Best of the Best Practice: Blended Learning, R2D2, TEC-VARIETY, and the Best of Curriculum Design and Delivery

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21 Things That Became Obsolete This Decade
December 11, 2009, Silicon Alley Insider

15 Gadgets that Changed Everything This Decade
December 9, 2009, Jay Yarow, Silicon Alley Insider

Technology for Learning Expands
College tech ‘catching up’ with students
Kathleen Gray & Robin Erb, USA TODAY, Oct. 6, 2009

Part I. Blended Learning

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

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.

Senior Emily Smak, 20, tries out the treadmill workstation in one of the study lounges in the new Education and Human Services Building at Central Michigan University. There is a new iMac computer attached to it so students can get a little exercise while doing homework or other things on the computer.
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

Myth #3: Knowing “how much” to blend is vital.

Range of Blends in Pew Cases

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)

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

Myth #7: People learn more in face-to-face settings.

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

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
- Program Level
- Institutional Level

Instructor

Administrator

stakeholders

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

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

The IBM Four Tier Learning Model (2006)  
Blending Learning for Business Impact – IBM’s case for learning success, 2006 Handbook of Blended Learning, Nancy Lewis, VP, & Peter Orton, IBM

Institutional-level Blending  
(Abtar Kaur & Ansary Ahmed, 2006, Open U Malaysia)

Myth #10: Blended learning has exploded at the University of Phoenix.  
Institutional-level Blending (Brian Linnquist, 2006)

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 Solution #1+.
Sample Activities for Brief Mtgs
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.
Implications and Challenges for Blended Learning

1. Faculty and students are more mobile.
2. Students more choices.
3. Student expectations rise.
6. Courses increasingly modular.
7. Less predefined schedules.
8. When teaching less clear; when learning less clear.
We are not motivating students with the technologies that they love

Ok, Million Dollar Question: How do you motivate online learners? What Words come to mind?

Intrinsic Motivation
"...innate propensity to engage one's interests and exercise one's capabilities, and, in doing so, to seek out and master optimal challenges (i.e., it emerges from needs, inner strivings, and personal curiosity for growth)


I even reflected on this for a moment...and then something magical happened...

Magic #1: TEC-VARIETY Model for Online Motivation and Retention

1. Tone/Climate: Psych Safety, Comfort, Belonging
2. Encouragement, Feedback: Responsive, Supports
3. Curiosity: Fun, Fantasy, Control
4. Variety: Novelty, Intrigue, Unknowns
5. Autonomy: Choice: Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactive: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Excitement
9. Tension: Challenge, Dissonance, Controversy
10. Yields Products: Goal Driven, Products, Success, Ownership

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. **Tone/Climate: Social Ice Breakers**

   **A. Public Commitments:**
   Have students share how they will fit the coursework into their busy schedules

   **B. Favorite Websites**
   1. Everyone posts 1-2 of their favorite Websites and explain why.
   2. Peers comment on or rate them.

2. **Encouragement, Feedback, etc.:**
   **A. Online Self-Testing** (e.g., self study in vocabulary, anatomy, chemistry, dissection, etc.)

3. **Curiosity, Fun:**
   **A. Online News**
   (Giant jellyfish, Tiny T. rex, and Ardi)

4. **Variety, Novelty:**
   **A. Cool Resource Provider or Tech Demos**
   - Have students sign up to be a cool resource provider once during the semester.
   - Have them find additional paper, people, electronic resources, etc.
   - Share and explain what found with class.
4. Variety, Novelty:
   B. Expert Chats
   (Bonk, 2007; Liang & Bonk, 2009)
   1. Agree to a weekly chat time.
   2. Bring in expert for discussion or post discussion topics or issues.
   3. Summarize or debrief on chat discussion.

5. Autonomy, Choice:
   B. Clickers; Innovation is but one click away...

5. Autonomy, Choice:
   C. Famous Person Web Explorations,
   Searches, Twitter Tracking, and Interviews
   (e.g., Thomas Friedman, NY Times reporter)

6. Relevance, Meaningfulness:
   A. 60 Second Recap, Jenny Sawyer
   (http://www.60secondsrecap.com/)
   Actress to students: Lead me your earbuds!
   English major, 24, rambunctiously recap the classics in 60-second Web videos;
   by Greg Topper; USA TODAY, September 2009

7. Interactive, Collaborative:
   A. Online Language Learning
   (ECpod, Mixxer, Livemocha, Babbel, KanTalk)
7. Interactive, Collaborative:
B. Collaborative Groups (Ning, Google Groups, MSN Groups, Yahoo Groups, Diligo)

8. Engagement, Effort:
A. Synchronous Learning

9. Tension, Challenge, etc.:
A. Ethical Medical Debates
10. Yields Products, Goals:
A. Movie Festivals, Concept Maps, Video Papers/Blogs, Virtual Timelines, Digital Movies

Poll #1: How many ideas did you get so far?
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.

