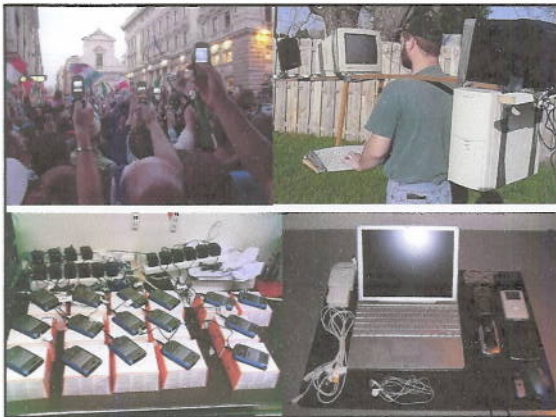# Blended and Mobile Learning in a Connected World: Problems and Solutions

Curt Bonk, Professor, Indiana University
President, CourseShare, LLC
cjbonk@indiana.edu
http://mypage.iu.edu/~cjbonk

Will we become increasingly mobile learners?

Force is with new GPS units
June 9, 2010

WikiReader: Updating can be a pain.

TwitterPeek: Restricted to Twitter.

Judy Brown
Your Learners ARE Mobile: Is Your Learning
http://www.slideshare.net/judyb/your-learners-are-mobile-is-your-learning-3404505

Your Learners ARE Mobile. Is Your Learning?

Tomi Ahonen Almanac 2010

- 4.6 billion subscriptions - 68% of planet
- 3.4 billion unique users - half the planet
- 1.2 billion PCs (including notebooks)
- 3x as many camera phones in use today than any kind of stand-alone camera, digital or film-based - ever manufactured
- 1.13 billion handsets sold last year compared to 270 million new PCs
- More internet users on mobile than on personal computers

We Are Going Mobile!

40,000 new mobile subscribers a week in Rwanda; Rwanda Newtimes report, January 2009

Africa is the continent with the fastest growth, International Telecommunications Union (ITU), March 2009

India: In January, 2009, the number sky rocketed to 15.4M
Globally: 60,000 new mobile subscriptions every hour!!!

(per Paul Kim, Stanford, 2009); Nokia Research Lab
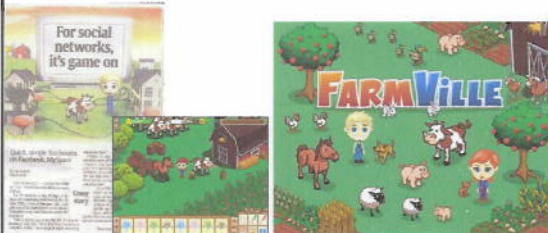http://news.yahoo.com/s/afp/20090308/bs_afp/indiaeconomytelecom

e-Book Readers

Social Networking Gaming
(e.g., Farmville)
For social networks, it's game on, USA Today, Jon Swartz, Thursday October 15, 2009

Smartphones

Mobile Learning and Blended Learning Exploding
College tech 'catching up' with students
Kathleen Gray & Robin Erb, USA TODAY, Oct 6, 2009

