How the Learning World Became Flat: Ten Knowledge Sharing and Technology Trends Equalizing Access to Learning

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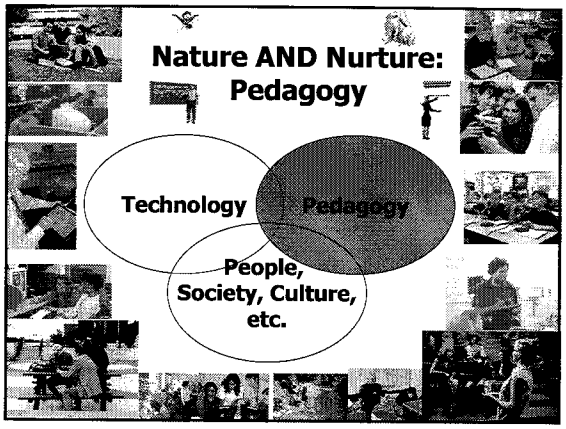
President, SurveyShare
cjbonk@indiana.edu
http://php.indiana.edu/~cjbonk

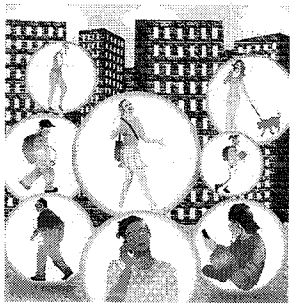
Nature AND Nurture: Pedagogy



Monday April 30, 2007, USA Today
Top 25 Things that Shaped the Internet

- 747 Million adults logged on in Jan, 2007
- 97 billion e-mails are sent each day
- Google had 500 million visitors in Dec, 2006
- USA: 1% broadband in 1998; 78% in 2007
- YouTube bought by Google for $1.7 billion
- Adobe's Flash player on 98% of machines
- There are 75 million blogs!!!
- 19 million people play MMOG!
- 173 million personalized pages in MySpace

Next Generation of Students



Tech Creates Bubble for Kids
Alejandro Gonzalez, USA TODAY, Updated 6/20/2006 10:34 AM ET

Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET

- Nick Currie and his girlfriend Shizu Yuasa (R) surf the internet over breakfast in Tokyo in this handout photo. As the Internet evolves -- with its webcams, iPods, Instant Messaging, broadband, wi-fi and weblogs -- its image as a relationship-wrecker is changing. Now a sociable habit is emerging among the Netorati: couple-surfing. (Nick Currie/Handout/Reuters)
- "For my birthday, he upgraded my RAM and I thought it was incredibly romantic," writes Jess.

Effects of interactive multimedia in distance learning

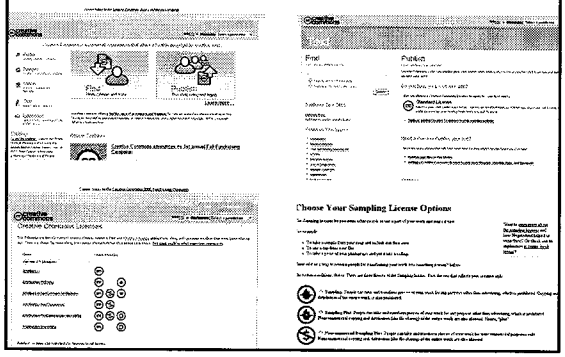
Giti Javidi and Ehsan Sheybani, 2004, In Proceedings of the IASTED International Conference WEB-BASED EDUCATION

"The advancement in technology is shaping every aspect of our life, including education. One decade ago, the Internet was not critical to education. However, now, it has become an integral part of learning process. Internet technology is having a dramatic effect on colleges and universities, producing what may be the most challenging period in the history of higher education."

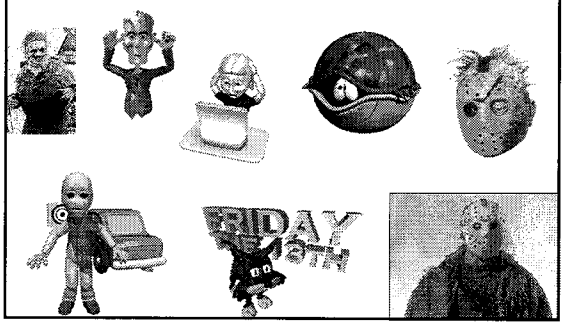
Do You Share?

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 assigned teams online?
5. Who has embedded international exchanges or expert guests?
6. Who has used MERLOT, Connexions, or the MIT open courses?
7. Who has used Wikipedia?

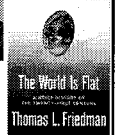
Creative Commons

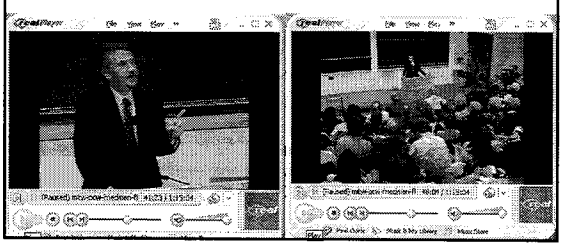


Most are Scared to Share!!!



- Thomas Friedman, author of "The World if Flat":
- Tools for collaboration are changing the world
- http://mitworld.mit.edu/video/266/

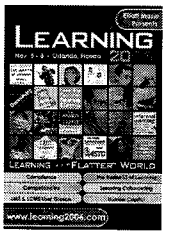




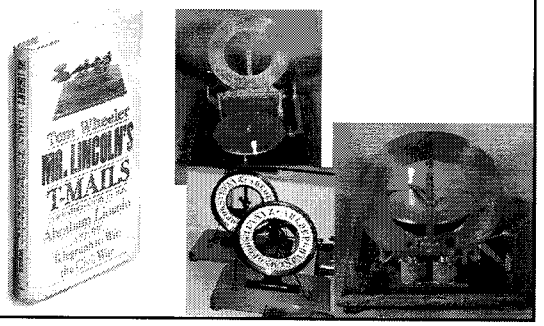
The Ten Forces that Flattened the World

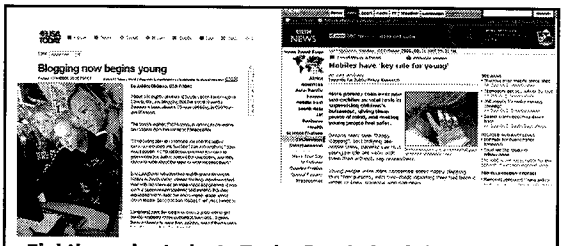
1. 11/9/89: Berlin Wall came down
2. 8/9/95: Netscape went public
3. Work Flow Software (e.g., PayPal and eBay)
4. Open-Sourcing (Self organizing collaborative communities; Mosiac, Apache, Wikipedia, Linux, Mozilla/Firefox,)
5. Outsourcing (Y2K)
6. Offshoring (e.g., China, Mexico, Thailand)
7. Supply-Chaining (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 (e.g., wireless, file sharing, VoIP, video camera in phone)

The Learning World has become Flat!



