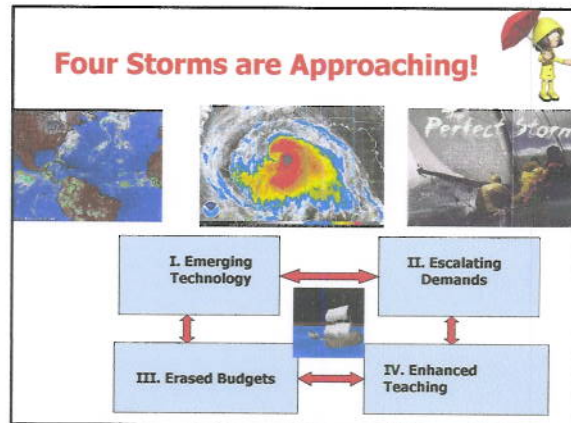


The Perfect E-Storm: Emerging Technologies, Enormous Demand, and Erased Budgets

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



Storm 1. Emerging Learning Technologies

Poll #1: Which of these is the most important? (pick one)

1. Assistive Technologies
2. Blogs and Online Diaries
3. OpenCourseWare and Open Educational Resources
4. Digital Books
5. Social Networking Technology
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 and Portals
12. Videostreaming, IP Videoconferencing
13. Virtual Worlds/Reality
14. Wearable Computing
15. Wireless Tech: Tablet PCs, Handheld Devices
16. Digital Portfolios

Tech & Learning, Nov 2009

Educators are currently using many content-sharing tools personally, professionally, and in the classroom.

TOP EIGHT CONTENT-SHARING TOOLS

Tool	Personal	Professional	Classroom
YouTube	High	High	High
Wikispaces	Medium	Medium	Medium
Blogs	Medium	Medium	Medium
Google Docs	Medium	Medium	Medium
RSS Feeds	Low	Low	Low
Wikis	Low	Low	Low
Twitter	Low	Low	Low
Podcasts	Low	Low	Low

1. New Search Technology (timeline oriented)

2. Google Sky
What if the World was Beyond our World?
 NASA's Hubble Space) USA Today, August 22, 2007

The image shows a screenshot of the Google Sky website. It features a search bar at the top, several large, vibrant images of galaxies and nebulae, and a sidebar with navigation options. The text at the top reads "2. Google Sky What if the World was Beyond our World? NASA's Hubble Space) USA Today, August 22, 2007".

3. iPhone Applications
Pull yourself away from that iPhone and read this story, By Mary Brophy Marcus, USA Today, October 5, 2009

- 50 million iPhone users and 85,000 applications.

The image is a collage related to iPhone applications. It includes a person sitting at a desk with a laptop, several iPhones displaying different apps, and a hand holding an iPhone. The text at the top reads "3. iPhone Applications Pull yourself away from that iPhone and read this story, By Mary Brophy Marcus, USA Today, October 5, 2009". Below the collage, it says "Pull yourself away from that iPhone and read this story".

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

The image shows screenshots of the Farmville social networking game. On the left, there's a text box that says "For social networks, it's game on". In the center, there's a screenshot of the game interface with the word "FARMVILLE" in large letters. On the right, there's another screenshot of the game showing a farm scene with various animals and buildings.

5. e-Book Readers
(e.g., Barnes & Noble unveils its e-reader, USA Today, October 21, 2009)

The image shows an e-reader device, likely a Barnes & Noble Nook, being held by a hand. In the background, there's a person standing next to a large screen displaying the Barnes & Noble website. The text at the top reads "5. e-Book Readers (e.g., Barnes & Noble unveils its e-reader, USA Today, October 21, 2009)".

6. Digital Textbook Projects (Korea)
Includes: dictionary, email and forums, games, simulations, hyperlinks, multimedia, authoring, data search, study aids, evaluation, etc. (112 schools as of 2009; free for all schools by 2013)

The image shows a screenshot of a digital textbook project interface. It features a large green arrow pointing to the right, with various icons representing different types of content like books, games, and simulations. The text at the top reads "6. Digital Textbook Projects (Korea) Includes: dictionary, email and forums, games, simulations, hyperlinks, multimedia, authoring, data search, study aids, evaluation, etc. (112 schools as of 2009; free for all schools by 2013)".

