

The Flat World Swung Open: How Web Technology Is Revolutionizing Education

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



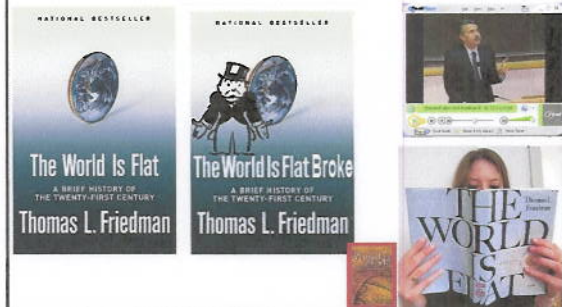
Where are you headed?



Do you know the shape of the world?



Is the World Flat?



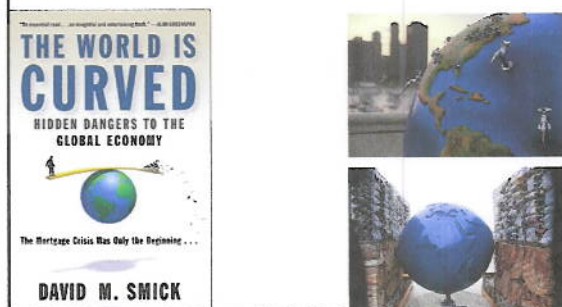
The Ten Forces that Flattened the World

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 collob communities; Mosaic, 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)



Is the World Curved?



Is it spiky?

WHO'S YOUR CITY?
RICHARD FLORIDA

THE FUTURE
CREATIVE
CLASS

Or is it Open?

The MIT Press

Opening Up Education
The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge
Edited by Tony Bates and M.S. Vigné-Knudsen
Reviewed by John Hattie

OPENING UP EDUCATION
The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge
Edited by Tony Bates and M.S. Vigné-Knudsen
Reviewed by John Hattie



Grandpa George (Goronja)

(West Allis, Wisconsin, built tractors 40+ years)

ALLIS-CHALMERS, MEG. CO.

ALLIS-CHALMERS
TRACTOR DIVISION, AC TRACTOR, U.S.A.

AC

Charles Wedemeyer

Learning at the Back Door (1981) Nontraditional Learning

Learning at the Back Door
REFLECTIONS ON NON-TRADITIONAL LEARNING IN THE LIFESPAN
Charles A. Wedemeyer

21 Things That Became Obsolete This Decade

December 11, 2009, Silicon Alley Insider

15 Gadgets that Changed Everything This Decade

December 9, 2009, Jay Yarow, Silicon Alley Insider



UCLA Summer Digs Program

Dig in, archaeology fans! UCLA blogs to offer front-row seat at archaeology digs, Meg Sullivan, 6/25/2008



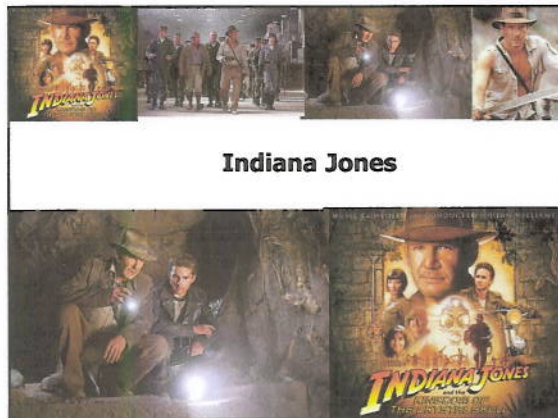
Michael Perham & Zac Sunderland, Summer 2009 (each age 17, youngest person to sail solo around the world...and blog on it, use Skype, YouTube, take videos, post pictures, now Abby Sunderland age 16, Minoru Saito, age 75, oldest solo sailor)



David Thomas, Archeologist, La Trobe University, Australia (Discovery News)



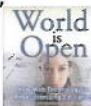
Indiana Jones



- Perhaps those learning online are akin to the alien archaeologists in the 2008 movie, *Indiana Jones and the Kingdom of the Crystal Skull*. We are seeking the knowledge nuggets of our planetary past and present. As Indy said, "Their treasure wasn't gold, it was knowledge. Knowledge was their treasure." If that is true for us as well, then today pretty much all the world's known treasures can be found online.