- At Abilene Christian (University)...about 2,800 students and 70% of the 250 professors use the Apple technology for instructional purposes.
  - Art students use app to draft sketch and send it to the teacher and other students for advice before starting the real art pieces.
  - A drama teacher takes video of the lead dancer in a production and sends that along to other students for rehearsal.
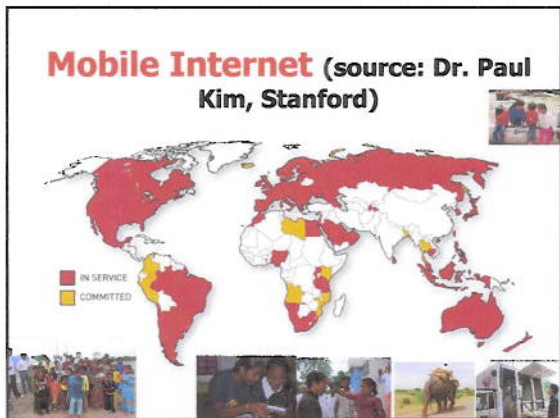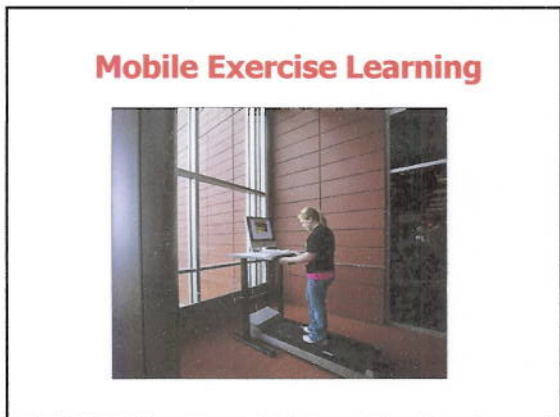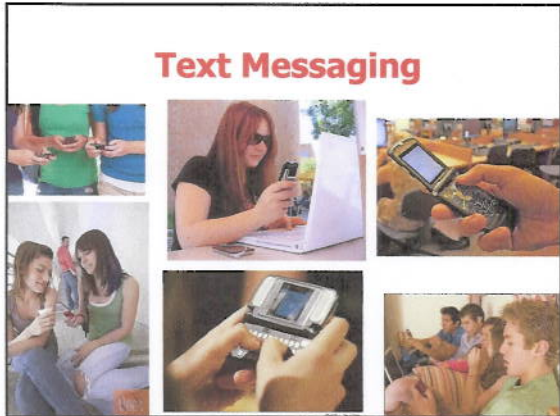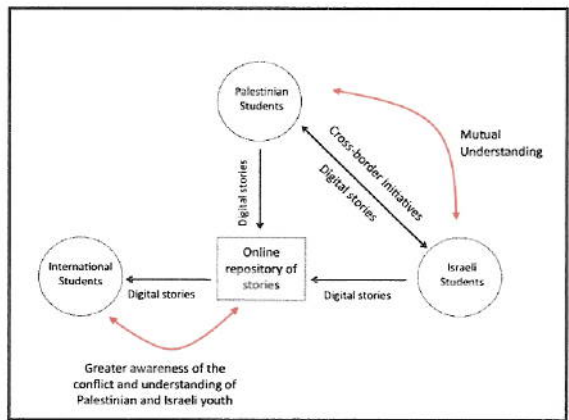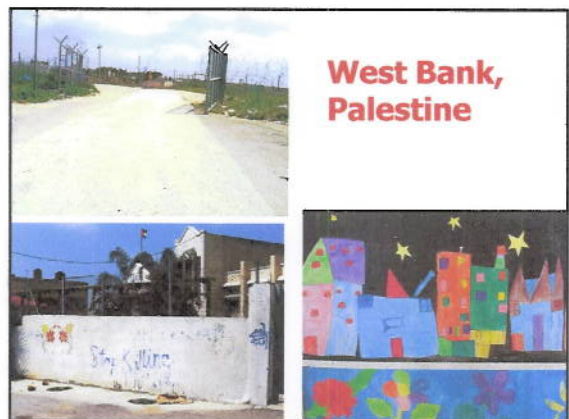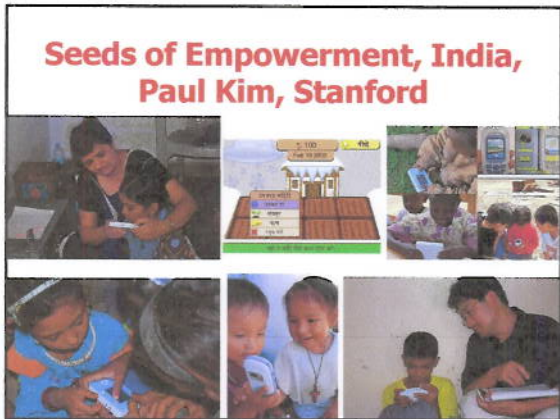
Museum of London's Streetmuseum App Puts Historic Photos in Perspective
Written by Chris Cameron, June 1, 2010
"Hundreds of images from the Museum of London's extensive collections showcase both everyday and momentous occasions in London's history, from the Great Fire of 1666 to the swinging sixties"

