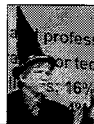




**Blended Learning Models, Frameworks,  
Stories, and Examples**



**Curt Bonk, Professor, Indiana University  
President, SurveyShare, Inc.  
cjbok@indiana.edu  
<http://php.indiana.edu/~cjbok>  
<http://SurveyShare.com>**



**This part of the talk will cover**

1. Definitions of blended learning
2. Advantages and disadvantages
3. Models of blended learning
4. Examples of blended learning
5. Implications for blended learning
6. Challenges for blended learning



**Poll #1. Have you taught, taken, or  
designed a blended learning course?**

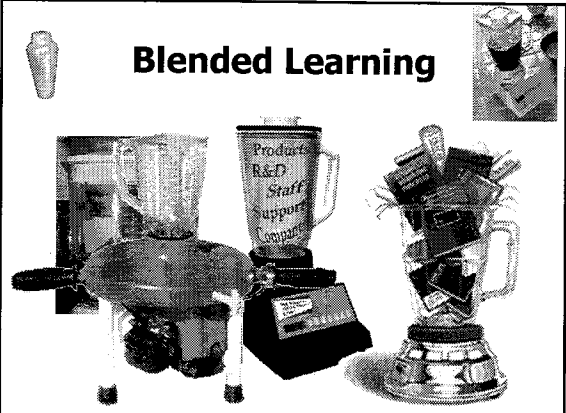
**A = yes**

**B = no**

**C = not sure, I am here  
to find out what  
blended means**



**Blended Learning**



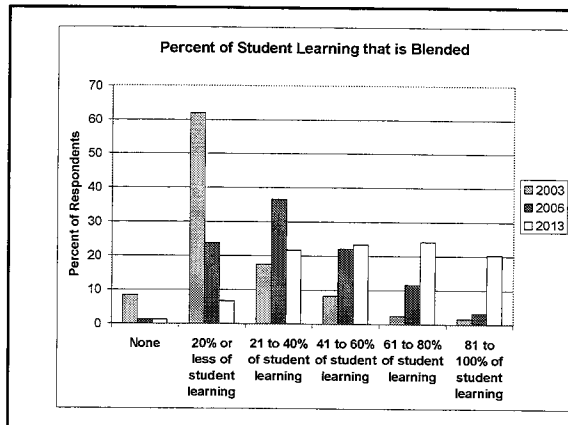
**Poll #2. What are you???**

- A. Professor, trainer, instructor, lecturer
- B. Director or staff in a learning center, instructional designer, etc.
- C. Policy maker, government official
- D. Administrator, Dean, President, etc.
- E. Graduate student
- F. Corporate trainer, corporate director
- G. Other

**Poll #3: Burning Blended  
Learning Q's**

(Pick any that interest you)

- A. What does blended learning mean?
- B. What is typically being blended?
- C. How to blend and how much?
- D. Why blend (advantages and disadvantages)?
- E. Where is this all headed?



## 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.

## Blended Learning Definitions

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

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

## 1. Blending Delivery Media

- "Blended learning means the combination of a wide range of learning media (instructor led, web based courseware, simulations, job aids, webinars, documents) into a total training program designed to solve a specific business problem." (Bersin & Associates, 2003, p. 3)

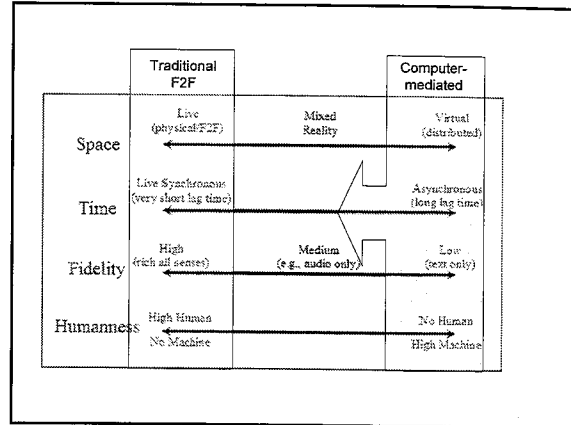
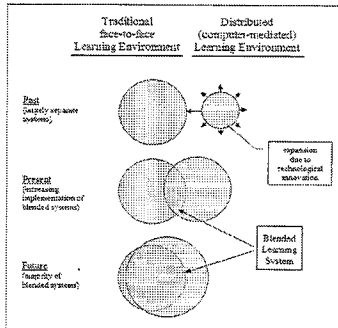
## 2. Blending Instructional Methods