7. TED
Tech Confab With a Conscience Goes Global
 USA Today, July 21, 2009

The image shows a screenshot of a TED conference presentation slide. The slide features the TED logo and a large image of a hand holding a glowing globe. The text at the top reads "7. TED Tech Confab With a Conscience Goes Global USA Today, July 21, 2009".

8. Live Streaming (e.g., Zoo Animals on Demand) USA Today, September 8, 2009

Littlest patients find distraction, comfort in live feeds from zoos

This collage illustrates live streaming technology in education. It features a young boy in a blue shirt looking at a screen, a tiger in a zoo enclosure, and a giraffe. The images are arranged in a grid-like fashion, showing various live feeds from zoos.

9. OpenCourseWare and OER (MIT Highlights for High School and BLOSSOMS Project)

This block shows screenshots of educational resources. On the left is the MIT OpenCourseWare website with a 'Highlights for High School' section. On the right is the BLOSSOMS project website, which includes a video player showing a man in a white shirt and tie presenting in a classroom setting.

10. Mobile Video Blogging (Stanford, Paul Kim)

This block illustrates mobile video blogging. It includes two photos of students sitting at desks, one using a laptop and another using a tablet. To the right is a screenshot of a mobile video blogging interface with a 'Channel vlogind2' header and a video player showing a hand-drawn diagram with mathematical equations like $x^2 + 11x + 28 = 0$.

11. Simulations (e.g., Virtual Astronaut from WisdomTools)

This block shows a simulation interface for 'Virtual Astronaut'. The title 'VIRTUAL ASTRONAUT' is prominent, with 'STEM LEARNING' and 'Click to Play' 'EXPLORATION' below it. The background features a sunset over a landscape. A video player shows a first-person view from inside a spacecraft module.

12. Global Collaboration (e.g., Flat Classroom Projects!) (combine blogs, videoconferencing, chat, async discussion, etc.)

This block illustrates global collaboration through Flat Classroom projects. It features several screenshots of project websites, including 'About Us' and 'Horizon Project' pages. There are also photos of students from various countries participating in these projects.

13. Global Collaboration continued EPals and iEARN (International Education and Resource Network)

This block shows screenshots of EPals and iEARN websites. The EPals website includes a world map and a 'Start Here' section. The iEARN website features a '20th Anniversary' banner and various project listings. There are also photos of students using computers.

14. Interactive Videoconferencing Global Nomads Group <http://www.gng.org/home.html>

15. Exercise Learning College technology 'catching up' with students By Kathleen Gray and Robin Erb, USA TODAY, October 6, 2009

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.

16. Connexions Growth January 2009

>8,000 modules (3-5 pages)
>425 collections (books and courses)
multiple languages
engineering, computer science,
nanotech, physics, statistics, math,
history, music, bio-diversity, botany,
bio-info, IP, BRIT, UNESCO, UN, Sigma
Xi, ...
from authors *worldwide*

Usage October 2008
45 million hits
2m page views
1m unique users
from 200 countries

17. Mobile Learning

18. 'One Laptop Per Child' program collides with reality, Toronto Globe and Mail, Oct 15, 2009 Bhutan, Khendum Gyabak (Univ. of Texas at El Paso)

19. Moodle (620,000 registered users in 204 countries speaking 78 languages, 2/10/2009)

20. Text Messaging. "This Generation: Always Connected: 18 and Under: Texting, Surfing, Studying?" NY Times, October 13, 2009, PERRI KLASS, M.D

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

Growth of Online Learning in Secondary Schools (Florida Virtual School; AP American History)

Michigan Virtual School (11,000+ students, Dan Schultz, October 2008)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Enrollments*	180	676	2,303	5,591	9,670	9,917	6,072	8,041	11,000
Schools served**	16	101	194	311	300	426	672	1,040	1,185
Unique courses	6	12	27	193	137	162	190	251	200

*This includes only approved semester length enrollments.
 **This includes home school enrollments.
 ***These are estimates.

