The Perfect E-Storm: Emerging Technology, Enhanced Pedagogy, Enormous Learner Demands, and Erased Budgets

Dr. Curtis J. Bonk
Professor, Indiana University
President, SurveyShare, Inc.
http://mypage.iu.edu/~cjbonk/
cjbonk@indiana.edu

Four Storms are Approaching!

I. Emerging Technology
II. Escalating Demands
III. Erased Budgets
IV. Enhanced Teaching

Some are scared of the storm!!!

Ok, Million Dollar Question: Which technology will impact us the most?

Storm 1. Emerging Learning Technologies

1. Assistive Technologies
2. Blogs and Online Diaries
3. OpenCourseWare and Open Educational Resources
4. Electronic Books
5. Online Communities and Learning Portals
6. Intelligent Agents
7. Wikis and Wikibooks
8. Online Games and Simulations (Massive Multiplayer Gaming)
9. Shared Online Video (YouTube, TeacherTube)
10. Peer-to-Peer Collaboration
11. Reusable Content Objects
12. Videostreaming, IP Videoconferencing
13. Virtual Worlds/Reality
14. Wearable Computing
15. Wireless Tech: Tablet PCs, Handheld Devices
16. Digital Portfolios

I'm a librarian
Technology of the 1980s

21st Century Technology: Podcasts and Wikis and Blogs, Oh My!!!!

Top 5 “In” Things on Campus
June 7, 2006, USA Today

Course Announcements (e.g., Teaching with Twitter)

Wireless in Africa and Pocket School in Latin America
http://www.receivervodafone.com/mobile-learning-in-developing-countries

Mobile Learning and Social Networking (e.g., Mixi, Yayoi Anzai, Professor Japan)
Mobile Health and Medical Education  
(Courtesy of Paul Kim, Stanford University)

Student Produced Video  
In the year since its invention, the Flip has taken 13 percent of the camcorder market, according to its maker, Pure Digital. Its size and simplicity mean it can go where most camcorders can't.

Magic Pens!  
(The Pulse from Livescribe)

Jerry Kronenberg Monday, August 4, 2008  
Boston Herald  
Designers on quest to build $12 computer

OLPC in Nigeria: School Galadima  
One Laptop Per Child foundation (OLPC)

Google
Skype, Google Talk, ChinesePod, LiveMocha, VoiceThread, YackPack, Dotsub, Chineswing, and many other Collaborative Language Learning

Online Language Learning
(Mixer, Livemocha, Friends Abroad)

YouTube Video

Video Supported Language Learning
(e.g., ECPod)

Learning Towns are Popping up!

Moodle (400,000 registered users in 193 countries speaking 73 languages)
TutorVista has 600 tutors in India and 10,000 subscribers in the United States, including Kenneth Tham in Arcadia, Calif.

The Carlyle Letters Exploring Victorian World Through Letters and The Diary of Samuel Pepys, John Evelyn

Tracking Live Internet Events (e.g., Thawing: A Colossal of an Idea) (caught Feb. 2007; thawed April 30, 2008)

Flat Classroom Projects!!! (combine blogs, videoconferencing, chat, async discussion, etc.)

Deep-Sea Bohemoth
Captain John Beanen examines the world's first intact adult male colossal squid on board his New Zealand fishing boat in February, 2007, in the Ross Sea near Antarctica. The gigantic sea creature weighs a world record 4,000 pounds. After being frozen whole for over a year, scientists at New Zealand's national museum will

Multi-Technology Tasks (e.g., Second Life, Blogging, and Photo Posting)
Stephen Mandelbrot

Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET
• Nick Currie and his girlfriend Shizu Yuasa (R) surf the Internet over breakfast in Tokyo in this handout photo. As the Internet evolves -- with its webcams, iPods, Instant Messaging, broadband, wi-fi and weblogs -- its image as a relationship-wrecker is changing. New a sociable habit is emerging among the Netorati: couple-surfing. (Nick Currie/Handout/Reuters)
• "For my birthday, he upgraded my RAM and I thought it was incredibly romantic," writes Jess.
Bonk's Addiction Q'er
1. Who has 2 or more cell phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?