- "Blended learning: to combine various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology." (Driscoll, 2002, p. 54)

## 3. 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)

## Historical Emergence of BL



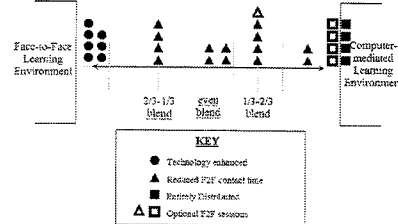
## Why Blend? Three Key Reasons

- 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

## Pew Foundation, PROGRAM IN COURSE REDESIGN

<http://www.center.rpi.edu/PewHome.html> Graham & Allen (2005)

### Blended learning: An emerging trend in education



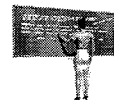
Range of blends in 30 course redesign projects funded by the PEW Charitable Trust

## 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/rlc/www/html/Special\\_Feature/hybridclasses.htm](http://courses.durhamtech.edu/rlc/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

### 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
- New requirements for a profession
- 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



### Upcoming Handbook of Blended Learning (HOBLe)

- University of Phoenix, Capella University, JIU, National University
- Microsoft, IBM, Sun, Cisco, Macromedia, Oracle, WebCT
- The World Bank, the DOD in USA
- In Canada: York University and the University of Calgary
- Other universities in Japan, Korea, Malaysia, Singapore, China, NZ, South Africa, Israel, Mexico, Australia, Wales, England, USA



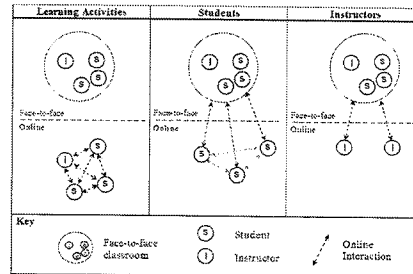
## Models of Blending

Blending occurs at the following four levels:

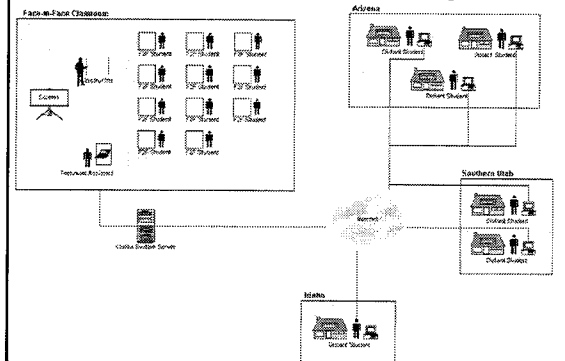
1. The **activity** level (e.g., start debate in class and complete it online)
2. The **course** level
3. The **program** level
4. The **institutional** level

### 1. Activity- and Course-Level Blends

Blended learning systems: Definitions and directions  
(Osguthorpe & Graham, 2003)



### 2. Course-Level Blend: Using CMS



### 2. Course-level Blends

Jagannathan, S. (in press).

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

Session 1    Session 2    Session 3    Session 4

Session 1	Session 2	Session 3	Session 4
Background readings & videos	Small group discussion	Apply model to real case	Self-paced work to reinforce learning
Print or Web	Facilitation online	Print, F2F or e-Instruction	Web, CD-ROM, print
+ Via Videoconferencing			
Topic 1 Introduce analytical model	Topic 2 Comment on group work, new concepts	Topic 3 Groups present, instructor clarifies & summarizes	Topic 4 Lives from self-paced to analytical model

### 4. Institutional-level Blending

Example 1: University of Central Florida

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



See: Ozburn, C., Hartman, L., Auer, F., Mosler, F., & Long, 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 Francisco, CA: Pfeiffer Publishing.