Text Messaging

Inexpensive Laptops and Tablet Computers
OLPC, Marvell Join Forces, Announce sub-$100 Tablet by December 2010, May 27th, 2010, Mike Prospero

Mobile Exercise Learning

Will expert advice (and happiness) be a button away?
(e.g., Live Happy Practitioner Directory)

Mobile Internet (source: Dr. Paul Kim, Stanford)

IN SERVICE
COMMITTED

"A" is for App, Anya Kamenetz, Fast Company, April 2010

Seeds of Empowerment, India, Paul Kim, Stanford

Kibera, Kenya — Slum area

West Bank, Palestine

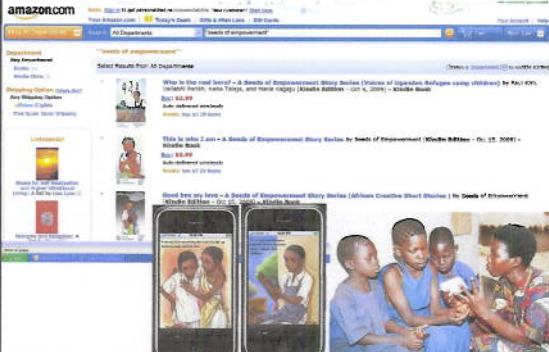## Powering the device on bicycle

PocketSchool on Two Wheels

Stories about love, forgiving, unity, peace, reality in Africa

---

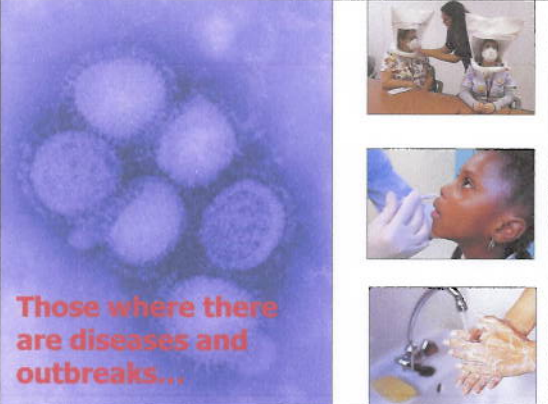## Part II. Blended Learning
1. Models and Frameworks
2. Problems and Solutions (i.e., examples)

Who is demanding fully online and blended learning?

Those where there are diseases and outbreaks...

Those in hurricanes!

Those in earthquakes!

Those affect by volcanos...

Those in blizzards and ice storms...
Snowmegeddon, DC winter of 2010

Blending Online
Is the Solution!

What I will discuss...

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

Handbook of Blended Learning
(HOBLe, Bonk & Graham, 2006)

- 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

Slide 1

Blended Learning Defined and Explained

Slide 2

Myth #1: People will know what I am saying when I say "blended learning."
Myth #2: Blended is the same as "hybrid."
The Sloan Consortium

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.