Indiana University High School (4,000 students and 1,400 in diploma programs)

Adora Svitak, age 12, World's Youngest Teacher

Keeping Pace with K-12 Online Learning

A Review of State-Level Policy and Practice

2007

Percent Change	Number of Programs
Increase > 50%	1
Increase 35-50%	1
Increase 11-35%	1
Increase 5-10%	1
No Change	10
Decline 5-10%	1
Decline 11-25%	1
Decline 26-50%	1
Decline > 50%	1

Figure 4: Number of programs reporting percent change in number of course registrations (for supplemental programs) and enrolled students (for full-time programs) between school years 2005-2006 and 2006-2007. One program reported a decline of 50% or higher, 10 programs reported no change.

Tech & Learning, Nov 2009

news & trends

FAST FACTS ABOUT ONLINE LEARNING

K-12 online learning is an estimated **\$50 million** market that is growing at an estimated pace of 30% annually.

- 44** states have significant supplemental online learning programs, or significant full-time programs (in which students take most or all of their courses online), or both.
- 34** states offer state-led programs that are designed, in most cases, to work with school districts to supplement course offerings for students.
- 57%** of public secondary schools in the U.S. provide access to students for online learning.
- 72%** of school districts with distance education programs planned to expand online offerings in the coming year.

SOURCE: THE INTERNATIONAL ASSOCIATION FOR BLENDED LEARNING (IAB) IS A NON-PROFIT ORGANIZATION THAT ENHANCES EDUCATIONAL INNOVATION AND OPPORTUNITY TO ENHANCE QUALITY EDUCATIONAL TEACHING AND LEARNING.

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

STIMULUS BY STATE

ESTIMATED JOB CREATION

Source: CNN Money.com

USA TODAY News

Report: 10 states face looming budget disasters

By Judy Lin, Associated Press Writer

SACRAMENTO, Calif. — A study released Wednesday warns that nine states are heading toward an economic disaster similar to California's ongoing fiscal crisis that has been marked by IOUs and budget-busting deficits.

The budget woes could mean higher taxes, accelerated layoffs of government employees, fewer services in the most populous states.

Arizona, Florida, Illinois, Rhode Island and Wisconsin.

The analysis urged lawmakers to act. The 10 states according to the report.

Obama to Invest in High-Tech Education, CNN Money, September 21, 2009

CNNMoney.com

Obama urges investment in high-tech education


The president says training Americans for jobs of the future will help create a more stable foundation for the economy.

NEW YORK (CNNMoney.com) — President Obama on Monday pushed his plans to rewire the nation's economy more stable in the future by investing in education for high-tech industries.


The president unveiled a new "innovation strategy" that builds on \$100 billion of economic stimulus funds to support entrepreneurship, education, infrastructure and other investments.

The plan aims to make the U.S. economy more competitive and help prevent volatile "boom and bust" cycles in the

**On to Storm 4: Enhanced Teaching
(a swirling storm)**



**Part I: Some Online
Motivational Ideas**




**We are not motivating students with
the technologies that they love**



**Poll #2: Which of these is the most
important for motivating students?
(Pick just one)**

1. Supportive, appropriate challenge, meaningful.
2. Teach goal setting and self-reinforcement.
3. Offer rewards for good/improved performance.
4. Novelty, variety, choice.
5. Game-like, fun, fantasy, curiosity, suspense.
6. Divergence, dissonance, peer interaction.
7. Allow to create finished products.
8. Provide immediate feedback.
9. Show intensity, enthusiasm, interest.
10. Make content personal, concrete, familiar.



**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: (open, inviting)
A. Create a Class Wiki (Wikispaces)**



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

Upper Extremity Muscles

What is the following an ANATOMY? (e.g. the word MUSCLES)

- the subscapular, latissimus, teres major
- the triceps, deltoid, pectoralis
- the biceps, triceps, pectoralis
- the biceps, triceps, pectoralis
- the biceps, triceps, pectoralis

3. Curiosity, Fun:
A. Virtual Field Trips

With virtual field trips, students can have a personal tour of Hawaii Volcanoes National Park.