### 4. Institutional-level Blending

(Brian Linquist, in press)

Example 2: University of Phoenix

- Completely online courses
- Residential F2F courses
- Blended Courses
  - *Local Model* = 5 week courses with first and last week F2F
  - *Distance Model* = 5 week courses with half first and half last week F2F (the last meeting of one course is coordinated to be back-to-back with the first meeting of the next 5 week course)

## 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
<ul style="list-style-type: none"> <li>Traditional classroom</li> <li>Onsite engagement</li> <li>Virtual online classroom</li> <li>Live video via satellite or videoconferencing</li> <li>Online coaching/mentoring</li> </ul>	<ul style="list-style-type: none"> <li>Instructor-led classroom via e-mail</li> <li>Online or computer-based training (CBT)</li> <li>Self-study guides, manuals, texts</li> <li>Online resources and databases</li> </ul>	<ul style="list-style-type: none"> <li>Chat</li> <li>Instant messaging (IM)</li> <li>Newsgroups and forums</li> <li>Collaboration</li> </ul>

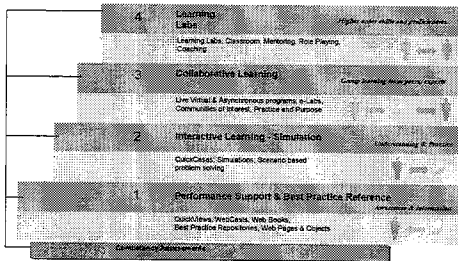
## Blended Learning Scenario

(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

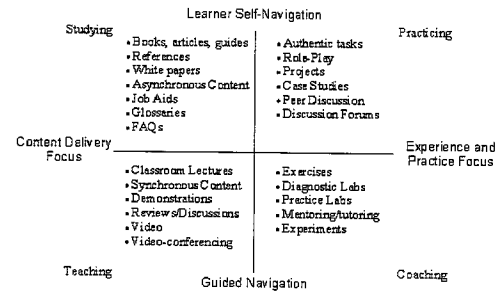
## The IBM Four Tier Learning Model

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



## Specific Learning Elements

An Learning Ecology from Sun Microsystems

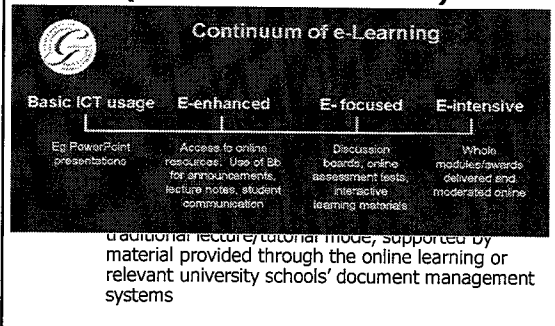


## Categories of Blends

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

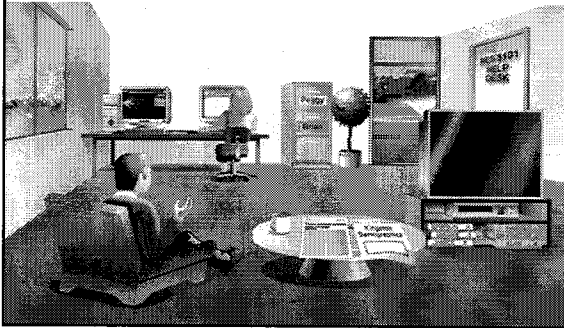
## B. Enhancing Blends

(New Zealand and Wales)



### C. Transforming Blends

(Kirkley & Kirkley, Oliver et al. HOBLe)

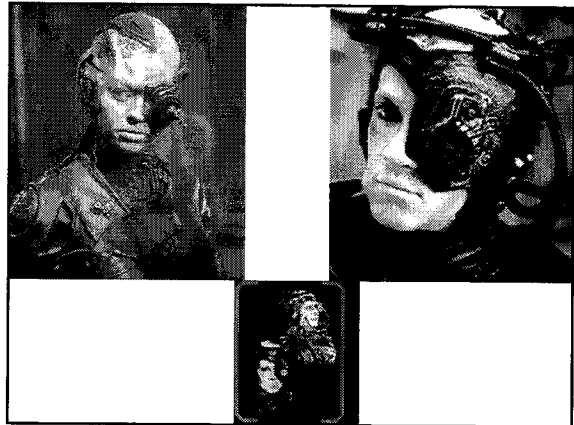


Future learning systems may not be differentiated as much based on **whether** they blend but rather by **how** they blend.

