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. 10 predictions 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

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."


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

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)
- "Hybrid or blended model of learning replace some in-person meetings with virtual sessions, hybrid courses offer some of the convenience of all-online courses without the complete loss of face-to-face contact.” (Young, 2002, p. A33)
A Working Definition

Working 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.

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 (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

Graham & Allen (2005)
Blended learning: An emerging trend in education

Range of blends in 30 course redesign projects funded by the PEW Charitable Trust
IMPROVED LEARNING OUTCOMES from Technology
(Carl 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, RIC, 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
(Carl 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%

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

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

Hybrid Classes: Maximizing Resources and Student Learning

http://courses.ualberta.ca/col/ownen/html/Special_Teaching/blendclasses.html

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

Where is Blended Beneficial?
http://www.center.siu.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
- 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

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

Upcoming Handbook of Blended Learning (HOBlLe)

- University of Phoenix, Capella University, IUI, 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

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

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.

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)

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

<table>
<thead>
<tr>
<th>Live Instructor-led</th>
<th>Self-paced learning</th>
<th>Tools for learning communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Traditional classroom&quot;</td>
<td>&quot;Instructor-led classroom via e-mail&quot;</td>
<td>&quot;Chat&quot;</td>
</tr>
<tr>
<td>&quot;Onsite engagement&quot;</td>
<td>&quot;Online or computer-based training (CBT)&quot;</td>
<td>&quot;Instant messaging (IM)&quot;</td>
</tr>
<tr>
<td>&quot;Virtual online classroom&quot;</td>
<td>&quot;Self-study guides, manuals, texts&quot;</td>
<td>&quot;Newsgroups and forums&quot;</td>
</tr>
<tr>
<td>&quot;Live video via satellite or videoconferencing&quot;</td>
<td>&quot;Online resources and databases&quot;</td>
<td>&quot;Collaboration&quot;</td>
</tr>
</tbody>
</table>

Blended Learning Scenario

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

<table>
<thead>
<tr>
<th>Learner Self-navigation</th>
<th>Content Delivery</th>
<th>Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books, articles, guides</td>
<td>Classroom Lectures</td>
<td>Guided Navigation</td>
</tr>
<tr>
<td>References</td>
<td>Demonstrations</td>
<td>Coaching</td>
</tr>
</tbody>
</table>
| White papers | Videos | \n
A. Enabling Blends

- Many of the for-profit institutions like Capella, Jones International University, and University of Phoenix have models that focus on making educational opportunities available to those who don’t have access due to time and location constraints.
- National University has a teacher preparation program geared towards access and flexibility.
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 material provided through the relevant university schools’ or management systems

C. Transforming Blends  
(Kirkley & Kirkley, Oliver et al. HOBlE)
- Corporate/Military Training
  - Workplace learning (integrating learning into workflow)
  - Performance support and knowledge management using mobile technologies
  - Mixed-reality environments combining the virtual and real Reality-Virtuality Training Continuum

Example of levels of mixed reality that allow a blending of the real and virtual worlds.

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)

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Risk</td>
<td>Extensive Planning</td>
</tr>
<tr>
<td></td>
<td>Easy to Embed</td>
</tr>
<tr>
<td>2. Time</td>
<td>Enterprise Licenses</td>
</tr>
<tr>
<td></td>
<td>Free or Inexpensive</td>
</tr>
<tr>
<td>3. Cost</td>
<td>Instructor-Focus</td>
</tr>
<tr>
<td></td>
<td>Student-Focus</td>
</tr>
<tr>
<td>4. Student-Centered</td>
<td>Low</td>
</tr>
</tbody>
</table>

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)

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

- 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., 2002).

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 #3.
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.)

