Blended Web Learning: Advantages, Disadvantages, and Plenty of Examples

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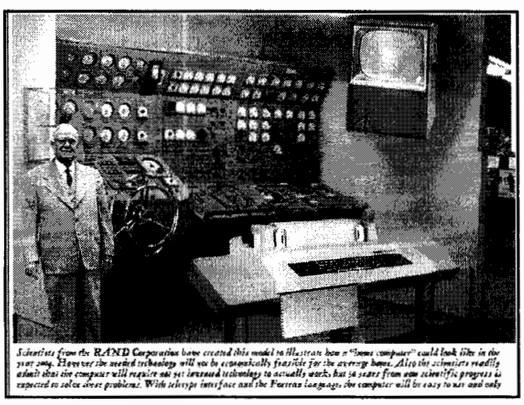
Who would have predicted the emergence of blended learning 50 years ago?

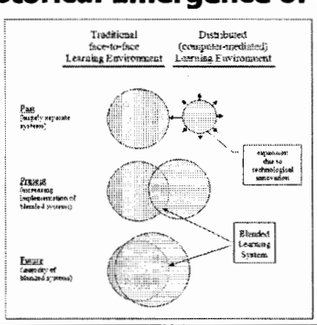
(see 1950s Photo of Rand Corporation Prediction of the home computer in 2004)

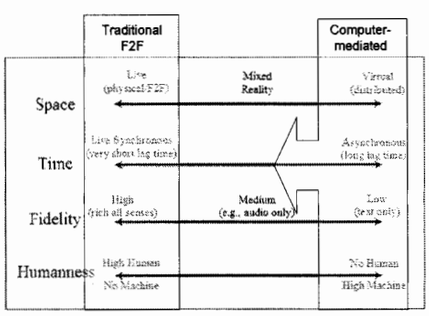


Scientists from the RAND Corporation have created this model to illustrate how a "home computer" could look like in the year 2004. However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require six yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems. With teletype interface and the Fortran language, the computer will be easy to use and only

Learning has become blended!

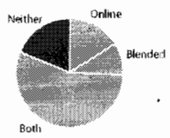
Historical Emergence of BL





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



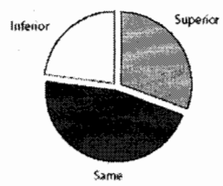
WHAT TYPES OF COURSES ARE OFFERED?

	Public	Private not-for-profit	Private for-profit	Total
Both Online and Blended	80.2%	36.7%	21.2%	55.6%
Online Only	12.5%	17.8%	73.7%	16.0%
Blended Only	3.8%	17.1%	6.6%	9.6%
Neither	3.4%	28.4%	48.5%	18.8%

The Sloan Consortium

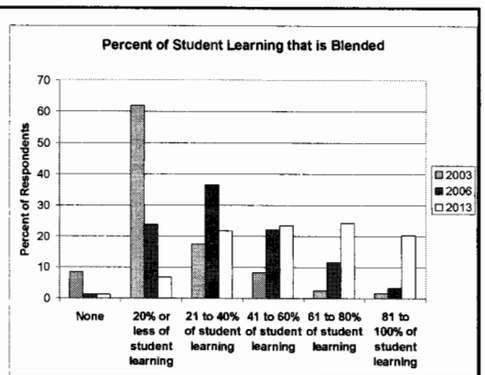
(2004). Entering the Mainstream: The Quality and Extent of Online Education in the US, 2003 and 2004
http://www.sloan-c.org/resources/survey.asp

LEARNING OUTCOMES ONLINE EDUCATION IN 3 YEARS



Blended Learning

- **What is blended learning?**
- **What is being blended?**
- **How much to blend?**
- **Why blend?**
- **How to blend?**



Blended Learning

Why the term blended?

(Osguthorpe & Graham, 2003, Blended Learning Environments: Definitions and Directions)

- **"Hybrid is the interbreeding of two different species of animals or plants to create a new species" (i.e., a mongrel)**
- **"Blended focuses on the mingling together in ways that lead to a well-balanced combination" (i.e., to mix)**

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.

Emergence of Blended Learning Systems in Higher Ed

The editor of The Journal of Asynchronous Learning Networks predicted a dramatic increase in hybrid (i.e., blended) courses . . . possibly to include as many as 80-90% of all courses.

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

Blended Learning Definitions

The three most commonly cited definitions include:

1. **BL = combining instructional modalities (or delivery media)**
2. **BL = combining instructional methods**
3. **BL = combining online and F2F instruction**

What is being blended?

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

- **Instructional modalities/media (Web, instructor-led, simulations, documents)**
- **Instructional methods (pedagogies—behavioral, constructivist)**
- **Online and face-to-face instruction**
- **Training and job tasks + class**
- **Synchronous & asynchronous instruction**
- **Live and self-paced training**

Blended Learning, Margaret Driscoll, e-Learning, March 2002

Four Different Concepts:

- **To combine or mix modes of technology (e.g., self-paced and streaming video)**
- **To combine various pedagogy**
- **To combine forms of instructional technology with instructor-led training**
- **To combine instructional technology with actual job tasks**

Definitional Problems: Too Broad

Our Definition:

Blended learning systems combine face-to-face instruction with computer-mediated instruction.