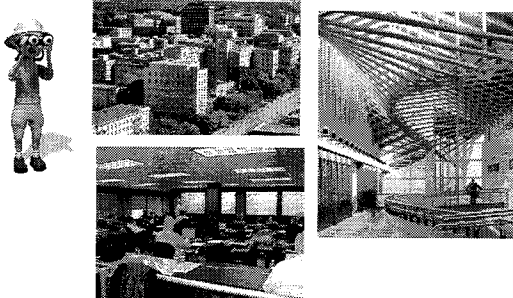
- (paraphrase from Ross and Gage, WebCT)

What can we say about emerging technology then???

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



### Blended Learning Problems and Solutions (40 examples)



### Problem Situation #1: Student Absenteeism

- Students miss class to attend a conference or event or a personal problem arises. Or students asks to watch the class a second time.

### Blended Solution #1. Video Streaming Course Sessions (e.g., BobWeb)

Streamed Class Sessions for 546

Department	Course ID	Section	Date	Part	Media Type	Stream (click to play)	Download
EDUC-P	546	00000	01/22/2005		Real	<a href="#">Real Player</a>	<a href="#">Download (641.813K)</a>
EDUC-P	546	00000	01/19/2005		Real	<a href="#">Real Player</a>	<a href="#">Download (694.243K)</a>

### Problem Situation #2: Facilities and Time

- **Limited facilities or rooms for teaching. Or students cannot make it to class every week or are working full time.**

### Blended Solution #2.

**Divide Online and Class Experiences: English Classes Online**  
Graham, Ure, & Allen (2003, July). Blended Learning Environn  
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).**



### Blended Solution #3. Post Foreign Language Practice Exercises Online (Grammar Practice on Spanish (Pew course))

Redesigning Introductory Spanish  
A New Grant Project in Course Redesign at Portland State University

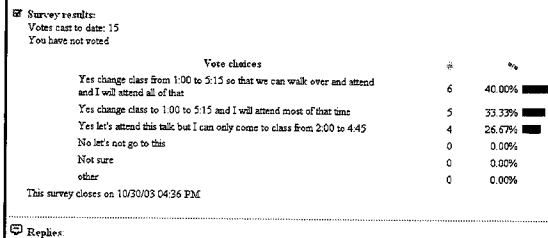
Modulos para conversar

### Problem Situation #3: Web Supplemental Activities

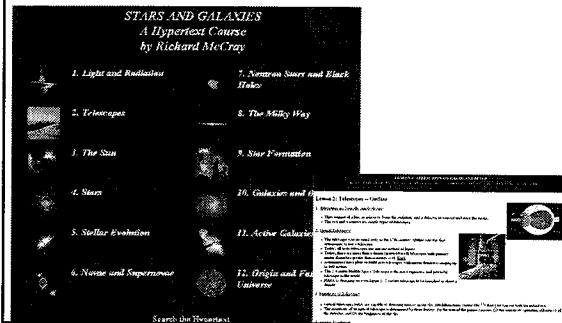
- **Fail to finish class discussion or other activity in time. Or desire to integrate the Web more in your face-to-face instruction or outside of class. Want to provide course resources and activities for students to explore.**

### Blended Solution #4.

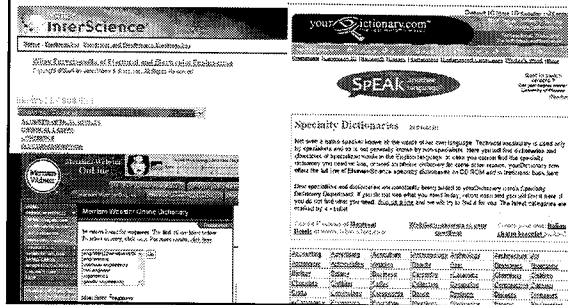
**Use Async Forum or Course Management System (Discussion Forums, Surveys, Word Docs, Web Links, PP slides)**