99 seconds: What have you learned so far?
- Solid and Fuzzy in groups of two to four

III. Addressing Diverse Learners

The R2D2 Method
1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)
1. Auditory or Verbal Learners
- Auditory and verbal learners prefer words, spoken or written explanations.

Read 1a. Publishing in Open Access Journals (e.g., PLOS)

Read 1b. Course Announcements (e.g., Teaching with Twitter)

twitter

Read 1c. Podcast Paper Reflections
- Students listen to a podcast.
- Reflect on what they learned in an online forum.
- Students comment on each other's post.

Read 1d. Podcasting Medical Lectures (School of Dentistry, Univ of Michigan)
Educause Quarterly, 29(3), 2006,
http://connect.assessment.edu/Library/EDUCAUSE+Quarterly/PodcastLectures/39987

2. Reflective and Observational Learners
- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives
Reflect 2a. Critical Friend Blog Postings

Reflect 2b. Expert and Domain Specific Blogs (English Teacher Blogs)

Reflect 2c. Analyze Online Cases (problems, solutions, etc.)

Reflect 2d. 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

3. Visual Learners
- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.

Display 3a. Podcasts! (videos of scientific papers and science)
NSF, the Public Library of Science, and the San Diego Supercomputer Center created a YouTube for scientists to help demystify important research papers. See SciVee
### Display 3b. Anchored Instruction Discussions
- YouTube, CNN, BBC, TeacherTube, CurrentTV
- In a synchronous lecture, interrupt it with a summary video (could be a movie clip) explaining a key principle or concept.
- Refer back to that video during lecture.
- Debrief on effectiveness of it.

### Display 3c. Adventure Learning
- Australian adventurer Don McIntyre and teenage circumnavigator Mike Perham re-enact Capt. William Bligh's epic mutiny on the Bounty open boat voyage, September 9, 2009.

### Display 3d. Concept Mapping and Timeline Tools
- VUE, Bubble.us, Cmap, Freemind, Giffy, Mindmesser, or Mindomo.

### Display 3e. World Trends and Indices (e.g., Worldmapper)
- The Worldmapper project visualizes world stats in a map format.

### Display 3f. United Nations Opens World Digital Library, April 21, 2009

### Display 3g. Shared Online Video
- Howcast, WonderHowTo, Clip Chef, Link TV, Fora TV, etc.
Display 3h. Online Historical Document (e.g., Turning The Pages, British Library)

Display 3i. Medical Animations and Videos (find anchoring event (YouTube, CNN, BBC, TeacherTube, CurrentTV))

Display 3j. Online Timelines (US Presidents)

Display 3k. Videos of the Periodic Table

Display 3l. Online History Portals and Resources (Civil Rights Digital Library and Amistad)

Display 3m. Human Embryology Animations (Valerie O'Loughlin, Indiana University)
4. Tactile/Kinesthetic Learners

- Tactile/kinesthetic senses can be engaged in the learning process through role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.

Do 4a. Wikibooks: International Collaboration (Web 2.0 and Emerging Learning Technologies (The WELT))

Web 2.0 and Emerging Learning Technologies

Do 4b. Survey Research and Market Analysis

(c.g., Nister Poll, MicroPoll, Zoomerang, SurveyShare)

Do 4c. Online Warm-ups Activities

Just-In-Time-Teaching (JiTT)
http://webphysics.iupui.edu/jitt.html

Do 4d. Syllabus, Glossary, etc. in wiki:
Students sign up for tasks
(Ron Owston, York University)
Do 4e. Podcasts for students of pronunciation class (e.g., Tzu-Su Chen, Taiwan)

Poll #2: How many ideas did you get from the second part of this talk?
- a. None—you are an idiot.
- b. 1 (and it is a lonely #).
- c. 2 (it can be as bad as one).
- d. 3-5
- e. 6-10
- f. Higher than I can count!

Part IV: Instructional Design Considerations from the Best

What if our minds were on fire for learning?

Dual Coding Theory (DCT) (Allan Paivio, Canada)
- Dual Coding Theory (DCT), proposed by Paivio in 1972, is a model that is based on Cognitive Information Processing Theory. DCT model assumes that information is processed and stored in memory by two separate, but interconnected systems - one visual, the other verbal. DCT claims that pictures are faster and easier to recall since they are coded in both memory systems and the visual system is continuous and parallel in its organization. Verbal memory, on the other hand, is structured in discrete, sequential units.

Dual Coding Theory (Allan Paivio)

1/18/2010
The promise of multimedia learning: Using the same instructional design methods across different media
Richard E. Mayer, Learning and Instruction, 13 (2003) 125-139.