- **More inclusive than just online technologies).**
- **Emphasizes the central role of computer-based technologies in BL.**
- **This definition is consistent with the historical emergence of the concept of blended learning.**

Why Blend? Three Key Reasons

1. **Improved Pedagogy**
   - Interactive vs. Transmissive environments
   - Authenticity integration into work
2. **Increased Access/Flexibility**
   - Reduced seat time courses – UCF M courses
3. **Increased Cost Effectiveness**
   - Corporate: ROI – IBM 47:1, Avaya, Microsoft
   - Higher Ed: PEW Grants

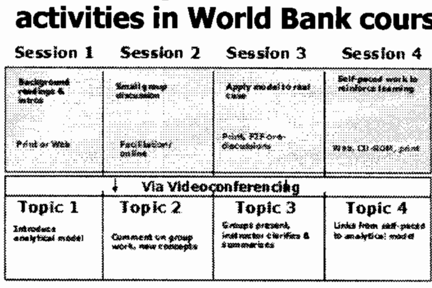
Models of Blending

Blending occurs at the following four levels:

1. The activity level (e.g., start debate in class and complete it online)
2. The course level
3. The program level
4. The institutional level

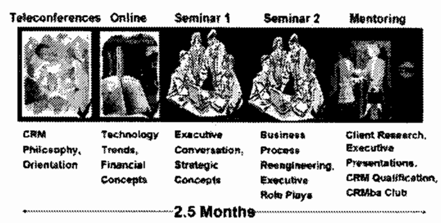
2. Course-level Blends Jagannathan, S. (in press).

- **Alternating F2F and e-learning activities in World Bank course.**



3. Program-level Blending

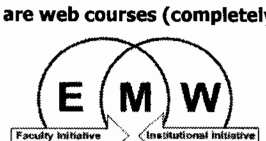
- **Prescriptive blends: Programs where blend is the same for all; e.g., Avaya's Executive Solutions (see figure)**
- **Choice blends: blend chosen by student.**



Institutional-level Blending

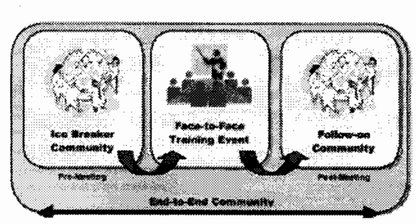
Example 1: University of Central Florida; Students at the University of Central Florida have 3 enrollment options (Hartman et al., 1999). They can enroll in:

- **E courses are technology enhanced courses**
- **M courses are blended courses with reduced seat time**
- **W courses are web courses (completely online)**



See: Dziuban, C., Hartman, J., Juge, F., Moskal, P., & Sorg, S. (in press). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs*. San Fransisco, CA: Pfeiffer Publishing.

A Blended Model: Corporate



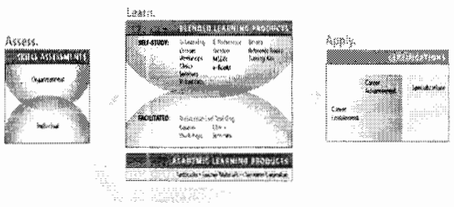
Soren Kaplan, Ph.D.
Managing Director, iCohere, Strategies for Collaborative Learning

Framework for organizational development through training

Assess, Learn, and Apply

(Copyright Microsoft, Ziob & Mosher, in press; Handbook of Blended Learning)

Microsoft Products and Services for Lifelong Learning



Blended Learning Form Factors

(copyright Microsoft, Ziob & Mosher, in press; Handbook of Blended Learning Environments

Live instructor-led	Self-paced learning	Tools for learning communities
▪Traditional classroom ▪Onsite engagement ▪Virtual online classroom ▪Live video via satellite or videoconferencing ▪Online coaching/ mentoring	▪Instructor-led classroom via e-mail ▪Online or computer-based training (CBT) ▪Self-study guides, manuals, texts ▪Online resources and databases	▪Chat ▪Instant messaging (IM) ▪Newsgroups and forums ▪Collaboration

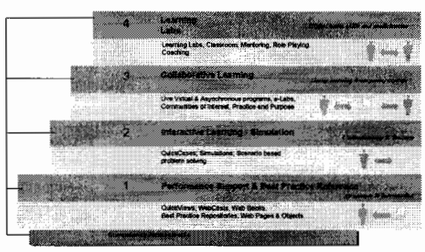
Blended Learning Scenario

(copyright Microsoft, Ziob & Mosher, in press; Handbook of Blended Learning Environments

Pre Class	Day 1	Day 2	Day 3	Day 4	Day 5	Post Class
Self-study prep	In classroom	Virtual class	e-Learning	Virtual class	In classroom	Community newsgroups

The IBM Four Tier Learning Model (copyright Microsoft)

Blending Learning for Business Impact – IBM's case for learning success, *In press, Handbook of Blended Learning, Nancy Lewis, Vice President, On Demand Learning*



Categories of Blends

A. Enabling Blends	**Enabling blends primarily focus on addressing issues of access and convenience; provide similar learning experiences.**
B. Enhancing Blends	**Enhancing blends allow for incremental changes to the pedagogy; additional or supplementary online resources.**
C. Transforming Blends	**Transforming blends are blends that allow for a radical transformation of the pedagogy and learner construction of knowledge.**

B. Enhancing Blends

(New Zealand and Wales)

University of Waikato, New Zealand

– **Model for enhancing F2F courses includes:**

- **Fully online** - students can complete qualifications without coming onto the campus
- **Mostly online** - there is a mix of online and some on-campus work in the qualification
- **Somewhat online** - there is an online component for on-campus students
- **Supported online** - courses are taught in the traditional lecture/tutorial mode, supported by ded through the online learning or rsity schools' document management