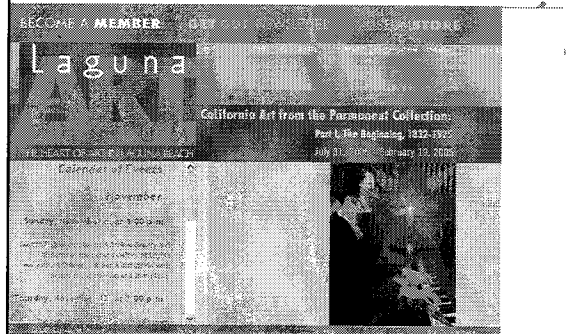
**Blended Solution #5.**  
**Extensive External Web Links (e.g., Astronomy class)**



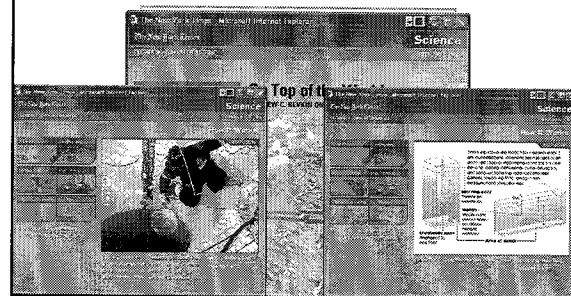
**Blended Solution #6.**  
**Use of Online Reference Materials (e.g., Content Encyclopedia and Dictionaries on Web in Engineering)**



**Blended Solution #7.**  
**Exploration: Virtual Museums**



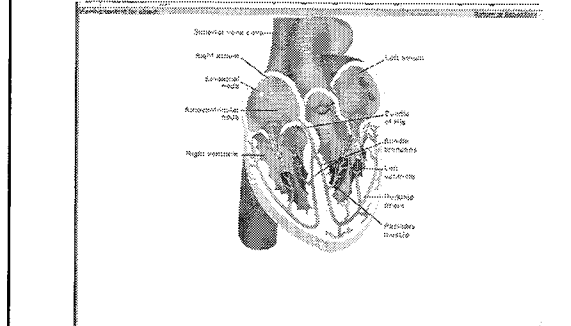
**Blended Solution #8:**  
**Interactive News and Adventure Learning (Andrew Revkin, New York Times, May 25, 2003)**



**Blended Solution #9. OpenCourseware;**  
**Tufts and USU OpenCourseWare Projects**



**Blended Solution #10. Online Course Portals**  
**and Digital Libraries for Student Exploration Activities: MERLOT, CAREO**



## Blended Solution #11. Instructor Portal: e.g., self study in anatomy

### Upper Extremity Muscles



## Problem Situation #4: Student Learning Control

- Want to give students more control and ownership over their own learning. Want to foster student generative learning or being authors of their own knowledge.

## Blended Solution #12. Survey Research (e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)



## Blended Solution #13. The

## Problem Situation #5: Preparedness for the Profession

- Students are not prepared for their professions when they graduate. Or want to better apprentice students into their chosen profession. What to provide opportunities to work with practitioners, experts, mentors, and coaches in authentic learning environment.

## Blended Solution #14. Apprenticeship in Professional Devel Sites (jobs, organizations, mentors, conferences, etc.)

## Blended Solution #15. Virtual Psychiatric Interview (Trinity College, Dublin)

showcases

12

Department: **Psychiatry**  
Academics: Prof. Michael Gill, Dr. Brian Fitzmaurice, Kate Armstrong

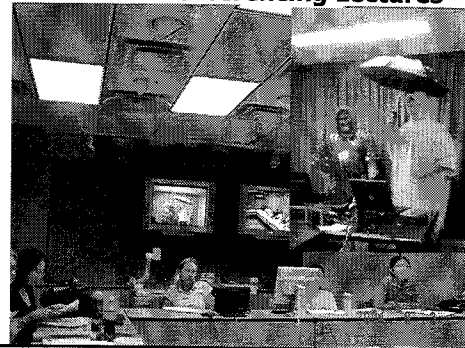
*Psychiatric Interviews*  
The Experience



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This is a virtual interview project that has been developed by CLT and the Department of Psychiatry. The first iteration was launched in March, 2004 for students. In this project students are given the opportunity to carry out a clinical interview with a patient. The student decides what questions are asked and with the aid of video clips can listen and watch the patient responses.

