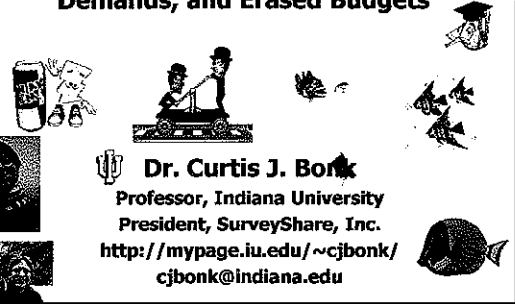
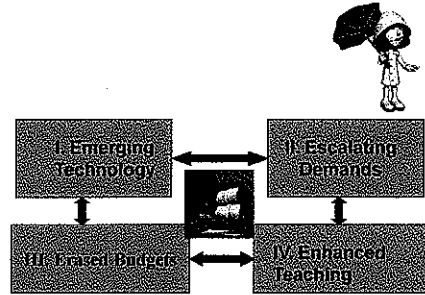


**The Perfect E-Storm: Emerging Technology, Enhanced Pedagogy, Enormous Learner Demands, and Erased Budgets**



**Dr. Curtis J. Bonk**  
 Professor, Indiana University  
 President, SurveyShare, Inc.  
<http://mypage.iu.edu/~cjbok/>  
[cjbok@indiana.edu](mailto:cjbok@indiana.edu)

**Four Storms are Approaching!**



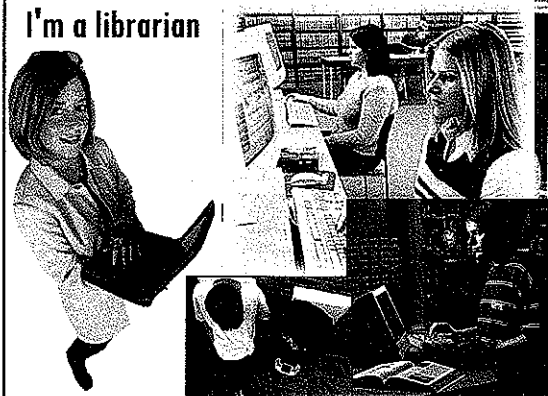
**Ok, Million Dollar Question: Which technology will impact us the most?**



**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. 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**





### Club Penguin

(bought by Disney for \$700 million in 2007)

### OLPC in Nigeria: School Galadima 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>

Home  
About Global Kids  
In The Schools  
Leadership Programs  
Online Leadership Program  
High School For Global Citizenship  
Training & Services

**VIRTUAL WORLDS**

- Gaming
- Dialogues
- Virtual Worlds
- Digital Media Initiative
- The CLP Blog/Web 2.0
- Professional Services
- The D.I.D. Initiative

In 2006, following extensive research into the educational potential of virtual worlds, Global Kids became the first nonprofit to develop a dedicated space for conducting programming in the

## The Complete Works of Charles Darwin

*Charles Darwin*  
The Complete Works of Charles Darwin Online  
Digitized, Annotated, Annotated, Annotated

Contents  
or  
Advances

Contributors

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

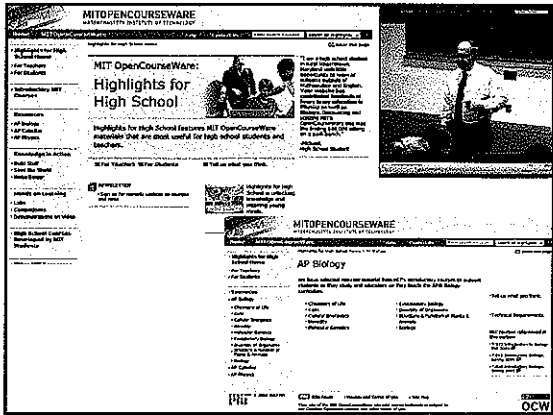
**Deep-Sea Behemoth**  
Captain John Bennett examines the world's first intact adult male colossal squid on board his New Zealand fishing boat in February, 2007, in the Ross Sea near Antarctica. The gigantic sea creature weighs a world record 1,089 pounds. After being frozen whole for over a year, scientists at New Zealand's national museum will

**World Business**

Hello, India! I Need Help With My Math

TutorVista has 600 tutors in India and 10,000 subscribers in the United States, including Kenneth Tham in Arcadia, Calif.

### Read Text (e.g., Turning The Pages, British Library)



**iVideosong, August 25, 2008,**  
**USA Today**

Learn guitar from rock gods on [iVideosongs.com](http://iVideosongs.com)

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 *Deja Vu* album in 1970.