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**ead-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.




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?

WE

ALL

LEARN!!!

This Could Be the Year of e-Textbooks Many titles are available, but students are wary.

Jeffrey Young, September 7, 2009

September 7, 2009
This Could Be the Year of e-Textbooks
Many titles are available, but students are wary.



Sign of the times: At the San Diego State U. bookstore, a poster exhorts students to "Buy This Textbook as an eTextbook."

Blio: Kurzweil Reinvents the Book
 Charlie Sorrel, Dec 29, 2009, *Wired*

<http://www.wired.com/gadgetlab/2009/12/blio-kurzweil-reinvents-the-book/>

- Blio is a free platform...run on any device.
- Blio is in color.
- Blio lays pages seen on paper, with typography and illustrations; uses video.
- More than a million library of titles.
- The end of the book?



Tablet May Help E-Textbook Market, Publishers Hope
 Chronicle of HE, Jeffrey Young
 January 31, 2010



Guests play with Apple's new iPad at an event announcing its debut in San Francisco. At least one college is considering giving iPads to new students, but the jury on whether the device will revolutionize learning will be out for a while.

Free Online Books

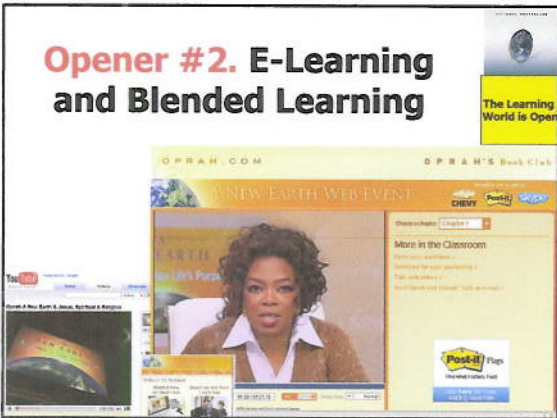
(Terry Anderson and Fathi Elloumi. eds. *Theory and Practice of Online Learning*; Canada: Athabasca University. 2004),
http://cde.athabascau.ca/online_book/, 55,000 downloads in first year)



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



Opener #2. E-Learning and Blended Learning



Letter from Bill Gates about online learning (January, 2010)

<http://www.gatesfoundation.org/annual-letter/2010/Pages/education-learning-online.aspx>



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

A collage of images related to Indiana University High School. It includes photos of students in various settings, a map of Indiana, and several newspaper clippings. One clipping features the word "roam" in a stylized font. Another clipping shows a student's profile with the name "Zachary".

Adora Svitak, age 12, World's Youngest Teacher

A collage of images featuring Adora Svitak. It includes photos of her in a classroom setting, her smiling portrait, and several screenshots of her website and social media profiles. One screenshot shows a page titled "AMERICA" with a picture of a child.

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

Two photographs of the Minneapolis skyline. The top photo shows a wide view of the city with the Capella Tower on the right. The bottom photo is a closer view of the Capella Tower, a tall, cylindrical skyscraper with a distinctive top section.

iSMART: Integration of Science, Mathematics, and Reflective Teaching (iSMART) is a FREE 2-year online graduate program for middle school science and mathematics teachers in Texas, University of Houston

<http://www.coe.uh.edu/mycoe/CIJN/math/iSMART%20flyer4.pdf>
<http://www.coe.uh.edu/mycoe/CIJN/math/iSMART.cfm>

You see the big picture. You find the connections.
Make it official - become iSMART.

A screenshot of the iSMART website interface, showing navigation options and program details. To the left, there is a photo of two students in a science laboratory setting, looking at a microscope.

TOTAL AND ONLINE ENROLLMENT IN DEGREE-GRANTING POSTSECONDARY INSTITUTIONS - FALL 2002 THROUGH FALL 2008

	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Annual Growth Rate Online Enrollment	Online Enrollment as a Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	9.6%
Fall 2003	16,911,481	1.8%	1,971,397	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	18.2%	13.5%
Fall 2005	17,487,481	1.2%	3,180,050	36.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	9.7%	19.6%
Fall 2007	17,975,830	1.2%	3,938,111	12.9%	21.9%
Fall 2008	18,199,920	1.2%	4,606,353	16.9%	25.3%

UIS Online & Blended Enrollment

A bar chart showing the enrollment trends for UIS Online & Blended programs from 1998 to 2008. The x-axis represents the year, and the y-axis represents enrollment numbers. The chart shows a steady increase in enrollment over the period.