## Blended Solution #16. Videoconferencing Lectures



## Blended Solution #17. Webinars Synchronous Learning Example

HorizonLive : Features - Tour - Microsoft Internet Explorer powered by TrueView

horizonlive  
collaborate • interact • learn

Audio/Video  
Interactive Chat  
Slide List  
Polls and Surveys  
eLearning Templates  
eBoard  
LiveApp  
Archives

HorizonLive : Audio/Video

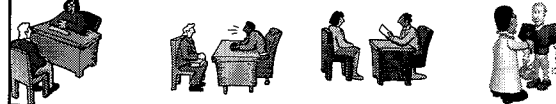
Avera

## Blended Solution #18. E-mail Expert Job Interviews (or post from actual internships)

**Field Definition: Have student**

**interview (via e-mail, if necessary) someone working in the field of study and share their results**

- As a class, pool interview results and develop a group description of what it means to be a professional in the field.



## Blended Solution #19. Virtual Surgery



John Robertson MP  
Aberdeen, Glasgow

Online-Surgery

The Online-Surgery allows you to perform surgical skills, or to observe a simulated actual surgery.

Upload your simulation results to be sent by email, post or telephone.

Each simulation is assigned an individual reference number which can be used in your correspondence.

There are no restrictions on how long you can use the program. Please email your name and mode of contact.

Click here to download a list.

## Problem Situation #6: Collaborative Skill Deficit

- Students need collaboration and teamwork skills. Want to build virtual teaming skills in class activities or work with learners in other locales or situations.

## Blended Solution #20. Online Collaboration and Editing

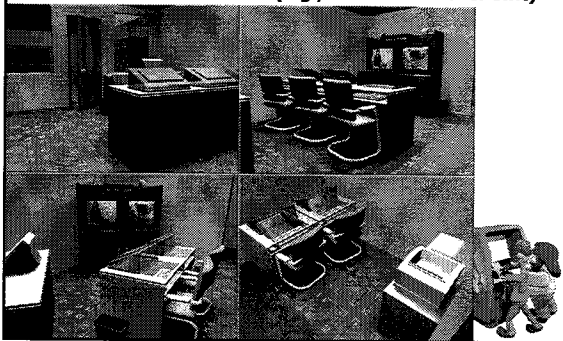
Blended Solution #20. Online Collaboration and Editing

## Blended Solution #21. Gallery Tours, Team Products

- Team or Course White Paper, Business Plan, Study Guide, Glossary, Journal: Have students work in teams to produce a product and share with other groups
- Post work to online gallery. Expert Review and rate projects (authentic audience)
- Students generate products for the class



## Blended Solution #22. Synchronous and Async Collaborative Tools (e.g., Microsoft SharePoint)



## Problem Situation #7: Student Reflections and Connections

- Students are not connecting content. They are just turning pages and going through the motions. Minimal student reflection is seen.

## Blended Solution #23. Learner-Self Interactions (Sun Microsystems)

Blended Solution #23. Learner-Self Interactions (Sun Microsystems)

## #24. Electronic Portfolios

#24. Electronic Portfolios

### #25. Yahoo Groups: Lurk in an Online Group

### Blended Solution #26: Workplace and Field Reflections

1. Instructor provides reflection or prompt for job related or field observations
2. Reflect on job setting or observe in field
3. Record notes on Web and reflect on concepts from chapter
4. Respond to peers
5. Instructor summarizes posts

### Problem Situation #8: Learning Community

- There is a preference for creating an online learning community in order to increase student learning and retention in the program. Such a community might be in a single class or across a series of classes.

### Blended Solution #27: Teacher Professional Development in Technology Integration (the TICKIT Program)

(Bonk, Ehman, & Yamagata-Lynch, in press, AACE Journal)  
<http://www.iub.edu/~tickit>

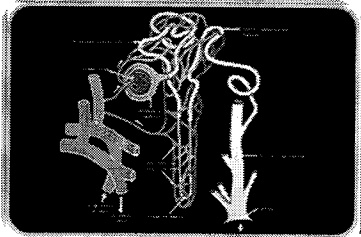
TICKIT: Teacher Institute for Curriculum Knowledge about Integration of Technology

### Problem Situation #9: Need to Visualize Content

- Content is highly visual in nature and difficult to simply discuss in class. Or students have a preference for visual learning.