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)

- STAR and SUGGEDS
- ABC and DEF
- GHI and JKL

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

- ABC Encyclopedia
- DEF Dictionary
- GHI Reference

Blended Solution #7.
Exploration: Virtual Museums

- LagunArt
- Museum Collection

Blended Solution #8.
Post Foreign Language Practice Exercises Online
(Grammar Practice on Spanish (Pew course))

- Models para conversar
- Exercise Preview

Blended Solution #9.
Opencourseware; Tufts and US OpenCourseWare Projects

- Tufts OpenCourseWare
- Project Details

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

- MERLOT Portal
- CAREO Library
10. Continued... Animations, Video Clips, Audio, Pictures, Web Resources, etc.

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 #13. Survey Research (e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)

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. International Exchanges and Mentoring**

**Classrooms from 182 Countries speaking 124 Languages now participating!**

**Blended Solution #16.**
Videoconferencing Lectures

**Blended Solution #17. Webinars**
Synchronous Learning Example

**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 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**
Amlinsh - Glasgow

**Online Surgery**
The Online Surgery allows you to put questions to John and to receive responses from him.
You can expect your reply to be sent by e-mail, post or telephone.

Each question is answered in detail where possible and can be read from below.

There are no hassle! Just fill in your name and type in your question.

*John is a professional surgeon.*

**CLASS ACTION ADVERTISMENT**
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 #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. Blogs (diaries, writing)
Blended Solution #24. Learner-Self Interactions (Sun Microsystems)

#25. Electronic Portfolios

Blended Solution #26. Yahoo Groups:
Lurk in an Online Group

#27. 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 #28: Teacher Professional Development in Technology Integration (the TICKIT Program)
(Bonk, Ehman, & Yamagata-Lynch, in press, AACE Journal)
http://www.iub.edu/~ticket

TICKIT: Teacher Institute for Curriculum Knowledge about Integration of Technology
Blended Solution #29. Professional Development Learning Communities

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 #30. 3-D Visualization & Laboratory Software

Blended Solution #31. Concept Maps, Flowcharts, Diagrams, Maps, etc.

Problem Situation #10: Need for Hands-On Learning

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

Blended Solution #32. Digital Libraries (LibraryShare)
Blended Solution #33. 
**Authentic Data Analysis**

Jeanne Sept, IU, Archaeology of Human Origins; Components: From CD to Web
- A set of research q’s and problems that archaeologists have posed about the site
- A complete set of data from site & background info
- Students work collaboratively to integrate multidisciplinary data & interpret age of site
- Interpret of ancient envir
- Analyze artifacts and fossils

Blended Solution #34. 
**Online Synchronous Cases and Teams**
Simulated Boardroom Chat; College Wales, Univ. of Glamorgan

Blended Solution #35. **Online Labs**
(e.g., Foreign Language Practice Exercises Online)

Blended Solution #36. **Case-Based Learning: My Patient.com**

Blended Solution #37. **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 #38. **Online Games**
www.km-solutions.biz/csa/quiz.zip; Games2Train: The Challenge; Thali.com
Blended Solution #39.
Learner-Content Interactions
Alien Interactions (sales closing)
http://sales.allen.com/client/Books/Bork_Web_Links.htm

Blended Solution #40.
Video Scenario Learning (Option 6,
Bloomington, IN)

Blended Solution #41.
Virtual Performances and Models
(Music, Cyber Fashion Shows, etc.)

Blended Solution #42.
Cascaded Instruction (e.g., A
Virtual Crime Scene)

Blended Solution #43. Learner Content
Interaction:
Business & Healthcare Examples
(Option 6)

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.
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 #49. Video Streamed Lectures and Expert Commenting

- Video streaming subscription services will take off in the next several years, according to a new study, which estimates that the market’s value will reach $4.5 billion in 2007 (Sept 23, 2003, Stephanie Olsen, CNet News.com).

Blended Works: Here’s Proof
Jeff Barblan, 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 #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

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.

What are the challenges?

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

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."

This part of the talk addressed
1. Definitions of blended learning
2. Advantages and disadvantages
3. Models of blended learning
4. Examples of blended learning
5. 10 predictions for blended learning
6. Challenges for blended learning

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!!!

Any questions, comments, or concerns?

Sample HOBLe chapters at: http://www.publicationshare.com/
Archived talks at: http://www.trainingshare.com/