Graham, Ure, & Allen (2003, July)
Blended Learning Environments
A Lit Review/Proposed Research Agenda

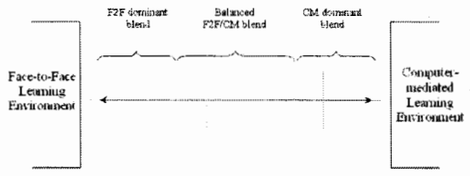


Figure 2: Blended learning environments combine f2f and computer-mediated instruction

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

Proportion of content delivered online	Type of course	Typical description
0%	Traditional	Course with no online technology used - content is delivered in writing or orally.
1 to 29%	Web facilitated	Course which uses web-based technology to facilitate what is essentially a face-to-face course. Might use Blackboard or WebCT to post the syllabus and assignments, for example.
30 to 79%	Blended/Hybrid	Course that is a blend of the online and face-to-face course. Substantial proportion of the content is delivered online, typically uses online discussions, typically has some face-to-face meetings
80+%	Online	A course where the vast bulk of the content is delivered online. Typically has no face-to-face meetings.

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

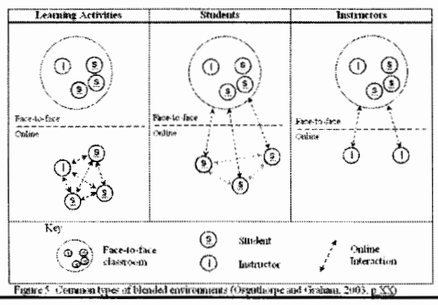


Figure 5. Common types of blended environments (Osguthorpe and Graham, 2003, p.XX)

What are the advantages (and disadvantages) of blended learning?

Blended Learning Advantages

1. **Increased Learning (better papers, higher scores)**
2. **More effective pedagogy and interaction**
3. **Course access at one's convenience and flexible completion (e.g., multiple ways to meet course objectives)**
4. **Reduction in physical class or space needs, commuting, parking**
5. **Increased opportunities for human interaction, communication, & contact among students**
6. **Introverts participate more**

Hybrid Classes: Maximizing Resources and Student Learning
http://courses.durhamtech.edu/tlc/www/html/Special_Feature/hybridclasses.htm

- **Approximates real world/collaboration**
- **Students learned more, wrote better papers, performed better on exams, produced higher quality projects**
- **Students engaged in doing, rather than just experiencing or reading**
- **Students can review prerecorded lectures and access course notes/materials**
- **Presents materials in range of formats**
- **Lower withdrawal rates**

Hybrid Classes: Maximizing Resources and Student Learning
http://courses.durhamtech.edu/tlc/www/html/Special_Feature/hybridclasses.htm

- Develops/enhances time management
- Critical thinking & problem-solving skills
- Enhances computer skills
- Promotes self-directed learning
- Part of writing-intensive courses
- Less traditional class time constraints
- Integrates out-of-class with in-class

Forms of Blended Learning for Authentic Tasks (Oliver, Herrington, & Reeves, in press; Handbook of Blended Learning)

- Real World—email, discussion, chats
- Ill-structured problem/tasks—meet face to face, online supports
- Different perspectives—discussion, email, expert chats, etc.
- Collaboration—email, discussion boards, blogs, collab tools, FTF
- Reflection—discussion boards

Blended Learning Disadvantages

1. Procrastination (trouble managing time and requirements)
2. Problems with technology at the beginning (instructor tries too much)
3. Can be overwhelming or too novel
4. Poor integration or planning
5. Resistance to change
6. Good ideas but lack of time, money, & support

Ok, Million Dollar Question: Where is blended learning beneficial?

Where is Blended Beneficial?
http://www.center.rpi.edu/PewGrant/ProjDesc.html

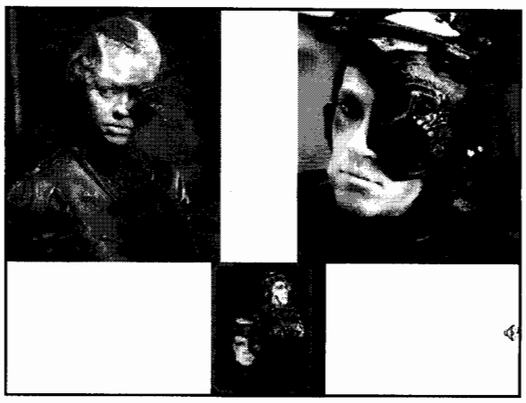
- Large Classes (spanish, intro psych, algebra, elementary statistics, biology)
- Classes with certification
- Classes with need for standardization
- Supplementary classes
- New requirements for a profession
- Massive and widespread audience
- Writing intensive classes

Examples of Blended Learning, Margaret Driscoll, e-Learning, March 2002

- Put assessments/reviews online
- Follow-up in community of practice
- Put reference materials on Web
- Deliver pre-work online
- Provide office hours online
- Use mentoring/coaching tool
- Access experts live online
- Use e-mail and instant messaging

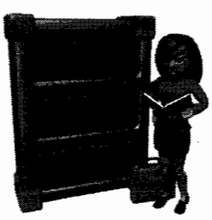
What can we say about blended learning then???

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

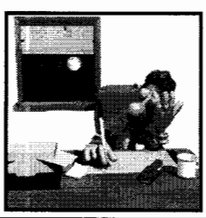


Assimilate…

Research Results?



Ok, who is falling asleep at the mere mention of the phrase "research?"



Did he say chocolate? Who wants some chocolate???