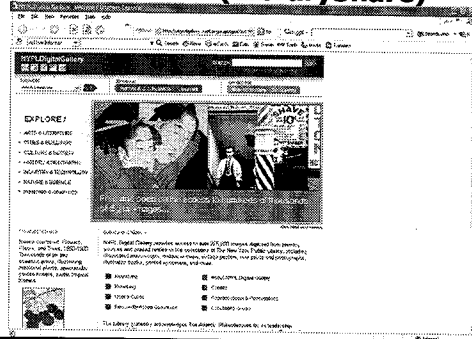
### Blended Solution #22. 3-D Visualization & Laboratory Software

**Blended Solution #29. Concept Maps, Flowcharts, Diagrams, Maps, etc.**



Elements in the system for control of oxygenation in the human body (e.g., the Kidney): From: Next-Generation Educational Software Why We Need It and a Research Agenda for Getting It. Van Dam, Becker, & Simpson, *Educause Review*, March/April 2005

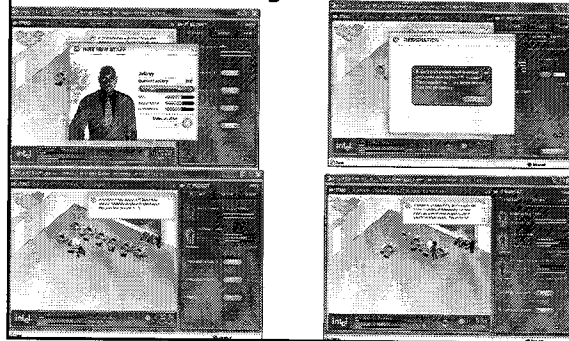
**Blended Solution #30. Digital Libraries (LibraryShare)**



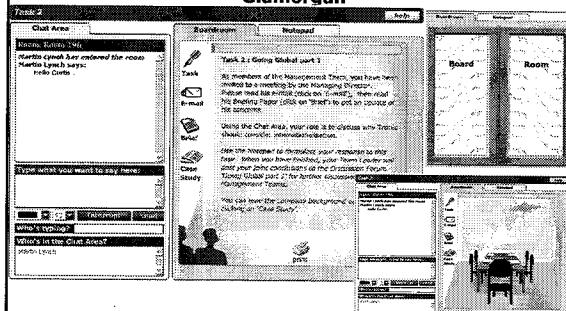
**Problem Situation #10: Need for Hands-On Learning**

- To learn the material requires that students try it out in a lab or real-world situation. Or students prefer hands-on learning activities.

**Blended Solution #31. Intel IT Manager Game**



**Blended Solution #32. Online Synchronous Cases and Teams Simulated Boardroom Chat; College Wales, Univ. of Glamorgan**



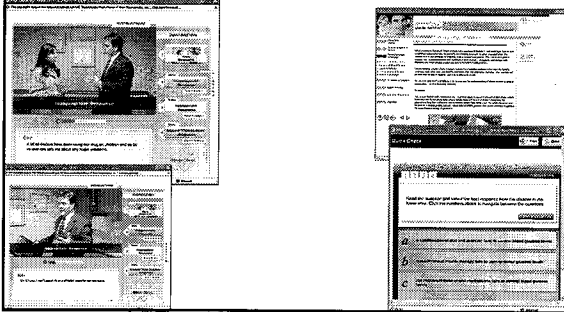
**Blended Solution #33. Posting Oral Histories, Interviews, and Perspective Sharing**

Have learners relate the course material to a real-life experience.

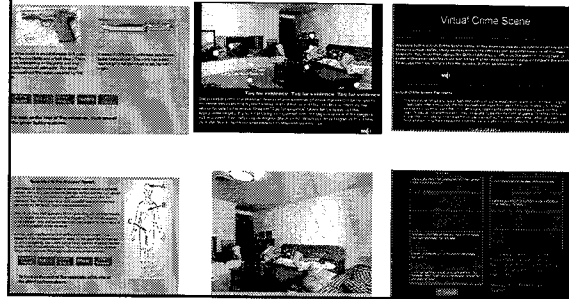
Example: In a course on Technology & Culture, students freely shared experiences of visiting grandparents on rural farms.