Seven Principles for the Use of Animation in Multimedia Instruction
(Mayer & Moreno, 2002)

1. The multimedia principle (present animation and narration rather than narration alone)
2. Spatial contiguity principle (present on-screen text near rather than far from corresponding animation)
3. Temporal contiguity principle (present corresponding animation and narration simultaneously rather than successively)

4. Coherence principle (exclude extraneous words, sounds, and video)
5. Modality principle (present animation and narration rather than animation and on-screen text)
6. Redundancy principle (present animation and narration rather than animation, narration, and on-screen text)
7. Personalization principle (present words in conversational rather than formal style)

The promise of multimedia learning: Using the same instructional design methods across different media
Richard E. Mayer, Learning and Instruction, 13 (2003) 125-139.

A review of research on the design of multimedia explanations:
(a) a multimedia effect: in which students learn more deeply from words and pictures than from words alone—in both book-based and computer-based environments,
(b) a coherence effect: in which students learn more deeply when extraneous material is excluded rather than included—in both book-based and computer-based environments,

The Multimedia Principle
- Adding graphics to words improves learning
  - Use a variety of graphics, including line drawings, charts, and photographs as well as motion graphics such as animation and video
  - Make sure graphics are aligned with the instructional message
- Research point
  - An average gain of 89% for learners who studied with text and graphics over learners who studied alone

The Modality Principle
- Explaining graphics with audio improves learning
  - Audio narration can greatly impact learning achievement
- Research point
  - Narrated animations improved learning 80% over animation with text explanations
**The Redundancy Principle**
- Explaining graphics with audio and redundant text can hurt learning
  - Narration and reading occur at different rates and split attention
- Research point
  - Audio explaining a graphic alone was more effective by 79% than audio explaining a graphic with redundant text

**The Coherence Principle**
- Gratuitous visuals, text, and sounds can hurt learning
  - Simple and focused is better
  - Keep from being pure entertainment or distracting
  - Includes extra text explanation (nice to know information = "seductive details")
- Research point
  - A basic lesson saw 105% more learning gains than an enhanced one

**The Contiguity Principle**
- Placing text near graphics improves learning
  - Refers to alignment of text and graphics on screen
- Research point
  - Integrating words and visuals improved retention by 68%

**The Personalization Principle**
- Use conversational tone and pedagogical agents to increase learning
- Research point
  - Programs that use first/second person rather than formal third person are more effective
  - Agents improve learning, and audio can be sufficient. Agents must use informal language for effectiveness

**Designing Interaction/Interactivity**

**What is the Interaction Rationale?**
(per Ellen Wagner, April, 2004)

- **Interaction is the most debated construct in the world of technology mediated learning design and development.**
- **In these settings, interaction is the defining attribute of the quality and value**
- **Interactivity (equated with interaction) is the most expensive component of a technology mediated learning design.**
Types of Interactions Possible?

1. Learner-Instructor
2. Learner-Learner
3. Learner-Content

4a. Learner-Self: highlighted the importance of 'self talking', or internal dialogue when engaging with learning materials (Soo & Bonk, 1998)

4b. Learner-Interface: The learner's ability to use the communication medium facilitating the online course (Hillman, Willis, & Gunawardena, 1994)

Designing Interaction/Interactivity
- Multiple types of interactions (Moore)
- Learners need templates, models, guides
- Feedback/responsiveness key
- Build teaming & collaboration
- Reflection & dialogue build knowledge
- Build consistency in design of resources
- Outcomes of interaction (Wagner)
- Simulations & games increasingly Impt

What are the Design Considerations for Learner Interaction???
(In sung Jung, 2003, Handbook of Distance Education, Moore & Carneal (Eds.))
- Multiple layers of online content & resources
- Increase social presence & interpersonal interaction
- Embed different types of interactions with detailed guidelines and good topics
- Provide quick and frequent feedback
- Include visual layouts where possible
- Allow flexible course structure

Matrix of Web Interactions
(Cummings, Bonk, & Jacobs, 2002, Internet in Higher Ed)

Instructor to Student: Syllabus, notes, feedback.
   to Instructor: Course resources, syllabi, notes.
   Practice to Student to Instructor: Tutorials, articles, news.

Student to Student: Comments, sample work, links.
   to Student: Notes, tests, papers, events.
   to Practitioner: Web links, resumes, reflections

Practitioner to Student: Internships, jobs, e-fieldstrips
   to Practitioner: Opinion surveys, files, listservs,
   to Practitioner: Forums, listservs, prof dev.