Brains Before and After E-learning

Before

After

And when use synchronous and asynchronous tools

Basic Distance Learning Finding?

- **Research since 1928 shows that DL students perform as well as their counterparts in a traditional classroom setting.**

Per: Russell, 1999, The No Significant Difference Phenomenon (5th Edition), NCSU, based on 355 research reports.

http://cuda.teleeducation.nb.ca/nosignificantdifference/

Online Learning Research Problems

(National Center for Education Statistics, 1999; Phipps & Merisotos, 1999; Wisher et al., 1999).

- **Anecdotal evidence; minimal theory.**
- **Questionable validity of tests.**
- **Lack of control group.**
- **Hard to compare given different assessment tools and domains.**
- **Fails to explain why the drop-out rates of distance learners are higher.**
- **Does not relate learning styles to different technologies or focus on interaction of multiple technologies.**

Fully Online Courses Learning Improved...(review by Chang, 2003)

- **Online outperformed peers in histology (anatomy—plant and animal tissues under microscope) (Shoenfeld-Tacher et al., 2001).**
- **Intro to Psych: Lecture vs. Online; Online performed better on midterms (Maki, 2000).**
- **Web enhancements raised exam performance, grades, & attitudes toward economics (Agarwal & Day, 1998).**
- **Online business communications students performed better on final exams than on campus (Tucker, 2000).**

Research Rovai & Jordan (2004, August).

Blended Learning and Sense of Community, International Journal of Research in Open and Distance Learning

- **Study of 68 graduate students in 3 graduate education courses**
- **All Full-time K-12 teachers**
- **Small urban university in Virginia**
- **Three different classes (educational collab/consultation (FTF), disabled students (blended—14 FTF hours), and ID courses (online--Blackboard).**
- **Blended courses foster more of a sense of community than traditional and fully online course (pretest-posttest design)**

Blended Learning Environments A Review of the Research Literature

Charles R. Graham, Stephanie Allen, Donna Ure, BYU
Encyclopedia of Information Science & Tech I-V. Hershey, PA: Idea Group.

- **University of Central Florida** – Students at the University of Central Florida have 3 enrollment options (Hartman et al., 1999). They can enroll in:
  - **E courses – web enhanced courses** that don't have reduced seat time but use the internet to enhance classroom activities.
  - **M courses – reduced seat time courses** that replaced traditional F2F sessions with asynchronous learning network (ALN) activities
  - **W courses – fully web-based courses** that have no required class meeting but sometimes have optional pre-course orientation and/or F2F final examination

BLENDED LEARNING AT CANADIAN UNIVERSITIES: ISSUES AND PRACTICES

Ronald D. Owston, York Univ, Randy Garrison, Univ of Calgary, Kathryn Cook, York University (In press, HOBLE Book)

- **all 8 members participated**
- **second phase of COHERE research initiative**
- **case study candidates proposed by COHERE members themselves**
- **tried to vary disciplines for final selections**
- **instructors interviewed by telephone, and their students completed online survey**

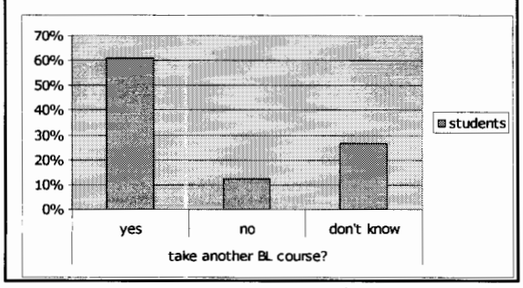
http://ctlsilhouette.wsu.edu/surveys/ZS24659

Case study descriptions and survey response rates (Owston, in press HOBLE book)

university	course description	number of responses	number of students enrolled	approximate survey response rate
Eagle	1st year foundations of computers	169	239	70%
Nuthatch	3rd year gender studies	15	16	94%
Heron	1st year chemistry	320	1,764	18%
Redwing	1st year communications and teamwork	55	380	14%
Albatross	3rd year nutrition	26	120	21%
Yellowlegs	3rd year social work practicum	10	18	55%
Kingfisher	3rd year communications in organizations	128	159	66%
Oriole	4th year plant biology	18	18	100%
Total		**741**	**2,714**	**27%**

Take another BL course?

(no statistically significant differences among universities)
(Owston, in press HOBLE book)



Online Pedagogy

- **online discussions primary e-learning component for 5 courses (most worth 20% of mark)**
- **online labs and online quizzes also used**
- **large classes avoided online discussions, yet successful implementation in one large enrollment class (Eagle U)**
- **another successful implementation of online discussions demonstrated not necessary to mark individual online contributions (Redwing U)**
- **higher order thinking skills encouraged**
- **instructors get to know students better with BL**

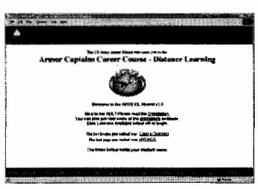
Conclusions

BLENDED LEARNING AT CANADIAN UNIVERSITIES: ISSUES AND PRACTICES

Ronald D. Owston, York Univ, Randy Garrison, Univ of Calgary, Kathryn Cook, York Univ

- **pragmatic advantages of BL format**
- **interaction a key ingredient for success**
- **more time and effort required but is this result of ↑ critical thinking?**
- **online discussions can work in large classes**
- **online contributions do not have to be individually graded to be meaningful**
- **institutions need clear policies and support for further development of BL courses**

Study #1: Synchronous Chat Analysis (explored learner online problem solving)



