning will foster greater student responsibility for learning. Decisions about the type and format of blended learning will be made by students instead of instructors or instructional designers. Learners will be designing their own programs and degrees.

Blended Learning Trend #4.
Increased Connectedness, Community, and Collaboration

- Blended learning will open new avenues for collaboration, community building, and global connectedness. It will become used as a tool for global understanding and appreciation.

Blended Learning Trend #5.
Increased Authenticity and On-Demand Learning

- Blended learning will focus on authenticity and real world experiences to supplement, extend, enhance, and replace formal learning. As this occurs, blended learning will fuel advancements in the creation and use of online case-learning, scenarios, simulations and role play, and problem-based learning.

Blended Learning Trend #6.
Linking Work and Learning

- As blended learning proliferates, the lines between workplace learning and formal learning will increasingly blur. Higher education degrees will have credits from the workplace and even credit for work performed.

Blended Learning Trend #7.
Changed Calendaring

- The calendar system or time scheduling of learning will be less appropriate and predefinable.

Blended Learning Trend #8. Blended Learning Course Designations

- Courses and programs will be increasingly designated as blended learning paths or options.

Blended Learning Trend #9. Changed Instructor Roles

- The role of an instructor or trainer in a blended environment will shift to one of mentor, coach, and counselor.

Blended Learning Trend #10. The Emergence of Blended Learning Specialists

- There will emerge specialist teaching certificates, degree programs, and resources or portals related to blended learning courses and programs.

10 Implications for Blended Learning in Higher Education

Implication #1. Faculty are More Mobile

- Faculty can deliver instruction and participate in class from more locations.

Implication #2. Student Expectations Rise

- Students will be used to having more choices and selections so their expectations will rise.

Implication #3.
More Corporate University Partnerships

- Create more opportunities for learning at multiple locations; and hence, more training partnerships.

Implication #4.
Changes Strategic Planning for Technology

- Technology plans must more directly address instructional technology options and not focus simply on administrative systems.

Implication #5.
Courses will Increasingly Become Modular

- Blending of face-to-face and online technologies will segment pieces of content and lead for more interoperable modules.

Implication #6.
Less Predefined Schedules

- When faculty are teaching and students are learning is less clear. New norms and measurement scales will emerge.

Implication #7.
Classroom Costs will Rise and Fall

- There will be increases in technologies made available for instruction but decreases in facilities needed.

Implication #8.
Customized Training and Education

- There will be increasing focus on providing the learner with what he or she needs and wants.

Implication #9.
Jump Starts Faculty into Online and Allows Others to Resist

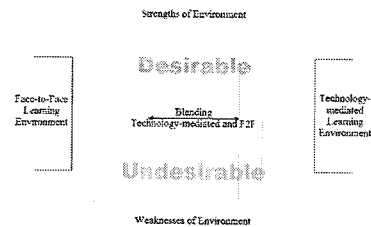- Some faculty will try out e-learning in a small, supplemental way and have success.

Implication #10.
Scheduling Courses Becomes More Complex

- The more course options that there are, the more complex course scheduling becomes.

Six Important Challenges and Issues

1. The role of live interaction
2. Role of learner choice and self regulation
3. Models for support and training
4. Digital Divide
5. Cultural adaptation
6. Finding balance between innovation (creativity) and production (need for cost reduction)

A Challenge for the Future

Strengths of Environment

Desirable

| Face-to-Face Learning Environment | Blending Technology-mediated and F2F | Technology-mediated Learning Environment |

Undesirable

Weaknesses of Environment

One of our challenges is to determine the **strengths and weaknesses** of the two archetypal environments and use those to develop solutions that really do take advantage of the "best of both worlds."

A Final Quote:
It's a long, long road...
With many a winding turn.
That leads us to who knows where?...

It's a long, long road
From which there is no return
While we're on the way to there
Why not share

(The Hollies, 1969; He Ain't Heavy, He's My Brother; B. Scott - B. Russell)

Ok...it is the end...or is it?