Telegraph: Flattening the world in 1860





Eighth-grade students Tayler Bernholtz, left, Amy Lostroh and Kelsey Cardiff check out a weblog discussion related to the Civil War historical-fiction book 'Guerrilla Season' At South Valley Junior High School in Liberty, Mo. (Blogging now begins young USA Today, By Ashley Bleimes, USA TODAY, November 15, 2006, 12D). http://www.usatoday.com/life/2006-11-14-blogs-education_x.htm

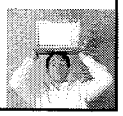
WE-ALL-LEARN:

Ten Forces that Opened the Learning World

- Web Searching in the World of e-Books (i.e., Darwin)
- Enormous E-Learning and Blended Learning
- Availability of Open Source and Free Software (e.g., Moodle)
- Leveraged Resources and OpenCourseWare (e.g., MIT)
- Learning Object Repositories and Portals (i.e., shared content)
- Learner Participation in Open Info Communities (YouTube)
- Electronic Collaboration and Interaction (sync and async)
- Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- Real-Time Mobility and Portability (e.g., iPhone)
- Networks of Personalized Learning (Blogs, RSS)

Three Larger Trends of WE-ALL-LEARN

- The availability of tools and infrastructure for learning.
- The availability of free educational content and resources (OER—Open Educational Resources).
- A move towards a culture of open access to information, international collaboration, and global sharing.

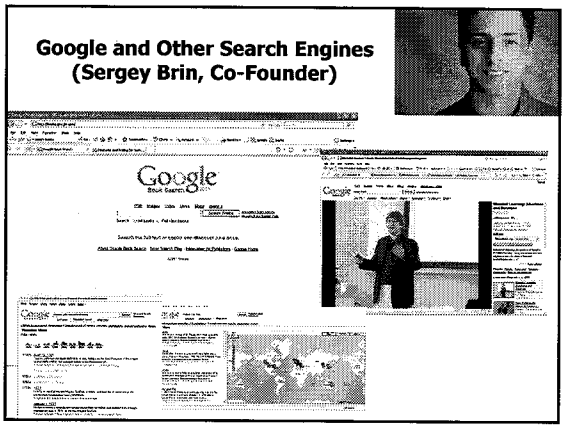


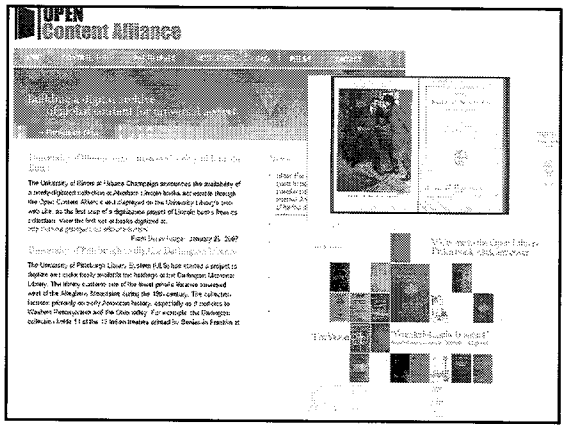
The Ten Forces that Flattened the World

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

The Search is on!

Google and Other Search Engines (Sergey Brin, Co-Founder)

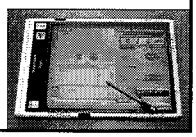




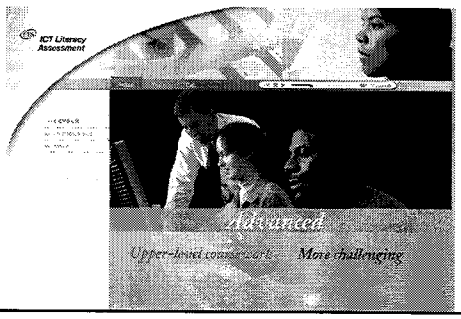
Digital Books

By Kim Rahn, March 7, 2007, Digital Textbook to Debut Next Year, The Korea Times

- Students will be able to interact with teachers regardless of time and space and study according to their ability through computers as the nation plans to adopt the digital textbook.
- provides the multi-functionality of textbook, workbook, exercise book and dictionary.
- The digital textbook...can go beyond conventional paper textbooks by using such features as video clips, animation and virtual reality.