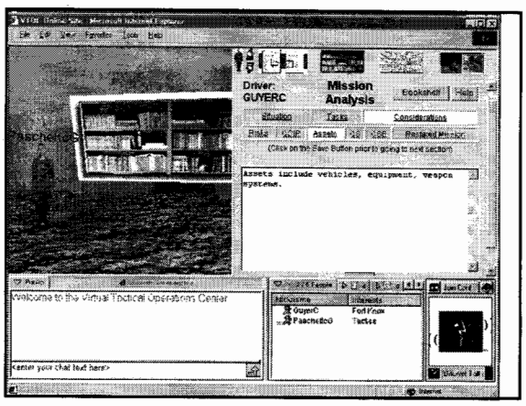
Orvis, K. L., Wisher, R. A., Bonk, C. J., & Olson, T. (2002). Problem-solving exercises in military training: Communication patterns during synchronous Web-based instructions. *Computers in Human Behavior.*

Three Phases of AC3-DL

I. **Asynchronous Phase:** 240 hours of instruction or 1 year to complete; must score 70% or better on each gate exam

II. **Synchronous Phase:** 60 hours of asynchronous and 120 hours of synchronous; Virtual Tactical Operations Center (VTOC) (7 rooms; 15 people/extension (chat, avatars, audio conferencing)

III. **Residential Phase:** 120 hours of training in 2 weeks at Fort Knox



3D Terrain Tool

The 3D terrain is a collaborative environment that does not result in a product, but, instead, allows students and instructors to "walk" the terrain and lay an overlay on the ground. Participants can click on another person's avatar, and they will see what that person sees as he makes key points about terrain.

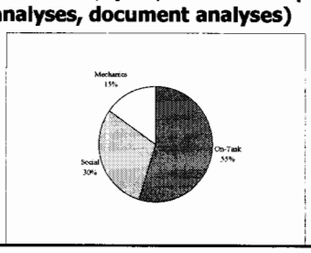
Previously Reported Results

Sanders & Burnside (2001); Sanders & Guyer (2001)

- **Completed coursework in less time than correspondence course.**
- **Positive attitudes**
- **Covered add'l content not in correspondence**
- **More likely to make decisions**
- **Develop greater sense of team identity**
- **Greater planfulness, confidence, tactical proficiency, and leadership skills.**
- **Problems encountered: time, drill time conflicts, tech problems, family responsibilities, no compensation**

Study #1. Overall frequency of social, mechanical, and on-task interactions across chat categories (6,601 chats).

(Note: conducted focus groups, interviews, q'ers, chat transcript analyses, document analyses)



On-Task Problem Solving Mayer & Wittrock (1996); Sternberg (1997)

- **"Terrain does not allow for effective maneuver of your element"**
- **"Harder to detect a liquid agent in rain"**
- **"Rain can also degrade optics on weapon systems"**
- **Remember in the BDE OPORD-the BDE CMDR wants this to occur at about this time"**

Social Interactions

- "Kids are great we made breakfast for Mom (wife)"
- "Did you go out for a run last night?"
- "Tell her I said happy mothers day"
- "3 miles in 24 mins all hills"
- "If God had meant for us to run, he wouldn't have given us tanks"

Pew Foundation, PROGRAM IN COURSE REDESIGN (Carol Twigg, August 2004 Keynote Presentation at Wisconsin DL Conference)

http://www.center.rpi.edu/PewHome.html

To encourage colleges and universities to redesign their approaches to instruction using technology to achieve cost savings as well as quality enhancements.

$6 million 30 projects

IMPROVED LEARNING OUTCOMES (Carol Twigg, August 2004 Keynote Presentation)

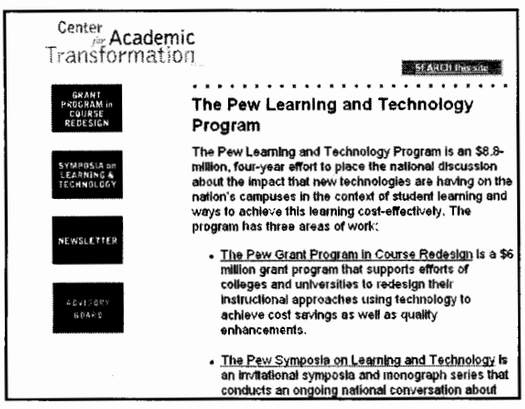
- Penn State - 68% on a content-knowledge test vs. 60%
- UB - 56% earned A- or higher vs. 37%
- CMU - scores on skill/concept tests increased by 22.8%
- Fairfield – 88% on concept retention vs. 79%
- U of Idaho – 30% earned A's vs. 20%
- UMass – 73% on tougher exams vs. 61%
- FGCU - 85% on exams vs. 72%; 75% A's and B's vs. 31%
- USM - scored a full point higher on writing assessments
- IUPUI, RCC, UCF, U of S Maine, Drexel and U of Ala - significant improvements in understanding content

25 of 30 have shown improvement; 5 have shown equal learning.

