How the Learning World Become Flat

Curtis J. Bonk, Professor, Indiana University
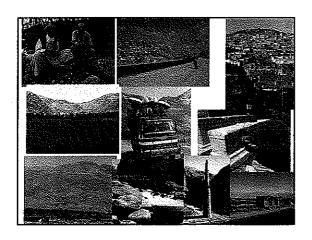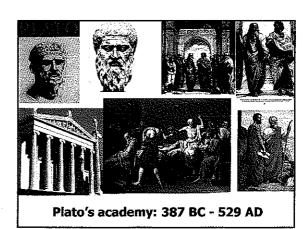President, SurveyShare
cjbonk@indiana.edu
http://php.indiana.edu/~cjbonk

Do You Share?
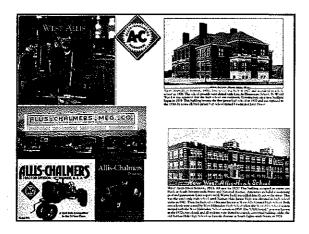
1. Who has shared music in an iPod or MP3?
2. Who has used collab software? (Google Groups, Yahoo Groups, Sharepoint)
3. Who has used online phone services such as Skype or Google Talk?
4. Who has been on an online team or group?
5. Who is in a school which uses international exchanges or expert guests?
6. Who has used Curriki, MERLOT, Connexions, or the MIT open courses?
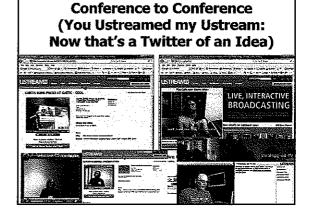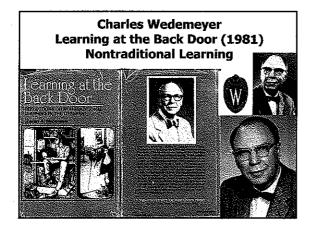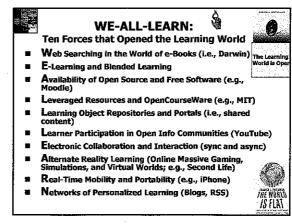7. Who has used Wikipedia or YouTube?

Plato's academy: 387 BC - 529 AD

Conference to Conference
(You Ustreamed my Ustream:
Now that's a Twitter of an Idea)

Charles Wedemeyer
Learning at the Back Door (1981)
Nontraditional Learning

The Ten Forces that
Flattened the World
Triple Convergence: (1) new economic
players, (2) playing fields, and (3) processes.

1. 11/9/89: Berlin Wall came down
2. 8/9/95: Netscape went public
3. Work Flow Software (e.g., PayPal and eBay)
4. Open-Sourcing (Self organ collab communities; Mosiac, Apache, Wikipedia, Linux, Mozilla)
5. Outsourcing (Y2K)
6. Offshoring (e.g., China, Mexico, Thailand)
7. Supply-Chaining (e.g., Walmart)
8. Insourcing (UPS fixing Toshiba laptops)
9. In-forming (e.g., Google, Yahoo!, MSN Web Search)
10. The Steroids: Digital, Mobile, Personal, and Virtual (wireless, file sharing, VoIP, video camera in phone)

WE-ALL-LEARN:
Ten Forces that Opened the Learning World

- **W**eb Searching in the World of e-Books (i.e., Darwin)
- **E**-Learning and Blended Learning
- **A**vailability of Open Source and Free Software (e.g., Moodle)
- **L**everaged Resources and OpenCourseWare (e.g., MIT)
- **L**earning Object Repositories and Portals (i.e., shared content)
- **L**earner Participation in Open Info Communities (YouTube)
- **E**lectronic Collaboration and Interaction (sync and async)
- **A**lternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- **R**eal-Time Mobility and Portability (e.g., iPhone)
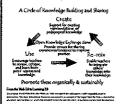- **N**etworks of Personalized Learning (Blogs, RSS)

Audience Participation!

1. WE

2. ALL

3. LEARN!!!

Triple Learning Technology Convergence of "WE-ALL-LEARN"

1. **Pipes**: The availability of tools and infrastructure for learning.
2. **Pages**: The availability of free educational content and resources (OER—Open Educational Resources).
3. **Participatory Learning Culture**: A move towards a culture of open access to information, international collaboration, and global sharing.