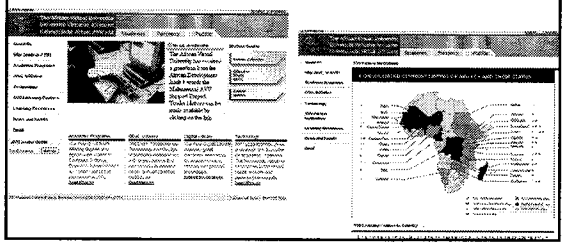


New Forms of Digital Literacy

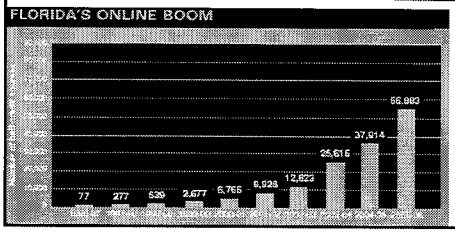


The Ten Forces that Flattened the World

2. Enormous E-Learning and Blended Learning

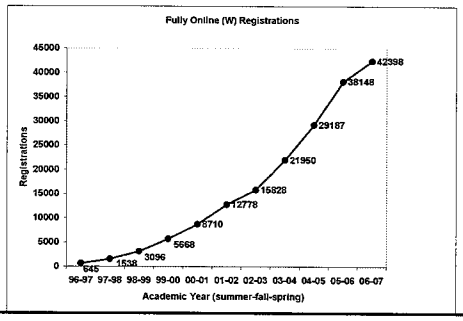


Growth of Online Learning in Secondary Schools



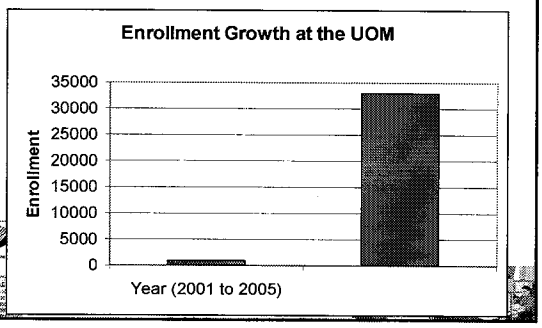
University of Central Florida

Access, Quality, and Efficiency through Online Learning
Academic Year 2006-2007



The Open Univ Malaysia

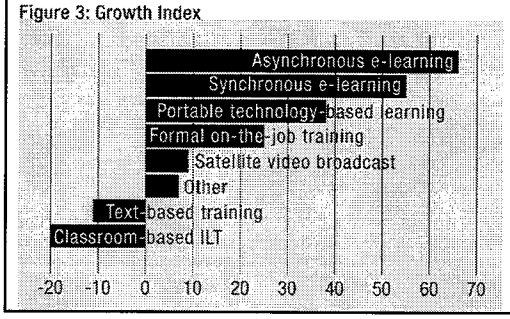
(Abtar Kaur, 2005, Ed Media)



Blended Delivery: Mixing Modalities

Susan Lee, CLO, July 2007
http://www.clomedia.com/content/templates/clo_article.asp?articleid=1857&zoneid=13

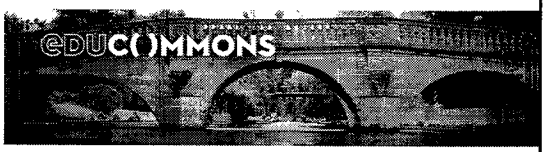
Figure 3: Growth Index



The Ten Forces that Flattened the World

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

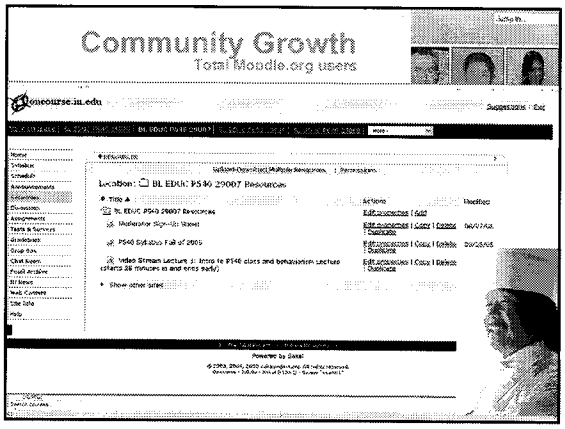
1. eduCommons



See eduCommons in Action | Download the Source Code | Get the Installation Instructions

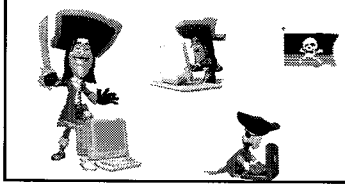
eduCommons is an OpenCourseWare Management System designed specifically to support OpenCourseWare projects like MIT OCW and USU OCW. eduCommons provides the functionality necessary to successfully develop and manage an open access collection, including a workflow process that steps users through uploading materials into a repository, tracking copyright clearance, reassembly of materials into courses, a quality assurance process, and final publication of the materials. While the front end of eduCommons is designed to visually align with other OCWs, the back end architecture is actually closer to something like Fedora/DSpace - all resources are stored as individual learning objects in order to facilitate easy reuse downstream. eduCommons is open source software available from SourceForge.

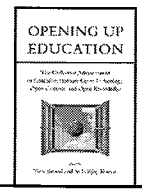
eduCommons is generously funded by The William and Flora Hewlett Foundation and the National Science Foundation.



The Ten Forces that Flattened the World

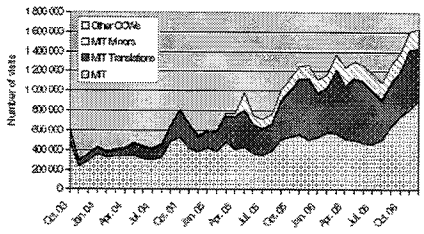
4. **Leveraged Resources and OpenCourseWare (OCW) (e.g., free courses from MIT, Utah State, CORE, OOPS)**





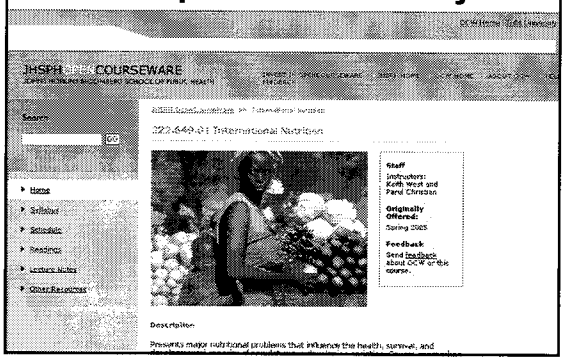
Giving knowledge for free: The emergence of open educational resources. *OECD Publishing: Centre for Educational Research and Innovation. (153 pages).* Retrieved July 5, from http://www.oecdbookshop.org/oecd/display.asp?SF1=DI&CID

Figure 3.4. Overall traffic to MIT OCW materials, October 2003 to December 2006

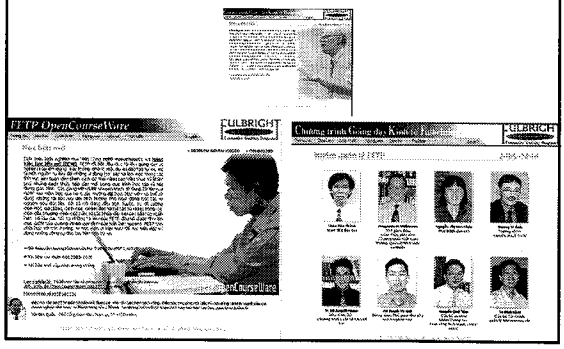


Source: MIT.

