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!

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. 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
Club Penguin
(bought by Disney for $700 million in 2007)

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

One of Michelle Tanner's deaf students at Gerald Wright Elementary holds an iPod and watches a video of her signing the week's vocabulary words. The iPods were purchased with a grant from Qwest.
Classrooms go high-tech. By Erin Stewart, Deseret Morning News, March 6, 2007

What If the World was Beyond our World?
NASA's Hubble Space: Google Sky) USA Today, August 22, 2007
http://earth.google.com/sky/index.html
Global Nomads Group
http://www.gng.org/home.html

The Complete Works of Charles Darwin

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

TutorVista has 600 tutors in India and 10,000
subscribers in the United States, including Kenneth
Tham in Arcadia, Calif.
Music recording artist John Oates of the band Hall & Oates breaks down his technique on the '70s hit "She's Gone" in his iVideosong entry.

Music recording artist Graham Nash takes viewers through "Teach Your Children," a song he wrote for Crosby, Stills, Nash & Young's "Déjà Vu" album in 1970.

What can we say about emerging technology then???

- It is everywhere!!!!!!!
- Resistance is futile!!!!!!!
**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?

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

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

**Keeping Pace with K - 12 Online Learning**
A Review of State-Level Policy and Practice

**Illinois Virtual High School**
(per Matthew Wicks, October 2008)

| Total | Growth by Year | Growth by Helena Time | Growth by Learning Time | Growth by Program Time | Growth by School Time | Growth by High School Time | Growth by Education Time | Growth by Time Program | Growth by Time School | Growth by Time High School | Growth by Time Education |
|-------|----------------|-----------------------|------------------------|------------------------|-----------------------|--------------------------|--------------------------|------------------------|-----------------------|--------------------------|-------------------------|------------------------|
Growth of Online Learning in Secondary Schools
(Florida Virtual School; AP American History)

Indiana University High School
4,000 students and 1,400 enrolled in diploma programs (interest from China, India, and Nigeria as well as military and adults who never completed a high school degree)
(per Bruce Colston, Director of IUHS, Oct 2008)

Total and Online Enrollment in Postsecondary Institutions
Fall 2002 through Fall 2006
(five-degree-granting public colleges)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrollment</th>
<th>Online Enrollment</th>
<th>Annual Growth Rate</th>
<th>Online Enrollment as % of Total Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2002</td>
<td>16,879,710</td>
<td>1,375,987</td>
<td>1.7%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Fall 2003</td>
<td>17,950,679</td>
<td>1,267,987</td>
<td>1.7%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Fall 2004</td>
<td>18,825,043</td>
<td>1,213,183</td>
<td>1.2%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Fall 2005</td>
<td>19,185,500</td>
<td>1,206,050</td>
<td>0.9%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Fall 2006</td>
<td>17,685,500</td>
<td>1,348,381</td>
<td>1.5%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

Source: Higher Education's Five-Year Challenge (March 2007)

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

We're in the Midst of Storm 3: Erased Budgets
In the Midst of Budget Cutbacks, there are Technology Giveaways

Nature AND Nurture: Pedagogy

Technology

People, Society, Culture, etc.

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

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)


1. Tone/Climate: (open, inviting)
A. Create a Class Wiki (Wikispaces)
2. Encouragement, Feedback, etc.: A. Clickers; Innovation is but one click away...

3. Curiosity, Fun: A. Virtual Field Trips


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. Real Explorer or Teacher Interaction
Jean Pennycook (Geography of Childhood)

Candace Peachie, standing, uses EPals in her class. By STEVELOHRI, Published: Feb. 24, 2008

in2books
Adult pen pals for books read
7. Interactive, Collaborative: C. International Children’s Digital Library (ICDL) project (Univ. of Maryland, Black Beauty, Aesop’s Fables, Little Red Riding Hood, Grimm’s Fairy Tales, Robinson Crusoe, and Mother Goose.

8. Engagement, Effort: A. Mobile Literacy (courtesy of Paul Kim, Stanford, Pocket School)

9. Tension, Challenge, etc.: A. Flat Classroom Projects!!! (combine blogs, Ning videoconferencing, chat, async discussion, etc.)

10. Yields Products, Goals: A. Film Festivals and Competitions

R2D2 Model. Addressing Learning Styles
Empowering Online Learning

1. Auditory or Verbal Learners
   - Auditory and verbal learners prefer words, spoken or written explanations.

The R2D2 Method
1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)

Read 1a. Wiki Steps on How to do Something: Wikihow
http://www.wikihow.com/

Read 1b. Kids Podcasts

Read 1c. Reflection on Online Contents:
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)
- Have students spend a day in the library or online finding and summarizing a set number of articles.
- Have them bring to class or post abstracts to an online forum.
- Share in small groups interested in similar topics.
- Perhaps give each student 1-2 minutes to describe what found in a chat.

Reflect 2b. Paired Weblog Critiques

3. Visual Learners

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

Display 3a. Concept Mapping Tools
(VUE, Bubble.us, Cmap, Freemind, Gliffy, Mindmaister, or Mindomo)

Display 3b. 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.
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. Hands-On Frog Dissection (Net Frog, Univ. of Virginia)

Do 4c. Student Podcast (in schools—kids have power!)

"Just the word 'podcast' scares a lot of teachers away," Ms. Schrock said. "There are a lot of misconceptions."

"All you need is a computer, access to the Internet and a microphone that you can buy at Toys 'R' Us," Mr. Warlick said. "I listen to podcasts on my computer." (NY Times, Jan 25, 2006)

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/