What if our minds were on fire for learning?

A Circle of Knowledge Building and Sharing

John Seely Brown and Richard P. Adler. "Minds on Fire: Open Education, the Long Tail, and Learning 2.0," *EDUCAUSE Review* 43, no. 1 (January/February 2008): 16-32.

Opener #1. Web Searching (e.g., Google, MSN, Yahoo!) in the World of e-Books (i.e., Darwin, Shakespeare, etc.)

Trend #1. Web Searching in the World of e-Books. What happens then?

<u>WE</u>

ALL

LEARN!!!

Scientists develop fastest computer
June 9, 2008
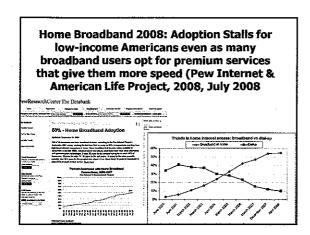### By H. JOSEF HEBERT, Associated Press Writer

- To put the computer's speed in perspective, it has roughly the computing power of 100,000 of today's most powerful laptops stacked 1.5 miles high, according to IBM. Or, if each of the world's 6 billion people worked on hand-held computers for 24 hours a day, it would take them 46 years to do what the Roadrunner computer can do in a single day.

Home Broadband 2008: Adoption Stalls for low-income Americans even as many broadband users opt for premium services that give them more speed (Pew Internet & American Life Project, 2008, July 2008

Next, we need new ways to search for that info in those pipes!

Jeff Han on TED Talks

Terabyte thumb Drives and Magic Pens! (The Pulse from Livescribe) Second, we need new ways to record info: Smartpens: "Never Miss a Word"

Need new ways of representing & accessing info (e.g., Google is working on Timeline and Map Views)

Google expands book project

New ways to read information
(e.g., Thinner, Crisper, and Cheaper eBooks; Kindle = $400-500)

Self-Publishing (print-on-demand) BookSurge (owned by Amazon), Lulu

On Demand Books; 5-7 minutes/book; $10/book, any digitalized out-of-copyright book); Sept. 17, 2008
http://www.ns.umich.edu/htdocs/releases/story.php?id=6735
Expresso Book Machine, U-M at forefront of new era in publishing
Shapiro Library book machine prints books within minutes

Read, Listen, etc. to online books (e.g., "An International Episode" by Henry James)

Global Text Project (free textbooks for those in less developed countries) http://globaltext.org/

Brand New E-Book and Print book Opening Up Education
New Edited Book from MIT (free PDF, sample chapters, and hardcopy)
http://mitpress.mit.edu/catalog/item/default.asp?ttype=2&tid=11309&mode=toc

New Forms of Digital Literacy (new tests from ETS)

Opener #2. E-Learning and Blended Learning

EDUCATION with ...
Students prefer online courses

Classes popular with on-campus students

Trend #2. E-Learning and Blended Learning.
What happens then?

WE

ALL

LEARN!!!

Keeping Pace with k – 12 Online Learning

A Review of State-Level Policy and Practice

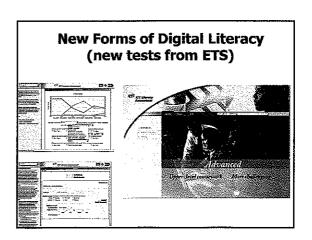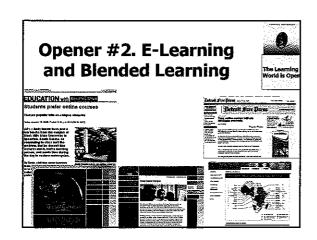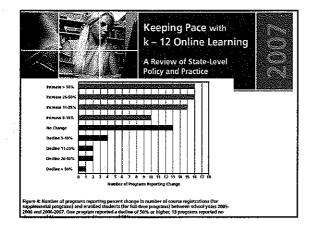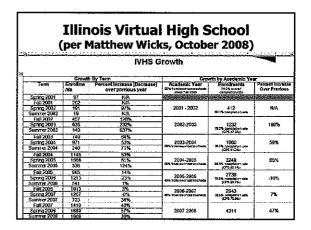Figure 4: Number of programs reporting percent change in number of course registrations (for supplemental programs) and enrolled students (for full-time programs) between school years 2005-2006 and 2006-2007. One program reported a decline of 50% or higher, 13 programs reported no...