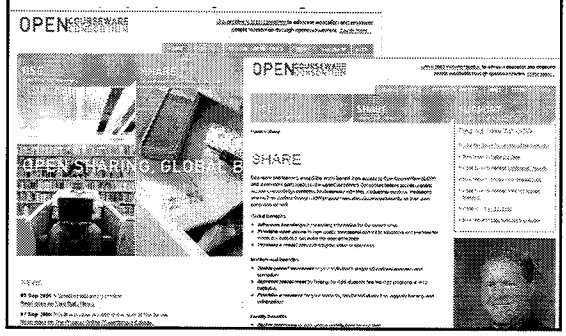
Tufts OpenCourseWare Project



Vietnam Fulbright Economics OCW



Open Source Courseware



Per David Wiley, Utah State University (October 2005)

"This is a message that should probably get out, also - not only is this movement worldwide and gaining momentum every day, it is also becoming a key part of international strategy to achieve equitable access to education for people everywhere."

The Biggest OCW Localization Volunteer Group in the World

OOPS! Opensource Opencourseware Prototype System
The Foundation of Fantasy Culture and Arts

What's their Beliefs? (Chu, Jan 1, 2007)

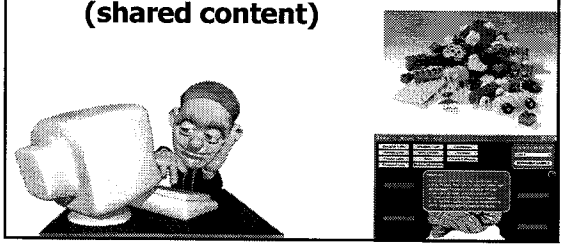
- Collective Minds is better than a single genius translator.
- Perfect Translation doesn't exist.
- 2,012 Volunteer translators
  1,125 courses adopted
  639 courses near completion (level 1)
- 126 courses already finished

OOPS
Opensource Opencourseware Prototype System
開放式課程計劃

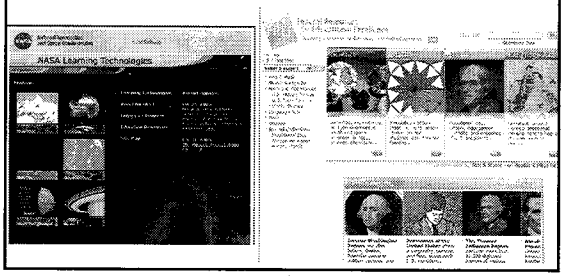
Lucifer Chu, Chairman and Janitor of OOPS, Taiwan

The Ten Forces that Flattened the World

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



Free Government Resources!

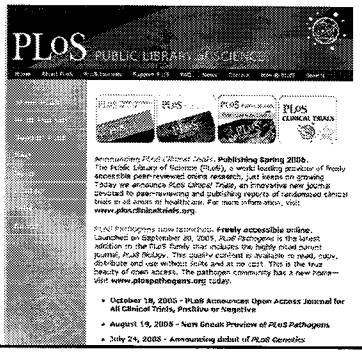


Terry Anderson, Athabasca University (October 2005)

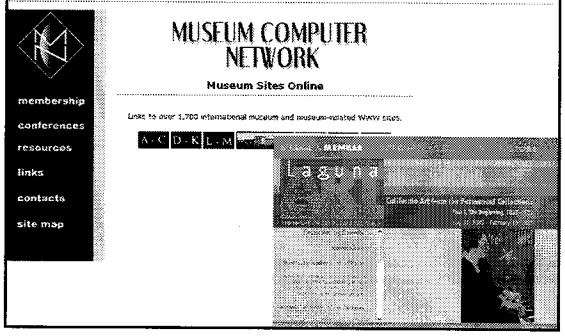
"Our Creative Commons licensed book Theory and Practice of Online Learning has been downloaded over 55,000 times (full text) and more by individual chapters. Parts have been translated into 6 languages and we are nearly sold out the 500 copies we printed at $50 a pop. So it is quite a success story."

- Anderson, Terry & Fathi Elloumi (Eds). (2004). Theory and practice of online learning. Canada: Athabasca University. http://cde.athabascau.ca/online_book/

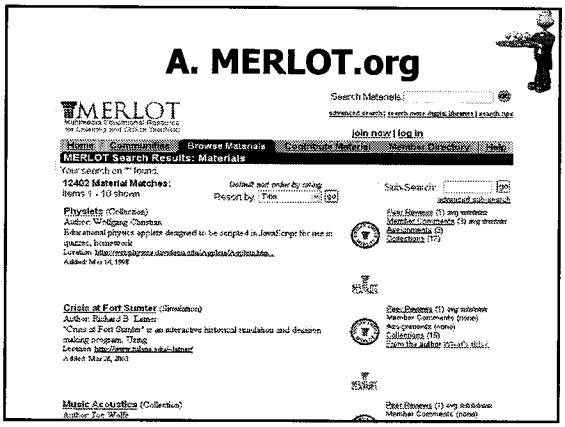
Public Library of Science



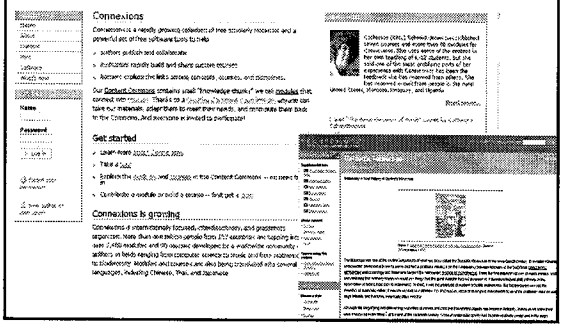
Museum of Online Museums



A. MERLOT.org



B. Connexions (Rice University) http://cnx.rice.edu/



C. Global Education and Learning Community (GELC) (Kirkpatrick, Dec 22, 2006, CNN Money)

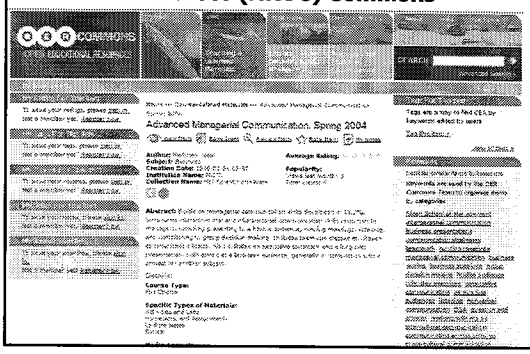
- **The Global Education and Learning Community (GELC) aims to bring the principles of open source to education. Scott McNealy, former CEO of Sun Microsystems, is working to create a free universal curriculum from Kindergarten to 12th grade in every major subject. Any educator/researcher can contribute and it will be in any language.**