A small photograph of a person sitting at a desk, working on a computer.

Learning on Demand: Online Education in the United States, 2009 (Jan, 2010, Sloan-C)

http://www.sloan-c.org/learning_on_demand_sr2010

IMPACT OF THE ECONOMIC DOWNTURN ON THE DEMAND FOR COURSES AND PROGRAMS - FALL 2009

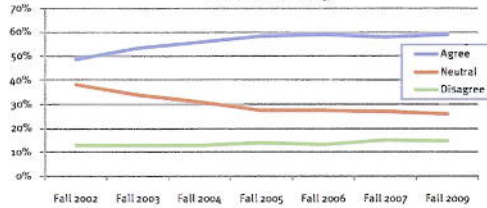
A stacked bar chart showing the impact of the economic downturn on the demand for courses and programs in Fall 2009. The x-axis represents the percentage of demand, ranging from 0% to 100%. The y-axis lists four categories: Existing face-to-face courses and programs, New face-to-face courses or programs, Existing online courses and programs, and New online courses or programs. The legend indicates three categories: Decreased (green), No change (blue), and Increased (orange).

Category	Decreased (%)	No change (%)	Increased (%)
Existing face-to-face courses and programs	~10	~40	~50
New face-to-face courses or programs	~10	~40	~50
Existing online courses and programs	~10	~40	~50
New online courses or programs	~10	~40	~50

Learning on Demand: Online Education in the United States, 2009 (Jan, 2010, Sloan-C)

http://www.sloan-c.org/learning_on_demand_sr2010

ONLINE EDUCATION IS CRITICAL TO THE LONG-TERM STRATEGY OF MY INSTITUTION:
FALL 2002 - FALL 2009



Learning on Demand: Online Education in the United States, 2009 (Jan, 2010, Sloan-C)

http://www.sloan-c.org/learning_on_demand_sr2010

PROPORTION OF INSTITUTIONS REPORTING ECONOMIC DOWNTURN HAS INCREASED DEMAND FOR COURSES AND PROGRAMS - FALL 2009

	Public	Private nonprofit	Private for-profit
Existing Face-to-face	75.9%	31.6%	52.7%
New Face-to-face	60.2%	30.9%	45.8%
Existing Online	87.0%	58.2%	67.0%
New Online	76.5%	59.5%	54.5%

	Doctoral/Research	Master's	Baccalaureate	Associate's	Specialized
Existing Face-to-face	51.9%	44.7%	30.9%	75.2%	26.5%
New Face-to-face	39.2%	35.9%	24.6%	63.3%	32.6%
Existing Online	75.0%	66.7%	62.1%	81.2%	62.0%
New Online	79.1%	67.6%	55.8%	71.9%	52.4%

U.S. DEPARTMENT OF EDUCATION

Evaluation of Evidence-Based Practices in Online Learning
A Meta-Analysis and Review of Online Learning Studies

Research Institute for Learning Effectiveness

A Grain of Rice: A Bloomington man's computer vocab game feeding the world

Rice For each answer you get right, we donate 10 grains of rice through the UN World Food Program to help end hunger

The country uses Code a'Jovine

This country is:
Thailand
Malaysia
Indonesia
Vietnam

Support: Search, Home, Help, About, Contact Us

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

Blackborg

INFORMATION TECHNOLOGY

Center For Blackboard Will Put Its Focus in Open Learning

Moodle (32+ million registered users in 208 countries, 3+ million courses, 2/6/2010)

moodle

Moodle sites

Moodle downloads

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

MIT OPEN COURSEWARE
THE LEARNING WORLD IS OPEN
Open Yale
Eac Traditional Textbooks
We Remix Open Textbooks!