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			
Fall 2001	202	N/A			
Spring 2002	101	97%	2001 - 2002	412	N/A
Summer 2002	19	N/A			
Fall 2002	457	126%			
Spring 2003	635	232%	2002-2003	1232	199%
Summer 2003	140	637%			
Fall 2003	749	64%			
Spring 2004	971	53%	2003-2004	1960	59%
Summer 2004	240	71%			
Fall 2004	1145	53%			
Spring 2005	1568	61%	2004-2005	3248	65%
Summer 2005	538	124%			
Fall 2005	985	14%			
Spring 2006	1213	-23%	2005-2006	2739	-16%
Summer 2006	541	1%			
Fall 2006	1013	3%			
Spring 2007	1207	-0%	2006-2007	2943	7%
Summer 2007	723	34%			
Fall 2007	1410	40%			
Spring 2008	1889	57%	2007-2008	4311	47%
Summer 2008	1008	30%			

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

Electronic Classroom of Tomorrow (ECOT) program Ohio; 9,000 K-12 students

Michigan Virtual School more than 11,000 students
(per Dan Schultz, October 2008)

4.1 The *Michigan Virtual School* (cont.)

Since its inception MVS has:

➤ Served more than 79,500 course enrollment
➤ Served more than 157,000 students with a SAT, PSAT or Michigan assessment review

Figure 3: MVS Courses and Online Enrollments 1999-2007

	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Enrollments*	100	676	2,303	5,591	5,670	5,917	6,877	8,941	11,000
Schools served**	16	101	194	211	380	476	672	1,040	1,100
Unique courses	6	17	27	133	137	162	190	251	299

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

Michigan Online Learning Report 2008

urban areas to sparsely populated rural regions (Figure 4).

Funding for the MVS is achieved through a mix of state appropriations, private sector grant support and fees charged to schools and parents. While most of the MVS operating budget comes from state appropriations, MVS secured nearly $500,000 in grant support in partnership with the Michigan Department of Education (MDE) from the Microsoft Corporation in 2006 to develop the CareerForward course described in section 4.3. The cost and size of MVS compares favorably with both the SREB and Florida TaxWatch reports referenced in section 3.1, as MVS had over 7,000 one-semester enrollments with funding from the state appropriation and course fees of under $4 million.

Figure 4: Approximate location of high schools using MVS courses in school year 2007-08. The map demonstrates that MVS serves Michigan's core urban areas as well as sparsely populated rural regions.

Online Learning Growth in Kansas

Figure 5: Program and student growth in online programs in Kansas. Source: Kansas audit of online programs.

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

GlobalSchoolNet.org

Florida VirtualSchool

States with State-led Online Programs and Initiatives

States with a state-led programs and intiatives

Figure 1: States with state-led online programs (blue) and initiatives (gray). Online programs are those which register students into courses, while initiatives provide online tools and resources statewide. Although 30 states have state-led online learning programs or initiatives, Michigan is the only state that requires an "online learning experience" in order to graduate from high school.

Slide 1

Figure 1: National summary of how online learning is being implemented across the country.

- Slates with significant supplemental state-led or multi-district online programs or initiatives
- States with significant full-time, multi-district programs
- States with both
- States with neither

Slide 2

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	1,602,970	NA	9.7%
Fall 2003	16,930,479	1.7%	1,971,397	23.0%	11.7%
Fall 2004	17,272,043	2.2%	2,329,733	18.2%	13.5%
Fall 2005	17,428,500	0.9%	3,180,050	36.5%	18.2%
Fall 2006	17,647,720	1.3%	3,488,381	9.7%	19.8%

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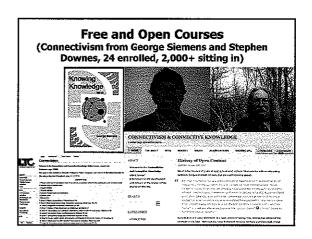
Sara Cordell, professor of English at the University of Illinois-Springfield, says she feels online students become better writers because they get so much practice. NPR Special, Nov 29, 2007, Larry Abramson.
(67% of US Colleges and universities offer online courses; 35% offer fully online programs.)