Slide 3

Myth #3: Knowing "how much" to blend is vital.
Range of Blends in Pew Cases

Face-to-Face Learning Environment — Computer-mediated Learning Environment

2/3-1/3 blend   even blend   1/3-2/3 blend

KEY
- ● Technology enhanced
- ▲ Reduced F2F contact time
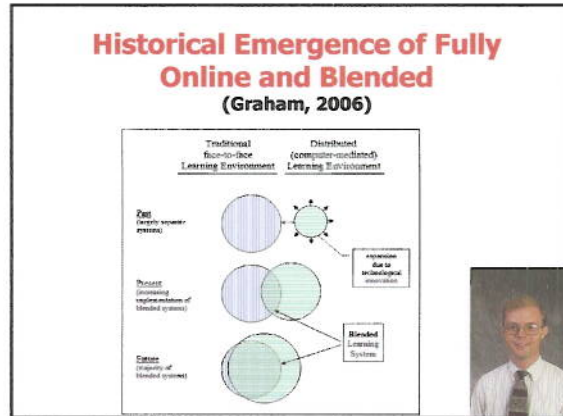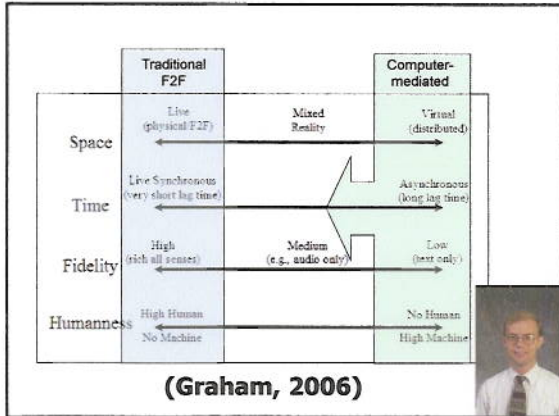- ■ Entirely Distributed
- △ ☐ Optional F2F sessions

Source: Graham, C. R., & Allen, S. (2005). Blended learning: An emerging trend in education. In C. Howard B J. V. Boettcher & L. Justice & K. D. Schenk & P. L. Rogers & G. A. Berg (Eds.), *Encyclopedia of Distance Learning* (pp. 172-179). Hershey, PA: Idea Group Inc.

Slide 4

Myths #4: Blended learning is easy to define.
Myth #5: Blended learning is hard to define.
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)

Slide 5

Trying to Define it is a Trap!!!
A Rebel From Another Galaxy, March 14, 2010
By Andrea Fuller

THE CHRONICLE
of Higher Education

Athletics

A Rebel From Another Galaxy

IT'S A TRAP

Slide 6

A vision for a blended virtual ecosystem

DIGITAL PROJECTOR

TEACHER LAPTOP

INTERACTIVE WHITEBOARD

SECOND LIFE

Wimba
people teach people

Bb
Blackboard

STUDENT RESPONSE SYSTEM
Provides instant assessment feedback to teachers

AUDIO/VISUAL SYSTEM

(Graham, 2006)

## Historical Emergence of Fully Online and Blended
(Graham, 2006)

Myth #6: Blended learning works everywhere.
Where is Blended Beneficial?

- Large Classes (spanish, intro psych, algebra, elementary statistics, biology)
- Classes with working students
- Students spread over a distance
- Classes with certification
- Classes with need for standardization
- New requirements for a profession
- Writing intensive classes
- Theory classes

Examples of Blended Learning
Margaret Driscoll, IBM

- 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

Student Satisfaction in Canada for Blended Learning
(Owston, Garrison, & Cook 2006)

take another BL course?
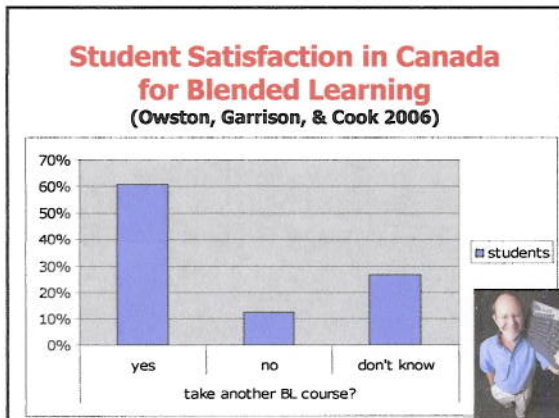
Myth #7: People learn more in face-to-face settings than blended or fully online ones.
Fully Online and Blended Learning Advantages

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

Slide 1

Myth #8: Faculty can have a logical discussion with administrators about blended learning.
Models of Blending
Blending occurs at the following four levels:

- Activity Level
- Course Level — } Instructor stakeholders
- Program Level
- Institutional Level — } Administrator stakeholders