Technology | Science | Education | News | Local | Life | Arts

Web brings national parks closer to kids

By Steve Delaney | Associated Press | Updated on 11/19/09 10:00 AM

By the way, the park is 200 miles from here and the web is 200 miles from here.

Ranger Rachel Zimmer speaks with Syler Peralta-Ramos, a fourth-grader at Jackson Hole's Journeys School.

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

Japanese fishermen brace for giant jellyfish

First U.S. man since 1882 wins NYC race

Australia: Boat sinks with 39 on board

4. Variety, Novelty:
A. Free Text Chats
 (Bonk, 2007; Mei-Ya Liang, 2007)

Free Text Chats

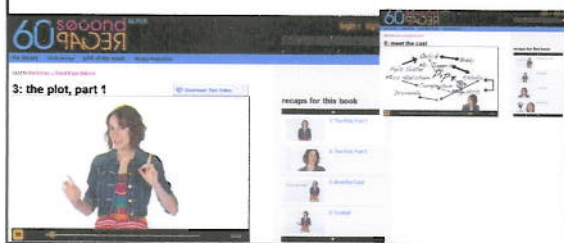
5. Autonomy, Choice: A. Online Literature Search (Class Google Jockeys)

Online Literature Search

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

Clickers; Innovation is but one click away...

6. Relevance, Meaningfulness:
A. 60 Second Recap
<http://www.60secondrecap.com/>
 Actress to students: Lend me your earbuds!
 English major, 24, rambunctiously recaps the classics in 60-second Web videos; By Greg Toppo; USA TODAY, September 2009




7. Interactive, Collaborative:
A. Collaborative Documents (Google Docs)

Google docs

Create and share your work online

- Shared from and view to your device
- Edit anytime, from anywhere
- Pick who can access your documents
- Change changes in real time
- Files are stored instantly online
- It's free!


Take a tour | Sign In/Out



7. Interactive, Collaborative: B. 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.



7. Interactive, Collaborative:
C. Monster Writing (describe monster in writing to partner and must draw it); monsterproject.wikispaces.com




8. Engagement, Effort:
A. Follow Online Adventure
 Australian adventurer Don McIntyre and teenage circumnavigator Mike Perham to re-enact Capt William Bligh's epic mutiny on the Bounty open boat voyage, September 9, 2009



9. Tension, Challenge, etc.:
A. Ethical Medical Debates

Students to protest human body exhibit

Maggie Ybarra
 Issue date: 3/1/02 Section: News
 Page 1 of 1



10. Yields Products, Goals: A. Movie Festivals, Concept Maps, Video Blogs, Virtual Timelines, Digital Movies

Addressing Learning Styles

The R2D2 Model

Curtis J. Bonk | Ke Zhang

Empowering Online Learning

100+ Activities for Reading, Reflecting, Displaying & Doing

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. Kids Podcasts

Poll #3: Podcast Questions (Check all that apply)

1. Have you listened to a podcast?
2. Do you listen to a certain podcast on a regular basis?
3. Have you created a podcast?
4. Have you created a vodcast?
5. Do you think podcasting is simply more talking heads?



Read 1b. Art and History Exhibits




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

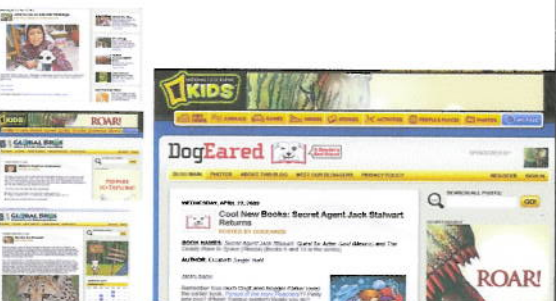


2. Reflective and Observational Learners

- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives




Reflect 2a. Partner & Team Blogs (especially English writing class)




Reflect 2b. ORL or Library Day (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.