Open Teaching

(Tom Reeves Evaluation Course at Georgia; David Wiley's Web 2.0 courses at BYU; Connectivism from George Siemens and Stephen Downes, 24 enrolled, 2,000+ sitting in)

Open Educational Resources (OER) Post Courses in YouTube and iTunes (e.g., Berkeley)

Berkeley University of California

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

The Biggest OCW Localization Volunteer Group in the World

OOPS! Opensource Opencourseware Prototype System
The Foundation of Fantasy Culture and Arts
開放式課程計劃

Sample OpenCourseWare Projects (Tufts, Johns Hopkins)

Tufts OpenCourseWare
IDP200 Pathophysiology of Infectious Diseases, Fall 2004/2005

Cape Town Open Education Declaration, Dec 2007

<http://www.capetowndeclaration.org/>

THE CAPE TOWN OPEN EDUCATION DECLARATION
Read the Declaration
Open Town Open Education Declaration

Peer2Peer University and University of the People (free!)

Neeru Paharia is behind Peer2Peer University, Fast Company, September 2009, How Web-Savvy Edupunks Are Transforming American Higher Education

Small Entrepreneur Plus a Free Global University That Will Be Online Only

Opener #5. Online Learning Object Repositories and Portals (shared content)

The Learning World is Open

Link TV, Academic Earth, TV Lesson, and Fora TV

Transforming the System: An Interview with Michèle Rhee

Tracking Live Internet Thawing: A Colossal of an Idea

Ida (a transitional species) 47-Million-Year-Old Darwinius Masillae Fossil the Missing Link? (wowOwow, May 20, 2009)

The Complete Works of Charles Darwin

The Complete Works of Charles Darwin Online

Contributors and Acknowledgments

Contributors

- Director: Dr. John van COTTEN, Queen's College & Department of History and Philosophy of Science, University of Cambridge
- Research Assistant: Dr. John van COTTEN, University of Cambridge, Department of Zoology, University of Cambridge, Director and Chair holder (The Darwin Initiative Grant)
- National Director: Dr. John van COTTEN, Research Development Unit
- AMRC Principal Investigator: Professor James Secord, Department of History and Philosophy of Science, University of Cambridge
- AMRC Co-investigator: Professor James Secord, Department of the History of Science, University of Cambridge

Associate Editors (Historians)

- Dr. Robert BROWN
- Dr. Robert BROWN

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

(Great Plague, Great Fire, Charles Dickens, Erasmus Darwin, Mary Wollstonecraft Shelley, Robert Browning, John Stuart Mill, Ralph Waldo Emerson, Elizabeth Barrett Browning, and Alfred Tennyson)

The Royal Society 350th anniversary celebrations puts historic papers online (Captain Cook, Sir Isaac Newton and Benjamin Franklin), BBC, Nov 30, 2009

<http://news.bbc.co.uk/2/hi/science/nature/8381425.stm>

Audio slideshow: 350 years of discovery

The world's oldest science academy, The Royal Society in London, is celebrating its 350th anniversary by making the public have unprecedented access to some of the world's oldest papers.

Original manuscripts by figures such as Captain Cook, Sir Isaac Newton and Benjamin Franklin are being made available online.

Human Brain Dissected Today in a Live Webcast, Chronicle of Higher Education, December 02, 2009, 01:00 PM ET

http://chronicle.com/blogPost/Human-Brain-Dissected-Today-in/9053/?id=pm&utm_source=pm&utm_medium=en

Sharing Repositories and Referatories

MERLOT.org: 78,472 members, 21,690 Inrg materials, Jan 3, 2010
Connexions: Dec 2009, 1.6m unique users, 4 million page views, 72 million hits, More than 1m users, 200 countries
National Repository of Online Course, OER Commons

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

The Learning World is Open

Wikis: Wikipedia and Wikibooks

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



Shared Online Video
 (e.g., YouTube and the Royal Channel)