Let's Explore These Hats Again With Specific Examples!
- Technical
- Social
- Managerial
- Pedagogical

Vanessa Dennen's Research on Nine Online Courses
(sociology, history, communications, writing, library science, technology, counseling)

Poor Instructors
- Little/no feedback given
- Always authoritative
- Kept narrow focus of what was relevant
- Created tangential discussions
- Ultimate deadlines

Good Instructors
- Provided regular feedback
- Participated as peer
- Allowed perspective sharing
- Tied discussion to grades, other assessments.
- Incremental deadlines
Model of Teaching and Learning Through CMC (Gilly Salmon, 2000)

E-Moderating
E-Moderating: The Key to Teaching and Learning Online, (Gilly Salmon, 1999) Kogan Page
1. Know when to stay silent for a few days.
2. Close off unused or unproductive conferences.
3. Provide a variety of relevant conference topics.
4. Deal promptly with dominance & harassment.
5. Weave, summarize, and archive often.
6. Be an equal (co-) participant in the conference.
7. Provide sparks or interesting comments.
8. Avoid directives and right answers.
9. Acknowledge all contributions.
10. Support others for e-moderator role.

Managerial Recommendations
(Berge, 1995, The role of the online instructor/facilitator)
- Distribute lists of participants
- Provide timely administrative info
- Books, enrollment, counseling, etc.
- Change procedures that are not working
- Change misplaced subject headings
- Decisively end discussion sessions
- Don’t overload

Facilitating Student Responsibility
(The Virtual Student, Rena Pallot & Keith Pratt, 2003)
- Openness: Share from work of life
- Flexibility: Develop sense of online learning
- Honesty: Willing to give and receive feedback
- Willing to Take Charge/Responsibility
- Willing to Work Collaborate
- Post intros, blogs, create
don’t overload
- Social space, mode humor
- Give up control, co-create,
allow time for reflection
- Model open, honest feedback, appropriate commun
- Rotate facilitation or leadership roles
- Post grading rubrics

Ron Oliver, Edith Cowen University,
Collab & Constructivist Web Tasks
(McLoughlin & Oliver, 1999; Oliver & McLoughlin, 1998)
2. Case-Based and Simulated Learning: exchange
remote views; enact events online.
3. Active Learning: Design Web pages &
databases.
4. Reflective/Metacognitive Learning: Reflect in
online journals, bulletin boards.
5. Experiential Learning: Post (articulate ideas) to
discussion groups.
6. Authentic Learning: PBL, search databases

Linda Harasim’s Model of Online Collaborative Learning
1. Idea Generating: Implies divergent thinking, brainstorming, verbalization and thus
sharing of ideas and positions.
2. Idea Linking: Involves evidence of
conceptual change, intellectual progress and
the beginning of convergence as new or
different ideas become clarified and identified
and clustered into various positions.
3. Intellectual Convergence: is
typically reflected in shared understanding
(including agreeing to disagree) and is
especially evident in co-production, whether a
theory, a publication, an assignment, a work of
art.
Ideal Environment of Synchronous Trainer
Jennifer Hoffman, Online Learning Conference, 2001, Oct.;
- A private, soundproof room.
- High-speed connection; telephone; powerful computer; additional computer; tech support phone #
- Studio microphone and speakers
- A "Do Not Disturb" sign
- Near restroom; pitcher of water

Considerations: The Event
http://inSynctraining.com/InSync_Home.html/Home
- Log on early; students come 15 minutes early.
- Check to see if students brought needed items
- Vary instructional strategies; maximize interactivity
- Make it visual—color, sound, animation
- Design 10-minute breaks every 90 minutes
- Do tech checks of microphones (sound check).

Framework for Pedagogical CMC Techniques
(Paulsen, 1995, The Online Report on Pedagogical Techniques for CMC, morten@nku.edu)
1. One-alone Techniques: Online journals, online databases, interviews, online interest groups.
2. One-to-one Techniques: Learning contracts, internships, apprenticeships.
3. One-to-many Techniques: Lectures, symposiums, skits.
4. Many-to-many Techniques: Debates, simulations, games, case studies, discussion groups, brainstorming, Delphi techniques, nominal group process, forums, group projects.

How Facilitate Online Community?
- Safety: Establish safe environment
- Tone: Flexible, inviting, positive, respect
- Personal: Self-disclosures, open, stories telling
- Sharing: Share frustrations, celebrations, etc
- Collaboration: Camaraderie/empathy
- Common language: conversational chat space
- Task completion: set milestones & grp goals
- Other: Meaningful, choice, simple, purpose...

Steps in Building an Electronic Community (Palloff & Pratt, 1999)
- Clearly define the purpose of the group.
- Create distinctive gathering place for group.
- Allow members to resolve their own disputes.
- Promote effective leadership from within.
- Define norms and a clear code of conduct.
- Allow for a range of member roles.
- Allow for and facilitate subgroups.

Try the R2D2 Method!
Try TEC-VARIETY!
And hope for some magic!!!
Sample papers:
http://www.publicationsshare.com/
Archived talks:
http://www.trainingshare.com/