Slide 3
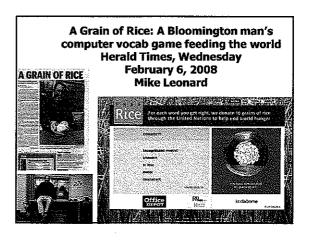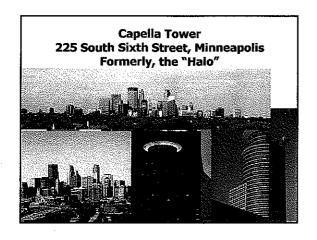
'Distance learning' gets its close-up
By G. Jeffrey MacDonald, Special for USA TODAY
November 2007
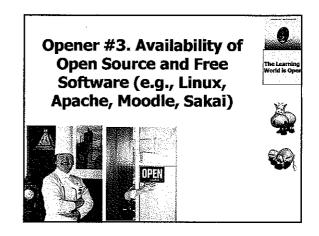
- More than two-thirds of all U.S. colleges and universities offer online courses, and 35% of schools offer programs that are entirely online, according to the Sloan survey, and 20% of the USA's 17 million college students say they have taken at least one course online.
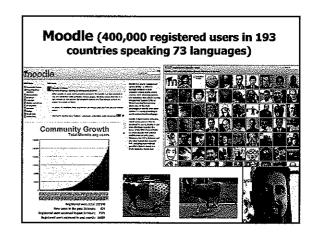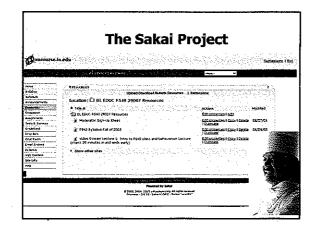
Slide 4

Free and Open Courses
(Connectivism from George Siemens and Stephen Downes, 24 enrolled, 2,000+ sitting in)

Slide 5

2 Million People Sign up for Part I of Oprah's Course on Spiritualism

Slide 6

A Grain of Rice: A Bloomington man's computer vocab game feeding the world
Herald Times, Wednesday
February 6, 2008
Mike Leonard

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

Opener #3. Availability of Open Source and Free Software (e.g., Linux, Apache, Moodle, Sakai)

The Learning World is Open

Trend #3. Availability of Open Source and Free Software.
What happens then?

WE

A̲LL

LEARN!!!

Moodle (400,000 registered users in 193 countries speaking 73 languages)

Community Growth
Total Moodle.org users

The Sakai Project

Blackboard Backlash
Sept 12, 2008

MONEY & MANAGEMENT

Blackboard Backlash: Releasing New Software.
Company Seeks to Mollify Disgruntled College Clients

Opener #4. Leveraged Resources and OpenCourseWare (OCW) (e.g., free courses from MIT, Utah State, CORE, OOPS)

The Learning World is Open

OPENING UP EDUCATION

Trend #4. Leveraged Resources and OpenCourseWare. What happens then?

WE

ALL

LEARN!!!

Cape Town Open Education Declaration
December 2007
http://www.capetowndeclaration.org/

Sample OpenCourseWare Projects

MITOPENCOURSEWARE

MIT OpenCourseWare: Highlights for High School

Indian Institutes of Technology (IIT)

Opensource Opencourseware Prototype System (OOPS) funded by, the Foundation of Fantasy, Lucifer Chu, Chairman and **Janitor of OOPS**, Taipei)

Post Courses in YouTube and iTunes (e.g., Berkeley)

National Repository for Online Courses (NROC) Commons

Opener #5. Online Learning Object Repositories and Portals (shared content)
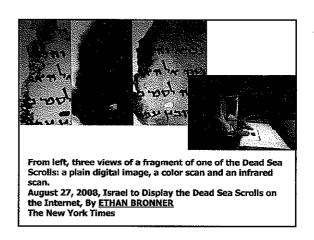
Trend #5. Learning Object Repositories and Portals. What happens then?

WE

ALL

LEARN!!!

Tracking Live Internet Thawing: A Colossal of an Idea

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 thaw the squid for further study.

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

The Complete Works of Charles Darwin

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)

From left, three views of a fragment of one of the Dead Sea Scrolls: a plain digital image, a color scan and an infrared scan.
August 27, 2008, Israel to Display the Dead Sea Scrolls on the Internet, By ETHAN BRONNER
The New York Times

Free Government Resources!