**Yahoo! Teachers**

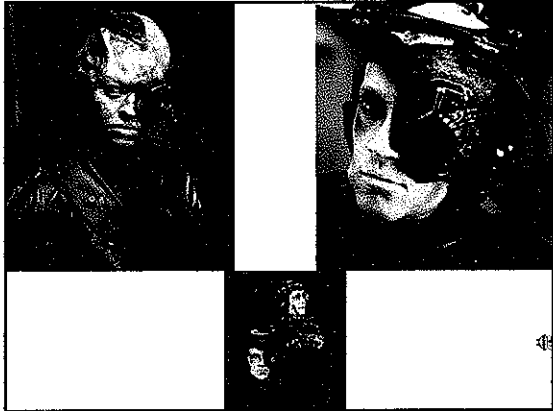
The image shows a screenshot of the Yahoo! Teachers website. The page features a navigation bar with links like "Home," "About Us," "Contact Us," and "Help." The main content area includes a "Get ready! It's coming..." section with a video thumbnail, a "Welcome teachers!" section with a photo of a teacher, and a "Teacher spotlight" section. The website is designed to provide resources and support for educators.

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

A collage of various software interfaces for language learning. The central focus is the ECPod (Enhanced Computer Program) interface, which displays video content and interactive elements. Surrounding it are other software windows, including a "Video Supported Language Learning" window and a "Language Learning" window. The collage illustrates the integration of video and technology in language education.

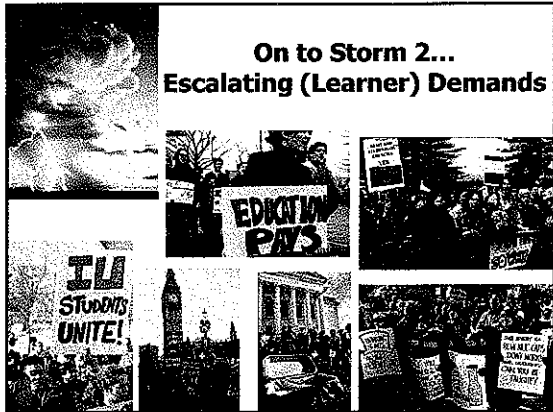
**What can we say about emerging technology then???**

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

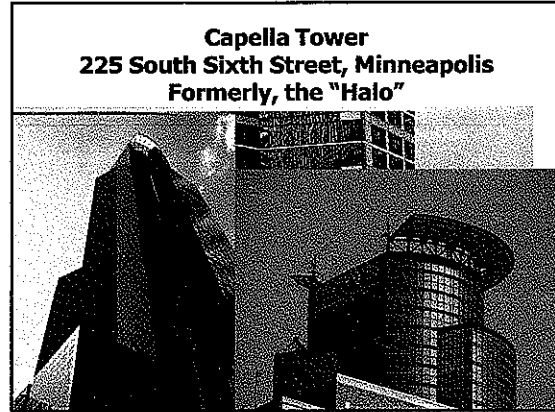


### Bonk's Addiction Q'er

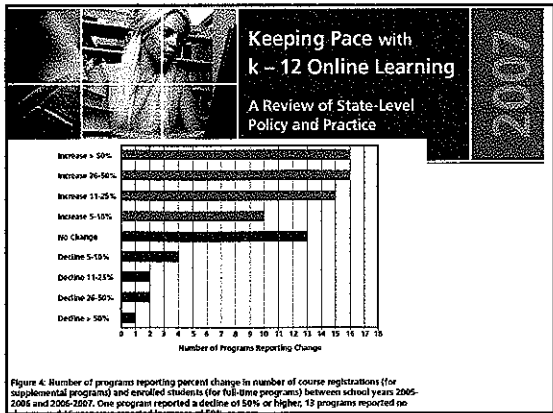
1. Who has 2 or more cell phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?



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



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



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

#### IVHS Growth

Term	Growth By Term		Growth by Academic Year		
	Enrollments	Percent Increase (Decrease) over previous year	Academic Year	Enrollments	Percent Increase Over Previous
Spring 2001	97	N/A	2001-2002	417	N/A
Fall 2001	202	71%		78%	88%
Spring 2002	180	9%		1222	104%
Summer 2002	10	104%	2002-2003	712%	104%
Fall 2002	457	126%		1222	104%
Spring 2003	635	233%		1222	104%
Summer 2003	148	83%	2003-2004	1660	59%
Fall 2003	788	642%		78%	104%
Spring 2004	971	53%		1660	59%
Summer 2004	280	71%	2004-2005	3240	96%
Fall 2004	1145	52%		68%	104%
Spring 2005	1568	93%		3240	96%
Summer 2005	538	124%	2005-2006	2720	16%
Fall 2005	385	-14%		78%	104%
Spring 2006	1215	325%		2720	16%
Summer 2006	541	1%	2006-2007	2043	7%
Fall 2006	1013	3%		78%	104%
Spring 2007	1207	2%		2043	7%
Summer 2007	723	245%	2007-2008	4214	47%
Fall 2007	1419	40%		78%	104%
Spring 2008	1665	32%		4214	47%
Summer 2008	1064	30%			