REDUCTION IN Drops, Failures, and Withdrawal RATES

(Carol Twigg, August 2004 Keynote at Wisconsin DL Conference)

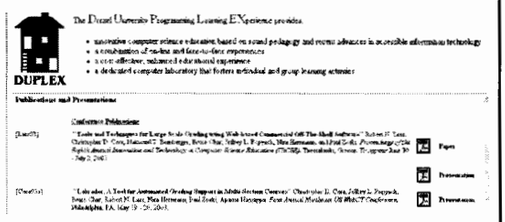
- U of Alabama – 60% to 40%
- Drexel – 51% to 38%
- Tallahassee CC – 46% to 25%
- Rio CC – 41% to 32%
- IUPUI – 39% to 25%
- UNM – 39% to 23%
- U of S Maine – 28% to 19%
- U of Iowa – 25% to 13%
- Penn State – 12% to 9.8%



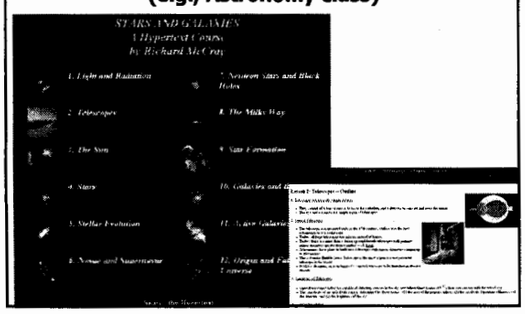
25 Blended Learning Examples

	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

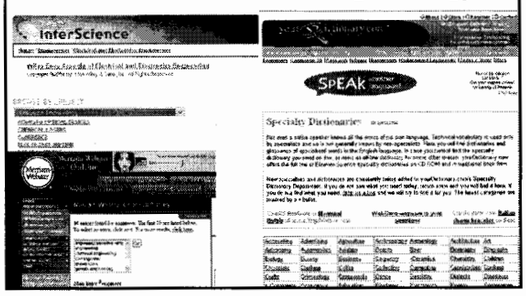
#1. Links to other papers, media, etc. (Computer Science Course; Pew project)



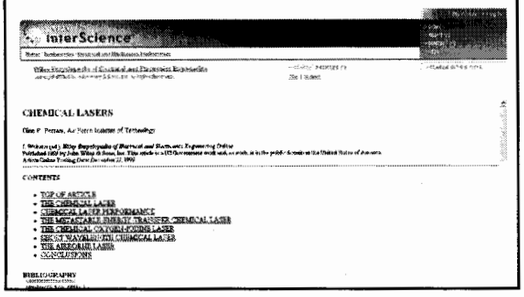
#2. Extensive External Web Links (e.g., Astronomy class)



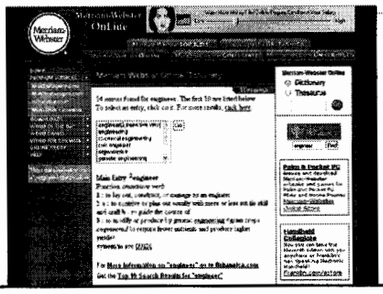
#3. Use of Online Reference Materials (e.g., Content Encyclopedia and Dictionaries on Web in Engineering)



#3. Use Content Encyclopedia on Web (e.g., Engineering)



#3. Use Content Dictionary on Web (e.g., Engineering)



#4. My Class; Discussion Forums, Surveys, Word Docs, Web Links, Presentations

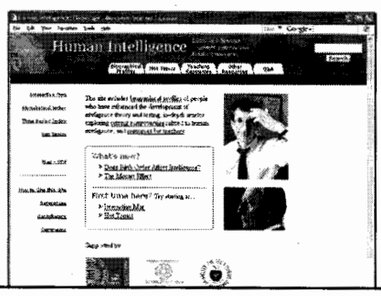
Survey: results:
Votes cast to date: 15
You have not voted

Vote choices	#	%
Yes change class from 1:00 to 5:15 so that we can walk over and attend and I will attend all of that	6	40.00%
Yes change class to 1:00 to 5:15 and I will attend most of that time	5	33.33%
Yes let's attend the talk but I can only come to class from 2:00 to 4:45	4	26.67%
No let's not go to the	0	0.00%
Not sure	0	0.00%
other	0	0.00%

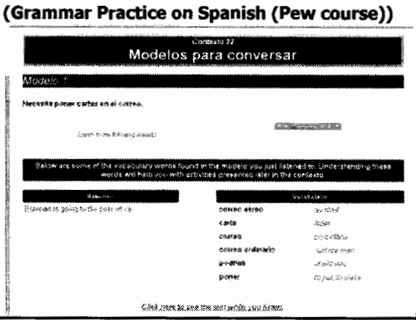
This survey closes on 10/30/03 04:56 PM.

Replies:

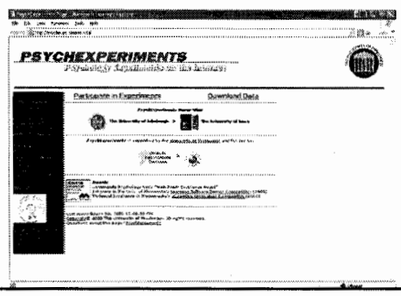
#5: Internally Built Web Links
(Human Intelligence Homepage, Jonathan Plucker, IU)



#6. Post Foreign Language Practice Exercises Online
(Grammar Practice on Spanish (Pew course))

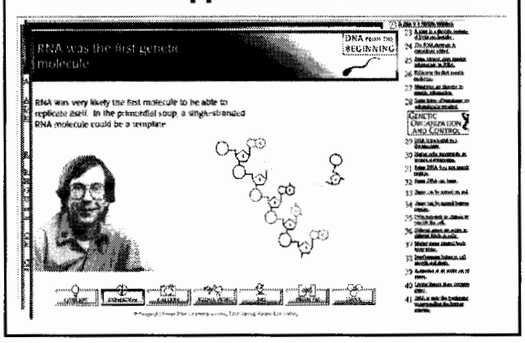


#7. Online Course Portals and Digital Libraries for Exploration Activities
(e.g., Einstein Digital Manuscript Repository, May 20, 2003)