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



Participatory E-Books

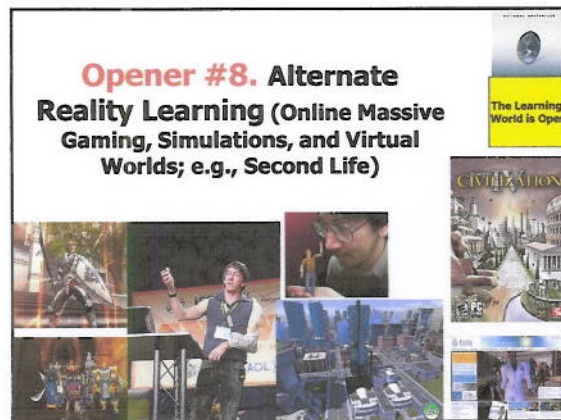
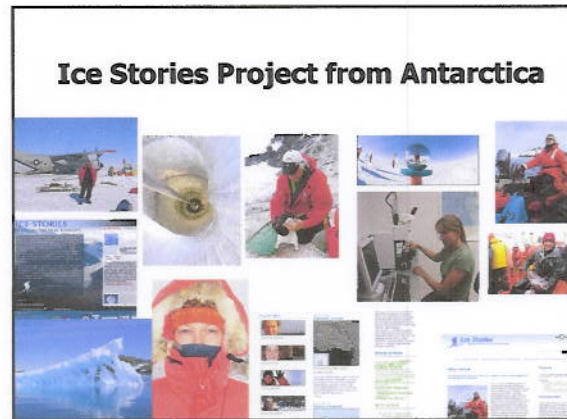
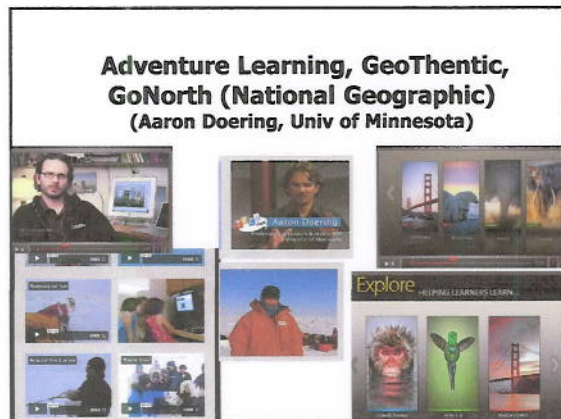
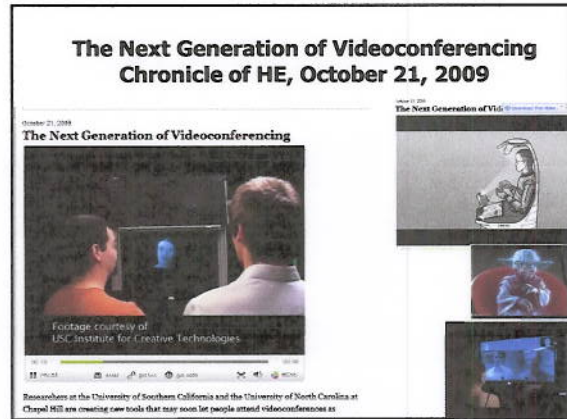
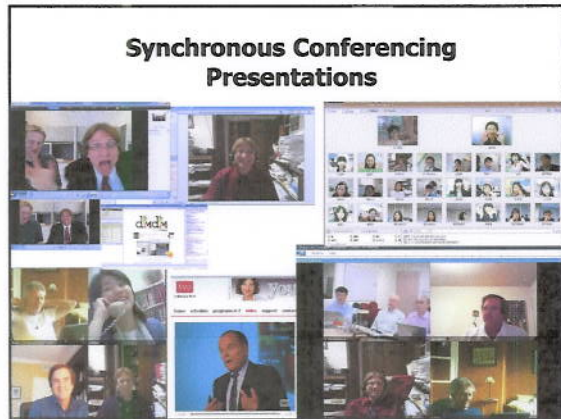


Scribd: Documents on Web
<http://www.scribd.com/>; 21 million unique visitors per month, May 2008



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





**University of Texas:
50 Islands in Second Life, Nov 2009**
<http://archive.treet.tv/metanomics-campus-life>

The image shows a screenshot of a virtual world interface. On the left, there's a 'treet.tv' logo and a list of avatars. The main area shows a virtual meeting room with several avatars seated around a table. Below that, there's a virtual island landscape with a large structure and a person standing on a platform.

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

The Learning World is Open

The collage includes several images: a group of people sitting on the grass using laptops, a person using a laptop, a hand holding a smartphone, and several different models of mobile phones, including an iPhone and a flip phone.