D. Google School Resources such as Google Docs and Spreadsheets, an open alternative to Microsoft's Word and Excel

Google enrolls teachers in online software crusade

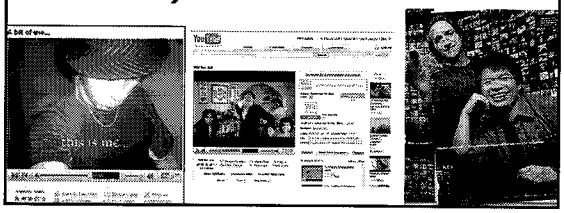
Dec 3, 2006, USA Today
Michael Liedtke, Associated Press
Google enrolls teachers to spread work online software crusade
Palo Alto High School journalism teacher Esther Wojcicki helps student Allison Wyndham at a computer during journalism class in Palo Alto, Calif. Wojcicki is helping Google bring its online suite of software applications to classrooms across the country

E. National Repository for Online Courses (NROC) Commons

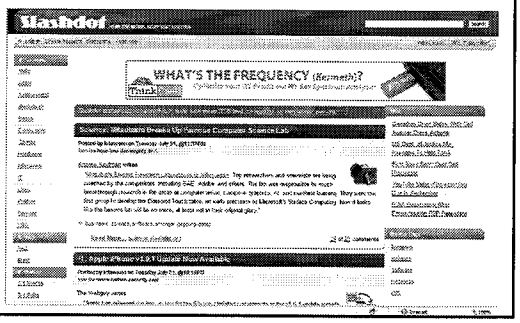


The Ten Forces that Flattened the World

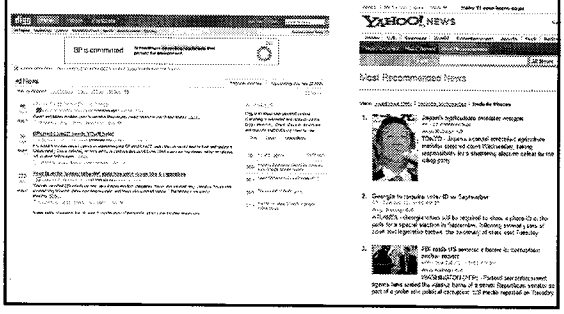
6. **Learner Participation in Open Information Communities (e.g., Slashdot, Digg, Wikipedia, YouTube)**

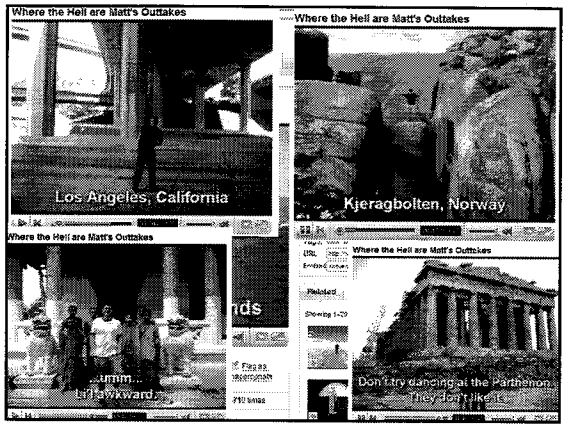


Slashdot (News for nerds, stuff that matters) http://slashdot.org/

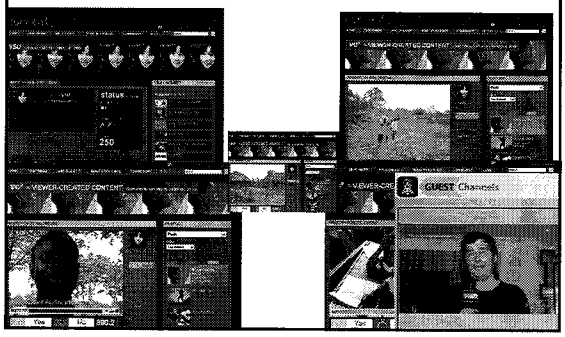


Digg (all about user powered content. Everything is submitted and voted on by the Digg community. Share, discover, bookmark, and promote stuff) http://digg.com/