### Growth of Online Learning in Secondary Schools

(Florida Virtual School; AP American History)

GlobalSchoolNet.org  
Florida Virtual School

### 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)

INDIANA UNIVERSITY High School

### The Voyages of S/V roam

2006 VOYAGE  
ARACAKI BRAZIL TO CHARLESTON SOUTH CAROLINA

ARACAKI BRAZIL TO CHARLESTON SOUTH CAROLINA

### Total and Online Enrollment in Postsecondary Institutions

Fall 2002 through Fall 2006

(For Degree-Granting Institutions)

	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Annual Growth Rate Online Enrollment	Online Enrollment as Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,070	NA	0.7%
Fall 2003	16,900,479	1.7%	1,971,387	23.0%	11.7%
Fall 2004	17,272,043	2.2%	2,329,783	16.2%	13.5%
Fall 2005	17,428,500	0.8%	3,180,050	36.5%	18.2%
Fall 2006	17,847,720	1.3%	3,488,381	9.7%	19.8%

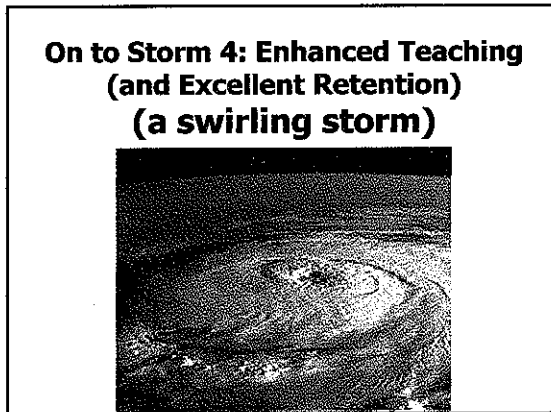
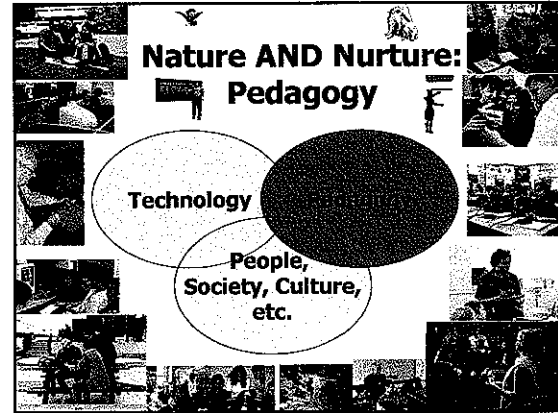
SOURCE: Online Nation: Five Years of Growth in Online Learning (October 2007)

Sara Cordell, professor of English at the University of Illinois-Springfield, says she feels online students become better writers because they get so much practice. NPR Special, Nov 29, 2007, Larry Abramson. (67% of US Colleges and universities offer online courses; 35% offer fully online programs.)

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

### Tight Budget Squeezes Out College Issues for Bush

Changes in state appropriations...  
iLegislator  
Bush Budget Proposed for FY 2007 Cuts Education Funding



- ### 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)

See: Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. NY: Plenum Press.

## 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**

**4. Variety, Novelty:**  
**A. Explore Human Body and Museum Exhibits**

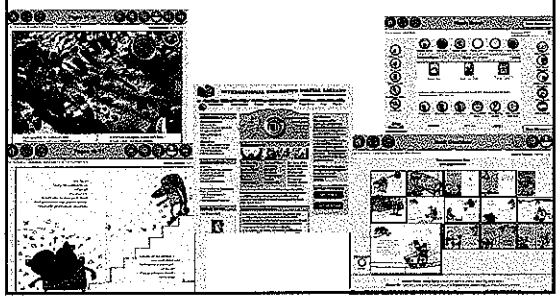
**5. Autonomy, Choice: A. Online Literature Search (Class Google Jockeys)**  
**The Electronic Literati, in Search of a Voice, June 1, 2007, Chronicle of Higher Education, Jeffrey Young (links to text, soundtracks, video clips, etc.)**