### Blended Solution #34. Video Scenario Learning (Option 6, Bloomington, IN)



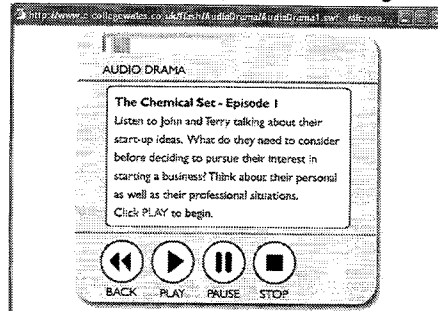
### Blended Solution #35. Cascaded Instruction (e.g., A Virtual Crime Scene)



### Problem Situation #11: Preference for Auditory Learning

- The content is heavily verbal or words. Or students have a preference to listen to a lecture or hear an instructor deliver a lecture.

### Blended Solution #36. Audio Dramas eCollege Wales, Univ. of Glamorgan

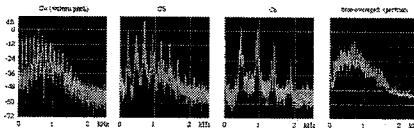


### Blended Solution #37. Basic Acoustics of Musical Instruments

#### Spectra of brass instruments.

When the player and instrument are playing a particular note, the lips are vibrating at one particular frequency. This, especially if the vibration is large, as it is when playing loudly, generates harmonics in the sound (see What is a sound spectrum?). These harmonics in the lip vibrations set up, and are usually in phase reinforced by, standing waves. Because the instrument is designed to produce standing waves with harmonic frequency ratios. List to a chromatic scale played on a modern B♭ trumpet, and look at the spectra.

chromatic scale on a modern trumpet



The three individual spectra are for the lowest note played (written C4 = sounding B♭2), and the next one and two octaves higher. The fourth spectrum is the average over time for the whole scale. Why do the spectra have their characteristic shapes?

In all wind instruments, the higher frequency harmonics are relatively inefficient because they lose energy to excess losses—a sort of friction with the walls, so they complete (in part) the shape at high frequencies. However, for brass instruments, the radiated power sometimes increases with frequency over the lower part of the range, at least. This means that one tends to get maximum radiation at a not-terribly high frequency (typically around several hundred Hz, although it has a different value in each lip reed instrument), and less power at lower and higher. Further, the radiation in the midrange and the construction beyond it also tend to 'draw the lips most efficiently over the frequency, further contributing to the peak.

### Problem Situation #12: Lack of Instructor Presence

- Students need to see or hear from the instructor. They need a sense that the instructor is supporting their learning. They prefer face-to-face but are willing to try online.

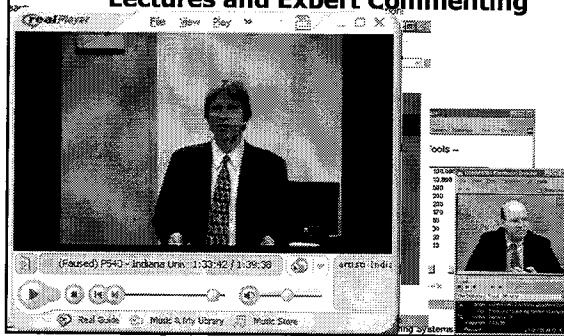
**Blended Solution #38.**  
Pod Casting Broadcasts (Adam Curry;  
[www.dailycurrycasts.com](http://www.dailycurrycasts.com))



**Blended Solution #39.**  
Webcast Lectures (slides synched)



**Blended Solution #40. Video Streamed Lectures and Expert Commenting**



**Poll #4. 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 #5. 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

**Implications for Blended Learning in Higher Education**



## Some Implications of Blended Learning

- Instructors can be anywhere
- Students expect choices
- More corp partnerships
- Courses more modular
- More individualization
- Scheduling a nightmare!



## 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)

## The End...Remember



## It's Over...

Poll #5. Ok, then, who wants more???

A. Yes  
B. No  
C. Not sure

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

**BONK!**

Your skeletal muscles' maximum burn rate is double that of your brain. Think about it.

### Any questions, comments, or concerns?

**The Handbook of Blended Learning**  
Global Perspectives on Local Practice  
Curtis J. Bonk  
Charles B. Graham

Sample HOBLE chapters at:  
<http://www.publicationshare.com/>

Archived talks at:  
<http://www.trainingshare.com/>