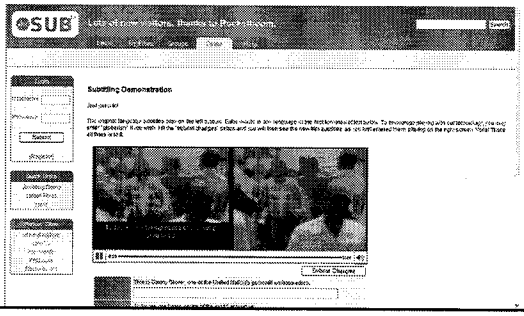




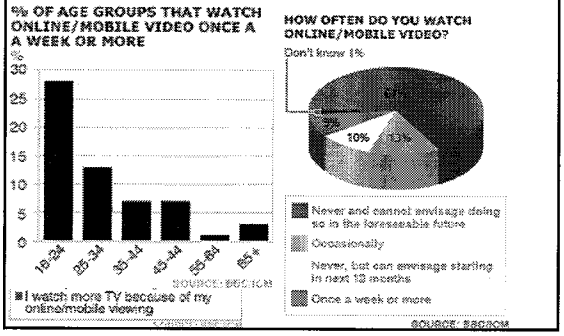
Individual Produced Videos

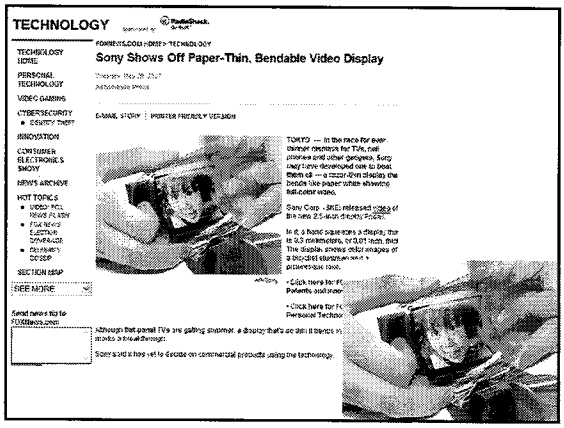


Make Videos Available for World (see dotSUB)

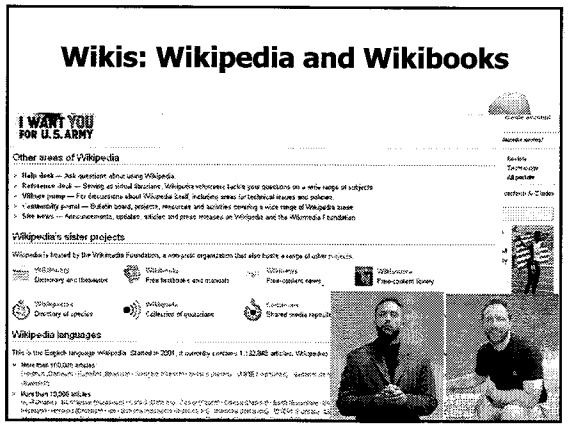


BBC (2007). Online video 'eroding TV viewing.' *BBC News Online.* Retrieved July 3, 2007, from http://news.bbc.co.uk/1/hi/entertainment/6168950.stm





Wikis: Wikipedia and Wikibooks

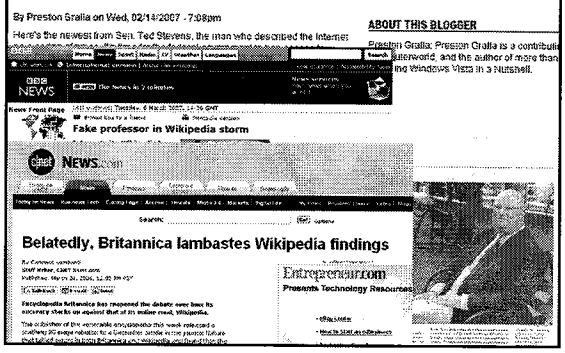


Wiki Questions

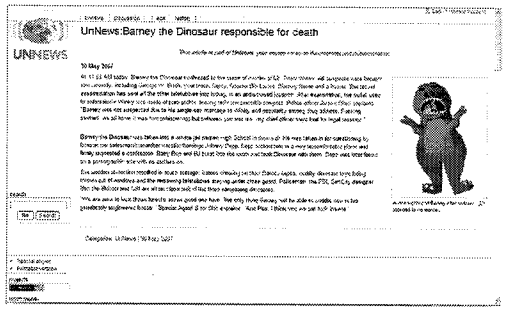
1. **Who regularly reads Wikipedia articles just for fun?**
2. **Who regularly reads Wikibooks?**
3. **Who seeks Wikipedia for content?**
4. **Who has edited or written new articles on Wikipedia or Wikibooks?**
5. **Who thinks it is ok for college students to cite from Wikipedia?**

U.S. senator: It's time to ban Wikipedia in schools, libraries

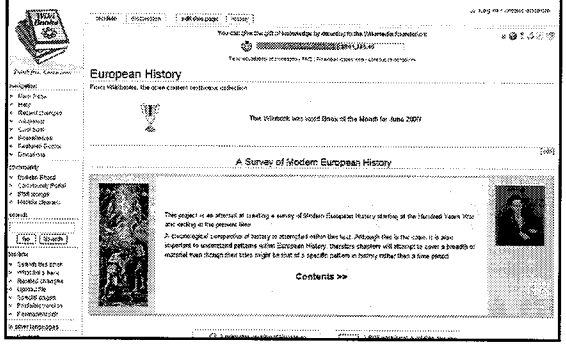
June 7, 2007



http://uncyclopedia.org/wiki/Main_Page



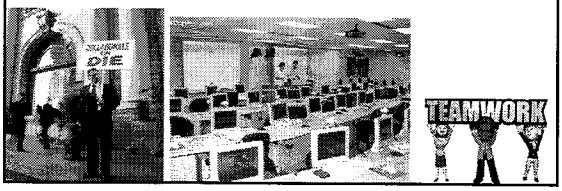
Sample Book (Learning Theories) http://en.wikibooks.org/wiki/Main_Page