What can we say about emerging technology then???

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

On to Storm 2...
Escalating (Learner) Demands

Capella Tower
225 South Sixth Street, Minneapolis
Formerly, the "Halo"

Growth of Online Learning in Secondary Schools
(Florida Virtual School; AP American History)
"Distance learning" gets its close-up
By G. Jeffrey MacDonald, Special for USA TODAY
November 2007

- More than two-thirds of all U.S. colleges and universities offer online courses, and 35% of schools offer programs that are entirely online, according to the Sloan survey, and 20% of the USA's 17 million college students say they have taken at least one course online.

We're in the Midst of Storm 3: Erased Budgets

Total and Online Enrollment in Postsecondary Institutions
Fall 2002 through Fall 2005

<table>
<thead>
<tr>
<th>Fall 2002</th>
<th>Fall 2003</th>
<th>Fall 2004</th>
<th>Fall 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td>10,511,712</td>
<td>9,996,410</td>
<td>10,321,702</td>
</tr>
<tr>
<td>On-Campus</td>
<td>1,965,819</td>
<td>1,711,702</td>
<td>1,732,763</td>
</tr>
<tr>
<td>Total</td>
<td>12,477,531</td>
<td>11,708,112</td>
<td>12,054,465</td>
</tr>
<tr>
<td>Online</td>
<td>10,515,712</td>
<td>9,996,410</td>
<td>10,321,702</td>
</tr>
<tr>
<td>On-Campus</td>
<td>1,965,819</td>
<td>1,711,702</td>
<td>1,732,763</td>
</tr>
<tr>
<td>Total</td>
<td>12,477,531</td>
<td>11,708,112</td>
<td>12,054,465</td>
</tr>
</tbody>
</table>

Sloan: Online Nation. 10 Years of Sloan Online Learning. October 2007.

Sara Corbett, professor of English at the University of Illinois-Springfield, says the fees online students become better writers because they get so much practice. NPR Special, Nov 28, 2001; Larry Abramson.

(85% of US Colleges and universities offer online courses; 28% offer fully online programs.)

University of Illinois at Springfield
Online course enrollments

UIS Online Enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>500</td>
<td>100</td>
<td>1000</td>
</tr>
<tr>
<td>1992</td>
<td>1000</td>
<td>500</td>
<td>1500</td>
</tr>
<tr>
<td>1993</td>
<td>1500</td>
<td>1000</td>
<td>2500</td>
</tr>
<tr>
<td>1994</td>
<td>2500</td>
<td>1500</td>
<td>3500</td>
</tr>
<tr>
<td>1995</td>
<td>3500</td>
<td>2000</td>
<td>4500</td>
</tr>
<tr>
<td>1996</td>
<td>4500</td>
<td>2500</td>
<td>5500</td>
</tr>
<tr>
<td>1997</td>
<td>5500</td>
<td>3000</td>
<td>6500</td>
</tr>
<tr>
<td>1998</td>
<td>6500</td>
<td>3500</td>
<td>7500</td>
</tr>
<tr>
<td>1999</td>
<td>7500</td>
<td>4000</td>
<td>8500</td>
</tr>
<tr>
<td>2000</td>
<td>8500</td>
<td>4500</td>
<td>9500</td>
</tr>
<tr>
<td>2001</td>
<td>9500</td>
<td>5000</td>
<td>10500</td>
</tr>
<tr>
<td>2002</td>
<td>10500</td>
<td>5500</td>
<td>11500</td>
</tr>
<tr>
<td>2003</td>
<td>11500</td>
<td>6000</td>
<td>12500</td>
</tr>
<tr>
<td>2004</td>
<td>12500</td>
<td>6500</td>
<td>13500</td>
</tr>
<tr>
<td>2005</td>
<td>13500</td>
<td>7000</td>
<td>14500</td>
</tr>
<tr>
<td>2006</td>
<td>14500</td>
<td>7500</td>
<td>15500</td>
</tr>
</tbody>
</table>