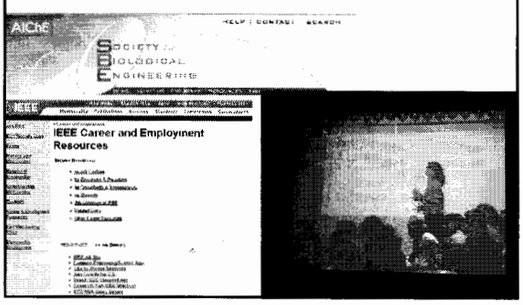


7. Online Course Portals and Digital Libraries for Exploration Activities
(e.g., MITs Open Courseware Initiative)

#8. Rich Supplemental Resources

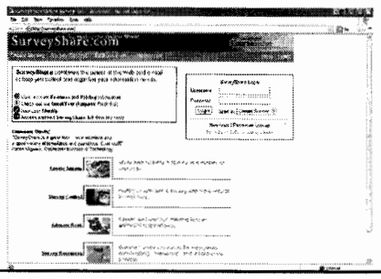


#9. Apprenticeship in Professional Devel Sites (jobs, organizations, mentors, conferences, etc.)



10. Survey Research

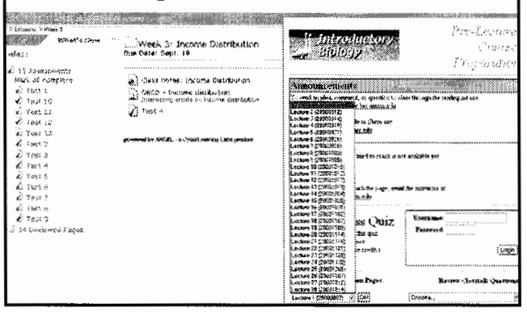
(e.g., InfoPoll, WebSurveyor, Zoomerang, SSF, SurveyShare, SurveyKey)



#11. Math Emporium of Online Tutorials and Testing (Virginia Tech, Robert Olin)

- In the Math Emporium, students can take advantage of diagnostic quizzes, an electronic hyperlinked textbook and interactive, self-paced tutorials. There are armies of tutors, GTAs and faculty in the emporium to give students personal help when they do not understand the tutorials or quizzes…Some traditional lectures by professors are also available along with help from a conventional tutor lab.

12. Preclass Exam and Short Quizzes Practice



#13. Divide Online and Class Experiences: English Classes Online

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

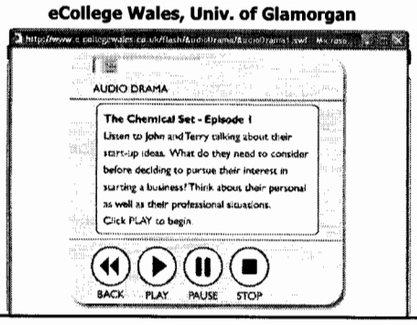
- **Freshman English at BYU: Students are required to meet F2F once a week instead of three times a week. Online modules provide writing instruction and teaching assistants use online and F2F contact to provide feedback and guidance on writing** (Waddoups et al., 2003).

#14. CPA Exam Review (June 14, 2003) and Web Videos in Accounting (July, 2003)

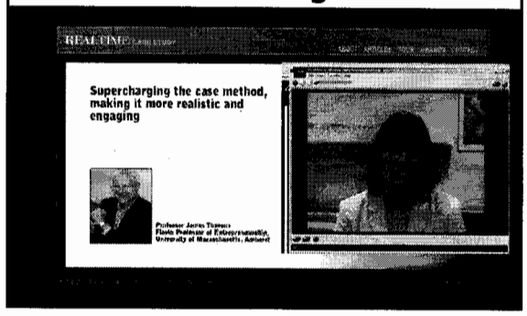
- **Texas A&M University–Corpus Christi combines CPA courseware with bi-monthly class meetings to prep for CPA Exam. (study text, proficiency questions, electronic flashcards and practice exams, scheduled assignments, goals, online grading, progress reports, tailored discussion groups, and personalized assistance from leading professors at the nation's top accounting schools.)**

#15. Business Class Simulated Boardroom Chat

eCollege Wales, Univ. of Glamorgan

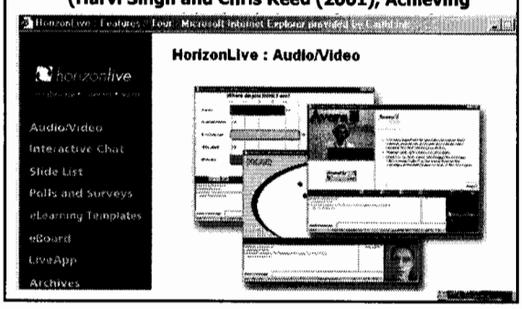


#16. Use Real-Time Case Learning



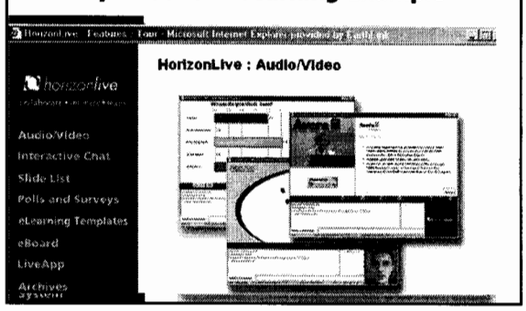
Example #17: Webinar: Web for Live Mentoring: MBA Program