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

The image shows a screenshot of the Farmville game interface with various farm animals and buildings. To the left is a newspaper clipping with the headline 'For social networks, it's game on' and a sub-headline 'Quick, simple fun booms in Facebook, MySpace'.

**TwitterPeek, WikiReader not worth the
loot, USA Today, Edward Baig, November 5, 2009**

The image shows several mobile devices. One displays the TwitterPeek application interface. Another shows a hand holding a device displaying the WikiReader application. Text overlays state: 'TwitterPeek: Restricted to Twitter.' and 'WikiReader: Updating can be a pain.'

Mobile Learning
(April 21, 2009, USA Today)

The collage features various mobile learning devices: a smartphone, a PDA, a tablet, a laptop, and a person using a mobile device. There are also images of people in a classroom setting and a person using a mobile device.

Terabyte thumb Drives and Magic Pens!
(The Pulse from Livescribe, \$129-\$169)

The image shows a Livescribe Pulse pen, a terabyte thumb drive, and a person using the pen to write on a notepad. The pen is labeled 'PULSE' and 'NEVER MISS A WORD'.

We Are Going Mobile!

40,000 new mobile subscribers a week in Rwanda; Rwanda Newtimes report, January 2009
Africa is the continent with the fastest growth, International Telecommunications Union (ITU), March 2009

India: In January, 2009, the number sky rocketed to 15.4M
 Globally: 60,000 new mobile subscriptions every hour!!!

(per Paul Kim, Stanford, 2009); Nokia Research Lab
http://news.yahoo.com/s/afp/20090308/afp_afp_indiaconomytelecom




Mobile Learning in India with Paul Kim

<http://www.stanford.edu/~phkim/curt/India.pdf>



'One Laptop Per Child' program collides with reality


GEOFFREY YORK, Toronto Globe and Mail, Oct 15, 2009
 Bhutan, Khendum Gyabak (Univ. of Texas at El Paso)



Opener #10. Networks of Personalized Learning

(Blogs, Podcasts, MySpace, Flickr, and RSS)

The Learning World is Open



September 30, 2009
 the Samsung DualView TL225

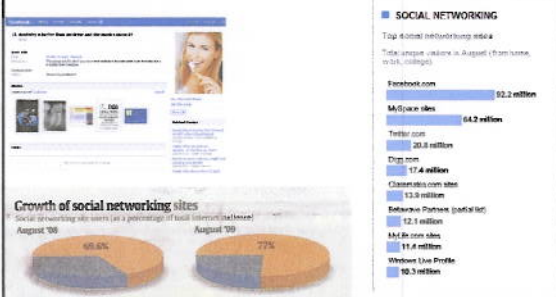
Podcast Shows

(subscribe to ShakespeareCast.com)



Facebook: The New Classroom Commons?

Chronicle of HE, Harriet L. Schwartz, Sept. 28, 2009



Site	Users (in millions)
Facebook.com	52.2 million
MySpace sites	44.2 million
Twitter.com	20.8 million
Diigo.com	17.4 million
Classmate.com sites	13.8 million
Bebo.com	12.1 million
MyLife.com sites	11.8 million
Friendster.com	10.3 million

Teaching With Twitter

Chronicle of HE, Jeffrey Young, November 22, 2009
 Sugato Chakravarty, a professor of consumer sciences and retailing at Purdue University, has welcomed Twitter into the lecture hall, even though the service lets students engage in back-channel discussions. The questions submitted via Hotseat for the professor and guest speakers are projected for all the students to see.

Livemocha (29 languages, 160 hours of lessons, over 2 million users, FREE!)

Social Language Learning - Online!

Language Learning on Livemocha

Livemocha Challenge

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

■ This book is an attempt to reveal a wide range of learning options in front of you while also offering you a framework to make sense of them. As the Grail Knight said in the 1989 movie, *Indiana Jones and the Last Crusade*, "choose wisely." If you do, WE-ALL-LEARN. The world is now open to you!

Slides at: TrainingShare.com
 Papers: PublicationShare.com
 Book: <http://worldisopen.com/>
 The World is Open.
 What happens then?

WE  **ALL**  **LEARN!!!**