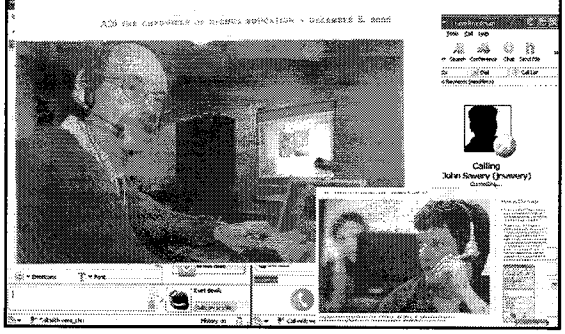
The Ten Forces that Flattened the World

The Learning World is Flat

7. **Electronic Collaboration and Interaction (synchronous and asynchronous)**

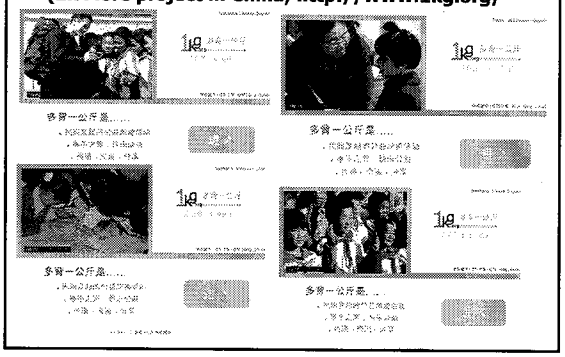


Skype says it is used by 136 million people worldwide



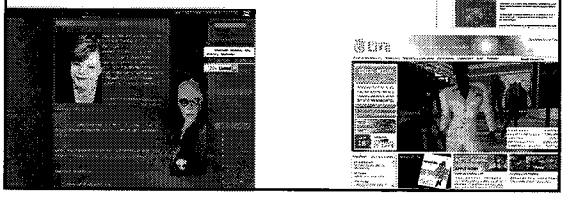
Online Mentoring

(1k More project in China; http://www.1kg.org/

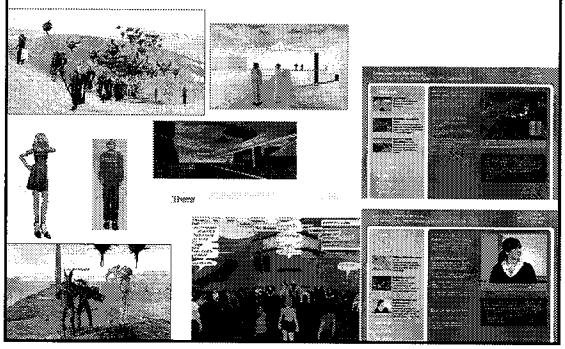


The Ten Forces that Flattened the World

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

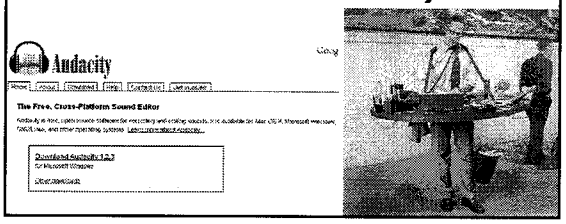


Virtual Worlds/Virtual Reality/MMOG



The Ten Forces that Flattened the World

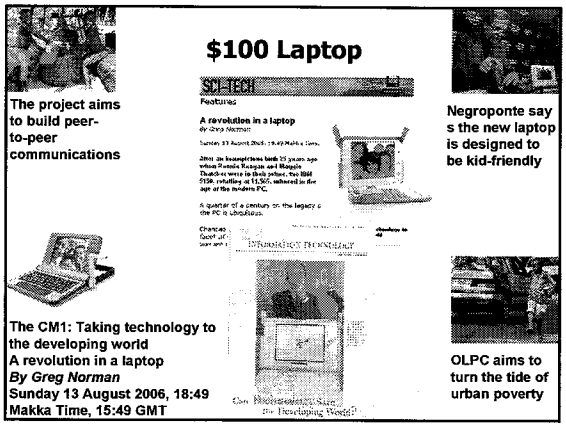
9. Real-Time Mobility and Portability (e.g., iPhone, low cost wireless devices)



Singapore and Taipei (Intel Press Release, 2006)

- **Singapore, the island city-state in Southeast Asia, is about to complete a major new public/private project that will see large chunks of the 270 square mile city provided with Wi-Fi access by the end of 2008. The entire city, indoors and out, is due to be covered by 2015.**
- **In the coldest capital in Canada, the city residents of Iqaluit (pop. 6,000) enjoy free wireless from one free hotspot (with two more due soon to cover the suburbs), while Taipei, Taiwan (pop. 2.6 million) has a few more—over 4,000 hotspots that provide coverage for 90 percent of the city.**

$100 Laptop



The project aims to build peer-to-peer communications

Negroponte says the new laptop is designed to be kid-friendly

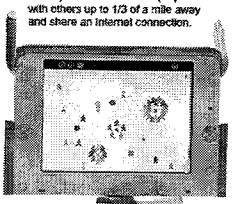
The CM1: Taking technology to the developing world
A revolution in a laptop
By Greg Norman
Sunday 13 August 2006, 18:49
Makka Time, 15:49 GMT

OLPC aims to turn the tide of urban poverty

Computers for Peace
By Grace Rubenstein
GLEF

Fold-up antennas let OX laptops link with others up to 1/3 of a mile away and share an internet connection.

Screen swivels, closes, or lies flat for use as tablet, e-book, or game machine.



Using a Wi-Fi connection, groups of children can do activities together, such as share photos or compose and perform music.

Super high-definition, 7.5 in.-diagonal screen is easily visible in daylight; designed for outdoor use.

Uses 2 watts of power (1/10th average laptop); manually rechargeable.

Rugged keyboard resists dust and dirt and will be configured for the local language.

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.

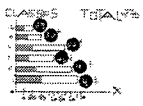
Uruguay youngsters receive batch of OLPC XOs
Posted May 14th 2007 3:34PM by Darren Murph
http://www.engadget.com/2007/05/14/uruguay-youngsters-receive-batch-of-olpc-xos/

Robert Kozma

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.

Drawing of his future house by a primary 5 student who wants to be a banker.

Teachers also do artistic work on their XO laptops, like this teacher's local scene.



Simple as it may seem, this graph is the result of a complex process: primary 6 worked together, made a census of themselves and of the whole school, and understood both population and mathematical graphing concepts.

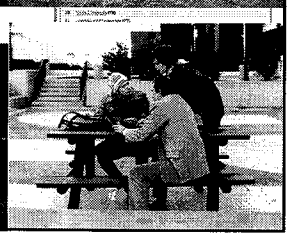
Nakaseke community radio station

Nakaseke village telecenter

Nigerian school OLPC XO usage

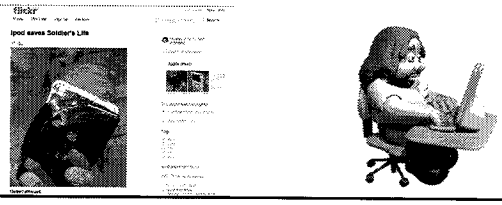
One Laptop Per Child News
http://www.olpcnews.com/