Slide 2

1. Activity- and Course-Level Blends
Blended learning systems: Definitions and directions (Osguthorpe & Graham, 2003)

Slide 3

2. Course-Level Blend: Using CMS to blend distance and F2F learners (Rogers, Graham, et al., 2003)

Slide 4

3. Program-level blending
(blend same for all participants)
Kelley Direct Online MBA (IU)

Legend:
- Certificate Programs
- MS
- Public MBA
- Corporate MBA

Years: 2002-3, 2003-4, 2004-5, 2006

Slide 5
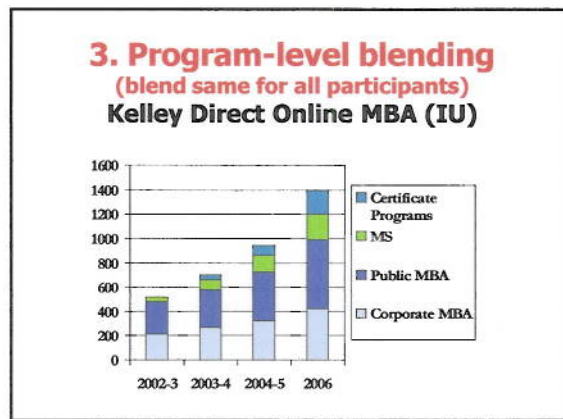
4. Institutional Blend
(e.g., The Open U Malaysia) (Abtar Kaur, 2006)

- Started August 2001 : approx. 800 students
- Total students (2005): approx. 33,000
- Total students (2010): over 85,000
- Total full-time academic staff : 60
- Total part-time academic staff (tutors): approx 3,000
- 33 Learning Centres (7 Regional Centres)
- Pedagogical approach: Blended Learning

Slide 6

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.

Myth #9: There is a best model of blended.
AMA Special Report, Effectively Implementing a Blended Learning Approach
(Steven Shaw & Nicholas Igneri, 2006)

Source: American Management Association, AMA at Work

Institutional-level Blending
(Brian Linquist, 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)

The IBM Four Tier Learning Model
Blending Learning for Business Impact – IBM's case for learning success, Lewis & Orton, 2006

Myth #10: If you read the enough research you will be able to know the impact of blended learning.

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

Part II: 13 Fully Online and Blended Learning Problems and 43 Solutions

---

Problem Situation #1: Brief FTF Experiences

- Face-to-face (FTF) experiences are brief, one-week journeys. Need to need to build self-confidence, create social supports, teams, camaraderie, etc.

10

Ok, Million Dollar Question: What can you do in 1 week?

Blended Solution #1+. Sample Activities for Brief Meetings

1. Assign web buddies, email pals, critical friends based on interests, confidence, location, etc.
2. Ice breakers—paired introductions, corners.
3. Solve case in team competitions with awards.
4. Test technology in a lab.
5. Assign teams and exchange info for small teams using text messaging.
6. Library (digital and physical) scavenger hunt.
7. Do a podcast documenting the meeting.
8. Have everyone create a blog on the experience.
9. Open an e-portfolio for each student
10. Brainstorm how might use technology in program.

Problem Situation #2: 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 #2. Webcast Specific Instructor Lectures
(Tegrity, Echo360, Mediasite, etc.)

Blended Solution #3. Post Courses in YouTube and iTunes

Problem Situation #3: 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 #4.
Alternating FTF and Online Classes

- Freshman English at BYU: Students are required to meet F2F once a week instead of three times a week. Same in a multimedia class at Beijing Normal University (BNU)

Problem Situation #4:
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 #5.
Using Open Access Journals
(e.g., PLOS, JIOL, IRRODL)

Blended Solution #6. United Nations World Digital Library
http://www.wdl.org/en/

Blended Solution #7.
Online Portal Explorations

Blended Solution #8. Shared Online Video (e.g., the Khan Academy; videos on math, bio, trig, chemistry, money and banking, economics, statistics, etc.)

Blended Solution #9. Open Ed Resources & OpenCourseWare

Problem Situation #5: 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 #10. Learner Video Production

http://www.youtube.com/watch?v=xiwSIryPzsQ
http://www.youtube.com/watch?v=x3FJyi4Pn_E
http://www.youtube.com/watch?v=eD1awpaSuP0

Blended Solution #11. Video Blogging and Reflections

Blended Solution #12. Photo Festivals and Competitions
(e.g., COFA at UNSW, flickr, etc.)