Yahoo! Teachers

Online Referenceware

Ontario Educational Resource Bank

Referatory: MERLOT.org
(62,000 members, 20,000 learning materials)

Repository: Connexions (6,000+ modules, Rice Univ) & Curriki (K-12, Sun Micro)

Half-Way...Brief Intermission Please Share Best Idea so far with neighbor

Opener #6. Learner Participation in Open Information Communities (e.g., Slashdot, Digg, Wikipedia, YouTube)

Trend #6. Learner Participation on Open Information Communities. What happens then?
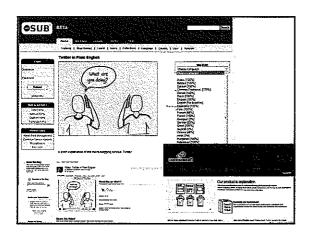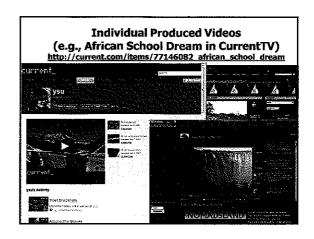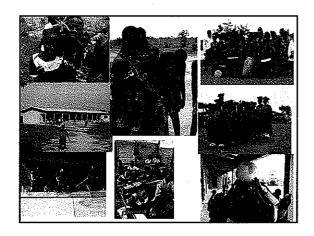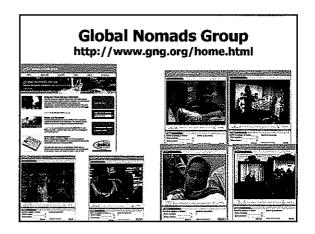
WE

ALL

LEARN!!!

Wikis: Wikipedia and Wikibooks

Skype, Google Talk, Chinesepod, LiveMocha, VoiceThread, YackPack, Dotsub, Chinswing, and many other Collaborative Language Learning

---

Los Angeles, California

Kjeragbolten, Norway

South Shetland

Mokolodi, Botswana

But now there is TeacherTube!

TECHNOLOGY

Sony Shows Off Paper-Thin, Bendable Video Display

**Individual Produced Videos
(e.g., African School Dream in CurrentTV)**
http://current.com/items/77146082_african_school_dream

Global Nomads Group
http://www.gng.org/home.html

THE FUTURE OF THE INTERNET AND HOW TO STOP IT

JONATHAN ZITTRAIN

Think Outside the Book

Posting Documents on Web
Scribd: http://www.scribd.com/; 21 million unique visitors per month, May 2008

World's Largest Online Book Club
LibraryThing (you can be a "*thingamabrarian*" 400,000 users and 26 million books)

Opener #7. Electronic Collaboration and Interaction (synchronous & asynchronous)

The Learning World is Open

Trend #7. Electronic Collaboration and Interaction. What happens then?

WE
ALL
LEARN!!!

Club Penguin
(bought by Disney for $700 million in 2007)
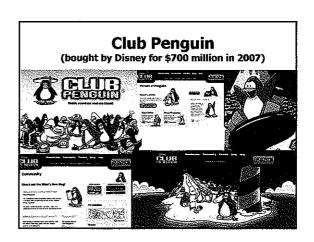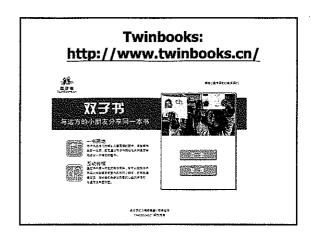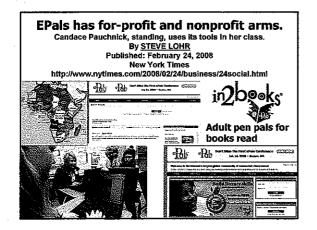
1kg More Project for Rural China
(http://www.1kg.org/

Twinbooks:
http://www.twinbooks.cn/

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

in2books

Adult pen pals for books read

Room to Read
http://www.roomtoread.org/programs/schools.html

Opener #8. Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)

The Learning World is Open

Trend #8. Alternate Reality Learning.
What happens then?
WE
ALL
LEARN!!!

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

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Opener #9. Real-Time Mobility and Portability (e.g., iPhone, low cost wireless devices)

Trend #9. Real-Time Mobility and Portability.
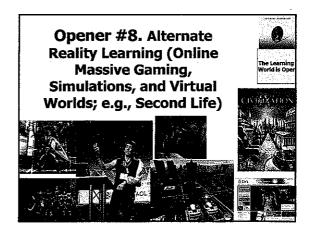## What happens then?
WE
ALL
LEARN!!!