3. Visual Learners


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



Display 3a. Online Timelines (US Presidents)




Display 3b. Video iPod Vocabulary Training



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

Display 3c. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

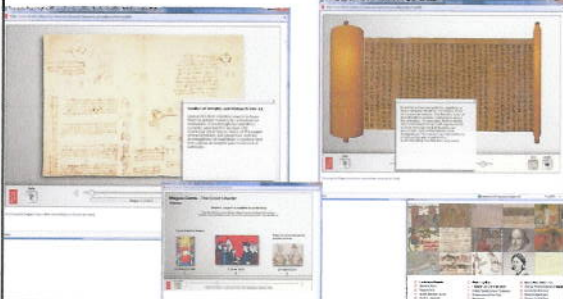


Display 3d. United Nations Opens World Digital Library, April 21, 2009

Chronicle of Higher Ed, <http://www.wdl.org/en/>



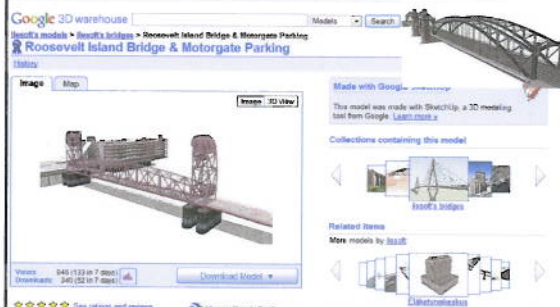
Display 3e. Online Historical Document (e.g., Turning The Pages, British Library)



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



Display 3g. Download and Use Online 3D Sketches (Google SketchUp; download http://sketchup.google.com/3dwarehouse)



4. Tactile/Kinesthetic Learners

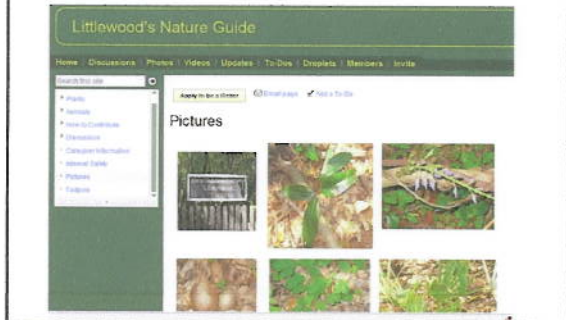
- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.



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



Do 4b. Wikis for Kids to Share




Do 4c. Junior Wikibooks

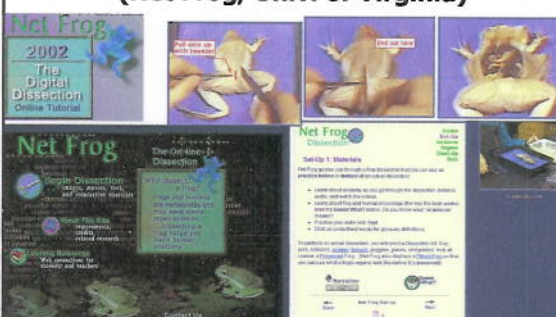


**Poll #4: Wiki Questions
(check all that apply)**

1. I regularly read Wikipedia articles just for fun.
2. I have read one or more Wikibooks.
3. I seek out Wikipedia for content.
4. I have edited or written new articles on Wikipedia or Wikibooks.
5. I think it is ok for college students to cite from Wikipedia.



**Do 4d. Hands-On Frog Dissection
(Net Frog, Univ. of Virginia)**



**Do 4e. Online Performances
Virtual Worlds/Reality/MMOG
(e.g.,Shakespeare plays reenacted)**




Recap of the Perfect E-Storm....

1. Emerging Technology
2. Escalating (Learner) Demands
3. Erased Budgets
4. Enhanced Teaching



Poll #5: 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!



**Try the R2D2 Method!!!
Try TEC-VARIETY!!!**

Sample papers :
<http://www.publicationshare.com/>
Archived talks:
<http://www.trainingshare.com/>