Problem Situation #6: 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 #13. Online Acounting Lessons
(e.g., Lyryx; https://lifa.lyryx.co)

Blended Solution #14. Listen and Reflect on Book Author Podcasts

Blended Solution #15. Pubcasts!
(videos of scientific papers and science)
NSF, the Public Library of Science, and the San Diego Supercomputing Center created a YouTube for scientists to help demystify important research papers. See SciVee.

Blended Solution #16. Online Cases (e.g., Mark Braun, IU)

Blended Solution #17. Real World Problems (PBL online)
(e.g., Real-time Business Cases)

Problem Situation #7: 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 #18. Global Teams Solving Cases

Blended Solution #19. Mock Tour Packages (e.g., Univ of Illinois and Korea Tourism classes)

Blended Solution #20. Online Role Play (Tulane University, Exercise for Renewable Energy, Freeman Sch. of Business, roles include power traders, electric utility analyst, independent power producers & utility dispatchers)

Problem Situation #8:
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 #21. Expert Video Reflections and Scaffolds online (E-Reading First Ohio)

Blended Solution #22. Watch or Listen to Online Conferences

Problem Situation #9: 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 #23. Create an Online Community (e.g., in Ning, Google Groups, or Yahoo Groups)

Blended Solution #24. Cross-Institutional Wikibook Project (e.g., IU and the University of Houston)

Blended Solution #25. Global Videoconferencing

Problem Situation #10: 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 #26. Simulations and Virtual Worlds Online (e.g., OpenSimulator)

Blended Solution #27. World Trends and Indices (e.g. Worldmapper)

Blended Solution #28. Anchored Instruction Discussions (TED, YouTube, YouTube EDU, CNN, BBC, TeacherTube, CurrentTV)

Blended Solution #29. Virtual Tours and Timelines (i.e., HyperHistory; http://simile.mit.edu/timeline/)

Problem Situation #11: 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 #30. Online Psychology Experiments

Blended Solution #31. Tour a Museum (e.g., British Museum, Smithsonian, Louvre)

Blended Solution #32. Concept Mapping and Timeline Tools
(e.g., VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Blended Solution #33. Reuse Blog Posts, Chat Transcripts, Interviews, Online Presentations

Blended Solution #34. Educational Simulations

Blended Solution #35. Podcasts for students of pronunciation class
(e.g., Tzu-Su Chen, Taiwan)

Problem Situation #12: 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. Podcasting Medical Lectures (School of Dentistry, University of Michigan)

Blended Solution #37. Podcast Paper Reflections

Blended Solution #38: Teaching with Twitter A. Course announcements and following people (e.g., microblogging)

Blended Solution #39: Free Podcast Shows; Language Learning (e.g., ChinesePod)

Ken Carroll

Jenny Zhu

Blended Solution #40. Podcasts, Audio Portals, etc. (e.g., Basic Acoustics of Musical Instruments; Univ. of New South Wales)

Blended Solution #41. Indexing Sounds in Cities with Google Maps

Problem Situation #13: 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 #42. Video Course
Intros (examples from Northern Virginia Community College and IU online MBA program)

Blended Solution #43. Class Synchronous Sessions and Archives
(Breeze/Adobe Connect Pro, Elluminate, WebEx, Dim Dim)

Trends, Implications, and Challenges for Blended Learning

1. Faculty and students are more mobile.
2. Students more choices.
3. Student expectations rise.
4. Greater self-determined learning.
5. More corporate university partnerships.
6. Courses increasingly modular.
7. Less predefined schedules.
8. When teaching less clear; when learning less clear.

Again, this talk covered...

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

How many ideas did you get from this talk?

1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.
7. More than 10.

Questions and Comments

Note: Bonk papers and talks at:
http://www.publicationshare.com/
http://www.trainingshare.com/