(Harvi Singh and Chris Reed (2001), Achieving

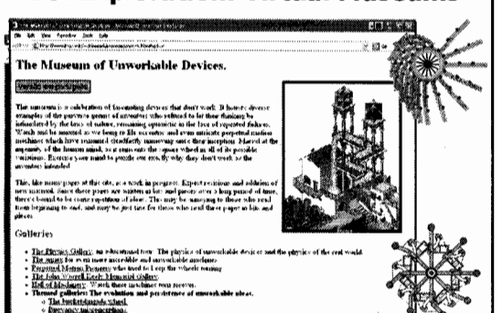


#17. Webinar

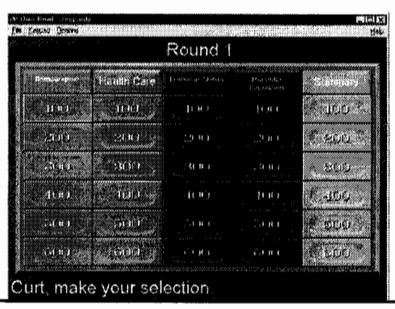
Synchronous Learning Example



#18. Exploration: Virtual Museums

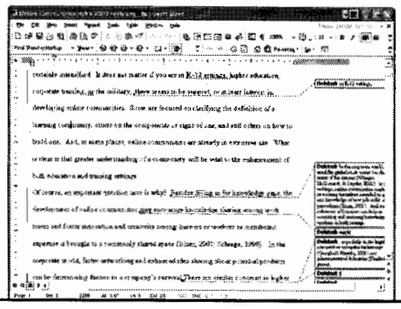


#19. Web Games to Learn Content

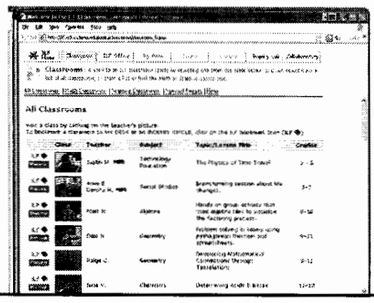


#20. Electronic Guests & Mentoring

#21. Online Collaboration and Editing



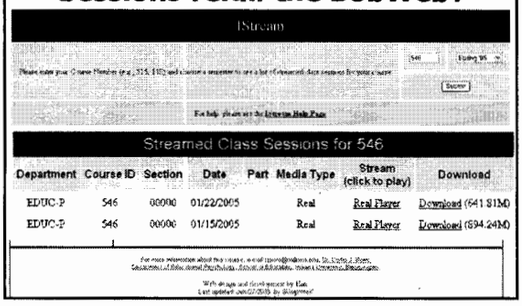
#22. Professional Development Learning Communities



#23. Health Resource Explorations (self study in anatomy)

Upper Extremity Muscles

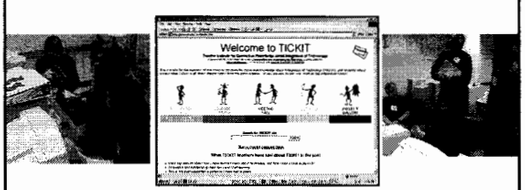
#24. Videostreaming Course Sessions (e.g., the BobWeb)

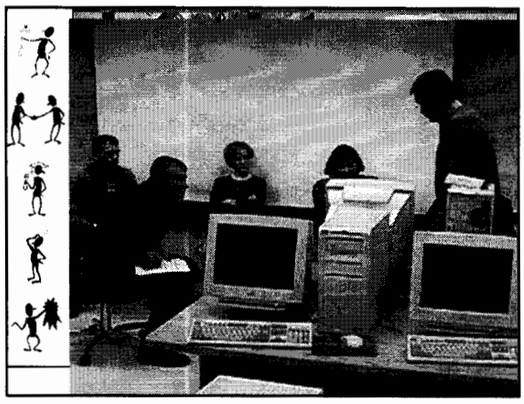


25. TICKIT (Bonk & Ehman, 2003)

http://www.iub.edu/~tickit

Teacher Institute for Curriculum Knowledge about Integration of Technology





Blended Works: Here's Proof

Jeff Barbian, September 2002, Online Learning

"The question is not if we should blend...rather the question is what are the ingredients."

– Per Marc Rosenberg, E-Learning: Strategies for Delivering Knowledge in the Digital Age

Poll #1. Which blended learning strategy might like to try?

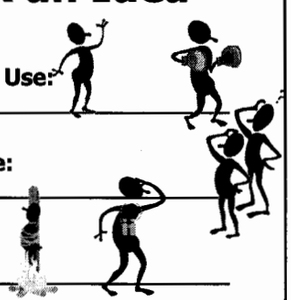
A. Post assessments and reviews online
B. Follow-up activities in a community of practice
C. Put reference materials on the web
D. Use online mentors, experts, and coaches
E. Rely on instant messaging and chat

Poll #2. What blended ideas do you think work or have you tried?

A. Online simulations, games, demos, and hands-on activities
B. Online surveys, polls, research, and authentic data collection
C. Extensive Web explorations (student selected and reported)
D. Extensive Web support materials (papers, discussion forums, test examples)
E. Alternative class and face-to-face meetings and activities

Pick an Idea

- Definitely Will Use:
- May Try to Use:
- No Way:



Any questions or comments so far?