**6. Relevance, Meaningfulness: A. Real Explorer or Teacher Interaction**  
**Jean Pennycook (Geogra...)**

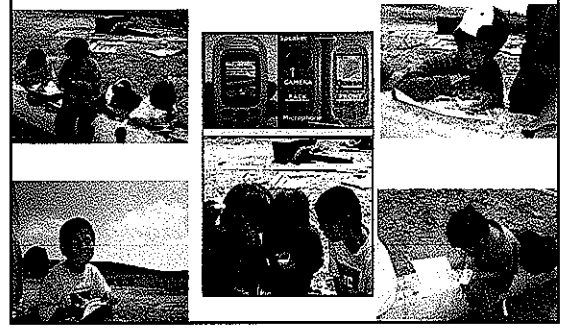
**7. Interactive, Collaborative:**  
**A. EPals has for-profit and nonprofit arms. Candace Pauchnick, standing, uses its tools in her class. By STEVE LOHR, Published: Feb. 24, 2008 New York Times**  
<http://www.nytimes.com/2008/02/24/business/24social.html>



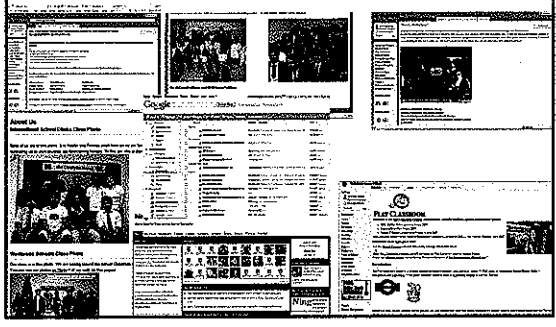
**7. Interactive, Collaborative: C. International Children's Digital Library (ICDL) project (Univ. of Maryland, *Black Beauty, Aesop's Fables, Little Red Riding Hood, Grimm's Fairy Tales, Robinson Crusoe, and Mother Goose.***



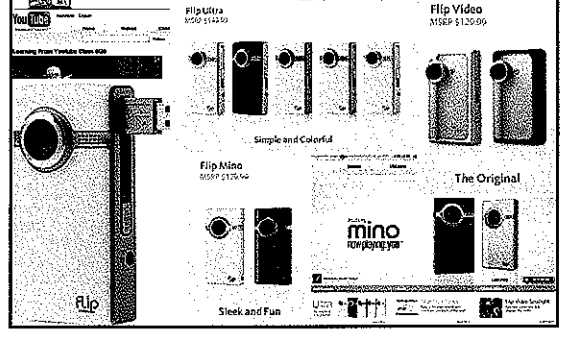
**8. Engagement, Effort: A. Mobile Literacy (courtesy of Paul Kim, Stanford, Pocket School)**



**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**



**99 Seconds Stop and Share: Top Three Things Learned so Far!**

**R2D2 Model. Addressing Learning Styles**

Curis 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. Wiki Steps on How to do Something: WikiHow

<http://www.wikihow.com/>

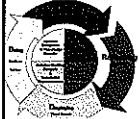
### Read 1b. Kids Podcasts

### Read 1c. Reflection on Online Contents:

The Carlyle Letters Exploring Victorian World Through Letters and The Diary of Samuel Pepys, John Evelyn (Great Plague, Great Fire), Charles Dickens, Erasmus Darwin (grandfather of Charles Darwin), Mary Wollstonecraft Shelley, Robert Browning, John Stuart Mill, Ralph Waldo Emerson, Elizabeth Barrett Browning, and Alfred Tennyson

## 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.

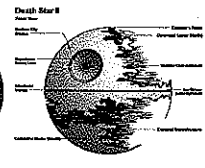


## Reflect 2b. Paired Weblog Critiques

Author	Topic	Category	Comments
John Doe	Education	Classroom	1
Jane Smith	Technology	Software	2
Bob Johnson	Science	Research	0
Alice Brown	History	Teaching	3
Charlie White	Mathematics	Concepts	1
Diana Green	Language	Grammar	0
Frank Black	Art	Visuals	2
Grace King	Music	Theory	1
Henry Lee	Physical Education	Activities	0
Ivy Hill	Health	Wellness	1
Jack Adams	Business	Management	2
Karen Baker	Law	Legal	0
Liam Clark	Engineering	Design	1
Mia Evans	Architecture	Design	0
Noah Foster	Environmental	Science	1
Olivia Grant	Philosophy	Thought	0
Peter Harris	Sociology	Society	1
Quinn King	Psychology	Mind	0
Rachel Lee	Anthropology	Culture	1
Samuel Miller	Geography	Places	0
Tina Moore	Political Science	Government	1
Uma Taylor	Communication	Media	0
Victor White	Journalism	Writing	1
Wendy Black	Public Administration	Policy	0
Xavier Green	International Studies	Global	1
Yvonne King	Area Studies	Regional	0
Zoe Lee	Interdisciplinary	Cross-disciplinary	1

## 3. Visual Learners

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



## Display 3a. Concept Mapping Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, 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/>