High Budget Surveys on College Costs for Both

Legislator

Budget Hornets for US 2007 Law Enforcement Funding

Q10.com

---

7
In the Midst of Budget Cutbacks, there are Technology Giveaways

Nature AND Nurture: Pedagogy

On to Storm 4: Enhanced Teaching (and Excellent Retention) (a swirling storm)

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

1. Tone/Climate: A. Video Course Intros (examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

2. Encouragement, Feedback, etc.: A. Instructor Presentation in Synchronous Sessions (Breeze, Elluminate, WebEx, etc.)
3. Curiosity, Fun:
A. Exploration and Demonstration:
Virtual Tours and Timelines (HyperHistory)
http://simile.mit.edu/timeline/

4. Variety, Novelty:
A. Video Streamed Lectures & Expert Commenting

5. Autonomy, Choice: A. Online Literature Search (Class Google Jockeys)
The Electronic Literati, In Search of a Voice, June 1, 2007, Chronicle of Higher Education, Jeffrey Young
(links to text, soundtracks, video clips, etc.)

6. Relevance, Meaningfulness: A. Mobile News (New York Times): A new way to take your news with you on
the iPhone and iPod touch
Connected (Part 1/2) from Abilene Christian Univ.
http://www.uca.edu/cwb2/37/2628926/2628926.html

7. Interactive, Collaborative:
A. Google Docs, Ning, Google Groups,
MSN Groups, Yahoo Groups, Diigo, etc.

8. Engagement, Effort: A. Mobile Literacy
courtesy of Paul Kim, Stanford, Pocket School
9. Tension, Challenge, etc.:
A. Electronic Guests & Mentoring

10. Yields Products, Goals:
A. Online Portfolios or Galleries (Flickr, Omnium)

R2D2 Model. Addressing Learning Styles

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.

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. ORL or Library Day
(L = Cost, M = Risk, M/H = Time)
(Bonk. 1999)

Reflect 2b. Paired Weblog Critiques

Read 1a. Wiki Steps on How to do Something: Wikihow
http://www.wikihow.com/
Reflect 2c. Partner & Team Blogs (especially English writing class)

1. Instructor or Tutor blog: resources, information, space to chat
2. Learner blog: reflections, sharing links and pics, fosters ownership of learning
3. Partner blog: work on team projects or activities
4. Class blog: international exchanges, projects, PBL
5. Revision: review and explode sentences from previous posts, add details
6. Nutshell: summarize themes or comments across blogs
7. Blog on blog: reflections on feelings, confusions, and experiences with blogs

3. Visual Learners

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

Display 3a. Pubcasts! (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 http://www.sciive.tv/

Display 3b. Concept Mapping Tools

(VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Display 3c. Anchored Instruction (find anchoring event (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 3d. Vlogging (Video Blogging)

e.g., Andy Calvin’s Waste of Bandwidth

Michael L. Wesch, Kansas State, The Machine is Using Us
Display 3e. Shared Online Video Demonstrations
(e.g., Monkey See, doFlick)

Display 3f. Human Embryology Animations
(Valerie O'Loughlin, Indiana University)

Display 3g. Broadcast Surgeries
Evaluating an In-Vivo Surgical Training Demonstration
over Broadband Internet

4. Tactile/Kinesthetic Learners
- Tactile/kinesthetic senses can be engaged in the learning process are 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))

Do 4b. Survey Research and Market Analysis
(e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)
Do 4d. Virtual Worlds/Virtual Reality/MMOG
Wednesday, August 30, 2006
Harvard Law School (Charles & Rebecca Nesson)
Chronicle of Higher Ed (open to the public)

Recap of the Perfect E-Storm....
1. Emerging Technology
2. Escalating (Learner) Demands
3. Erased Budgets
4. Enhanced Teaching

Try the R2D2 Method!!!
Try TEC-VARIETY!!!
Sample papers at: http://www.publicationshare.com/
Archived talks at: http://www.trainingshare.com/

Any questions, comments, or concerns?