Wireless in Africa and Pocket School in Latin America (Paul Kim, 2008)

The Age of Wireless

MOST (UN)WIRED SCHOOLS?

CNET and U.S. News and World Report got the top 50 universities' tech specs and asked them which computers they recommend to students and faculty.

Totally wireless on campus

OLPC in Nigeria: School Galadima
One Laptop Per Child foundation (OLPC) provided School Galadima in March 2007 with an XO laptop for each child in Primary 4, 5 and 6 and also for each member of the staff.

Opener #10. Networks of Personalized Learning (Blogs, Podcasts, MySpace, Flickr, and RSS)

The Learning World is Open

Trend #10. Networks of Personalized Learning. What happens then?

WE

ALL

LEAR<u>N</u>!!!

Andy Carvin's Waste of Bandwidth

Online Photo Albums, e.g., FLICKR
(Inc. Magazine, December 2006)

Tech giants poke around Facebook

Facebook's Mark Zuckerberg, at his office in Palo Alto, Calif., is in no hurry to sell the popular social networking site. (23 years old)

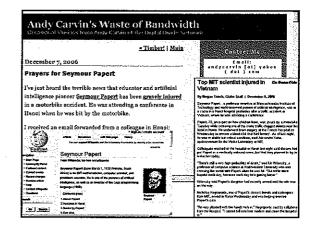Facebook could be worth as much as $6 billion today, Bear Stearns (BSC) analyst Robert Peck says. He expects privately held Facebook to post a profit of about $30 million on revenue of $140 million this year, and register a $70 million profit on revenue of $358 million in 2008. He predicts $6 billion in revenue by 2016.

Facebook used to be just for the young (e.g., my son's Facebook account)

iVideosong, August 25, 2008, USA Today

Learn guitar from rock gods on 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.

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.

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

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

Podcast for Language Learning (ChinesePod—learn Mandarin)
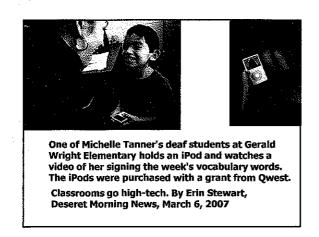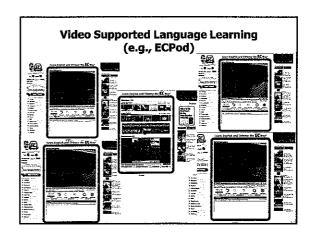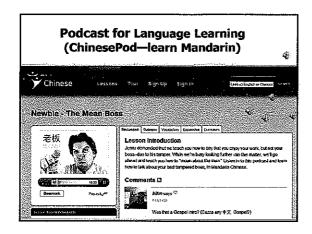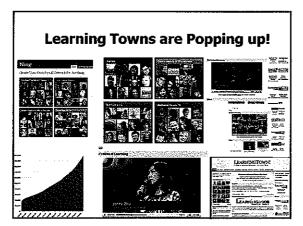

Learning Towns are Popping up!

Final Sharing Questions

- For what purpose will people share?
- Who will continue to maintain or update such sites?
- Will online sharing become expected of all faculty members around the planet?
- How will copyright issues be addressed?
- What happens when one did not mean to share his or her course contents or ideas, or, at least, not as widely?
- How will such learning objects of today be viewed in 100 or 200 years?

Predictions

1. Five Billion "Have-Nots" Have at It!
2. Emergence of Lifelong Super E-Mentors/Coaches
3. Quarter-Century Learning Clubs
4. Terabyte Learning Access Points
5. The Veneration of Learning
6. Personalization+ Portfolios
7. The Selection of Global Learning Partners
8. The Shared Learning Era
9. Teaching-Learning Perpetuities
10. Teachers, Teachers
11. The Rise of the Super Blends
12. Self-Determined Humans
13. Free Learning Zones
14. Authentic Learning Amalgamations
15. Alexandrian Aristotles

The Future

The World is Open. What happens then? Now WE-ALL-LEARN with Web Technology

WE ALL LEARN!!!

Stop and Share:
Top Three Things Learned!