DePauw University



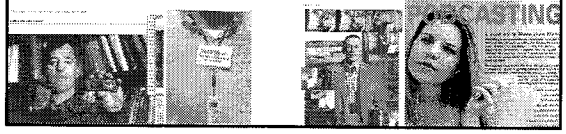
The Ten Forces that Flattened the World

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

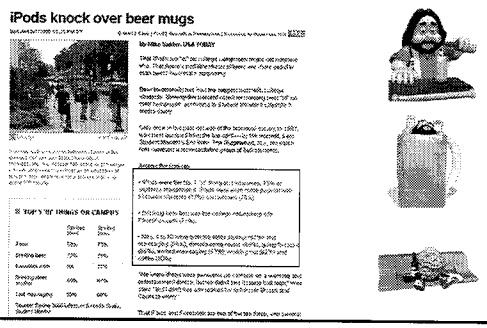


Podcast Questions

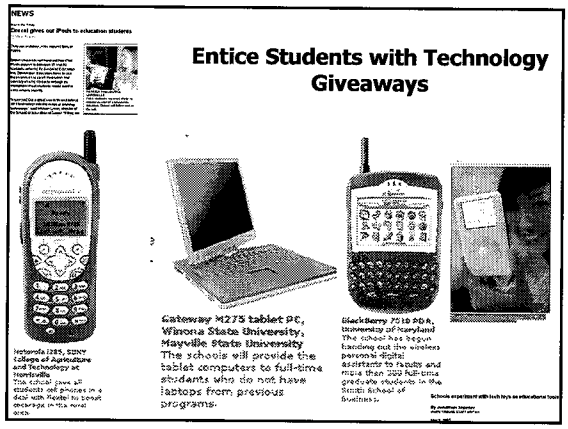
1. Who has listened to a podcast?
2. Who listens to a certain podcast on a regular basis?
3. Who has created a podcast?
4. Who has created a vodcast?
5. Who thinks podcasting is simply more talking heads?



iPod's More Popular than Beer?



Entice Students with Technology Giveaways

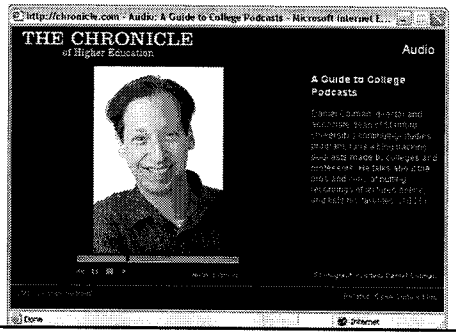


Gateway M275 tablet PC, Winona State University, Mayville State University
The schools will provide the tablet computers to full-time students who do not have laptops from previous programs.

BlackBerry 7510 PDA, University of Maryland
The school has begun handing out the wireless personal digital assistants to faculty and more than 300 full-time graduate students in the Smith School of Business.

Consumer's Guide to College Podcasts

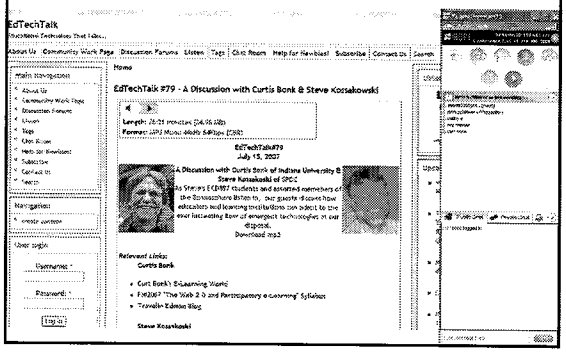
(Daniel Coleman, Stanford, Chronicle of Higher Ed, June 4, 2007)



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

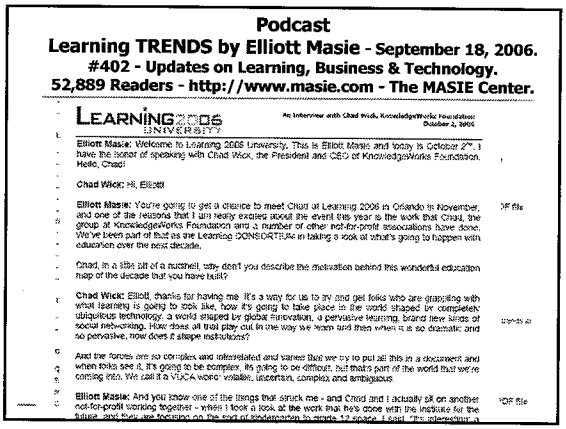
World Bridges and EdTechTalk



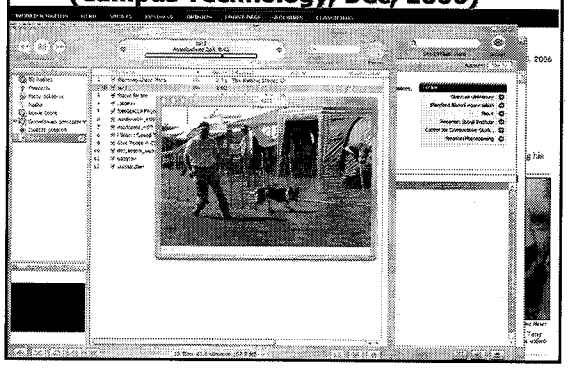
Student Podcast
(in schools—kids have power!)

"Just the word 'podcast' scales 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)

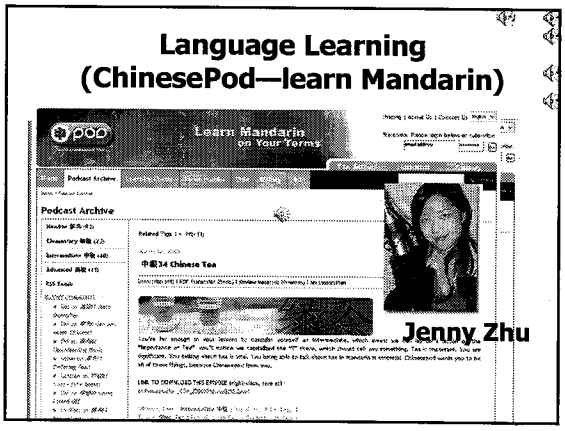
Podcast
Learning TRENDS by Elliott Masie - September 18, 2006.
#402 - Updates on Learning, Business & Technology.
52,889 Readers - http://www.masie.com - The MASIE Center.



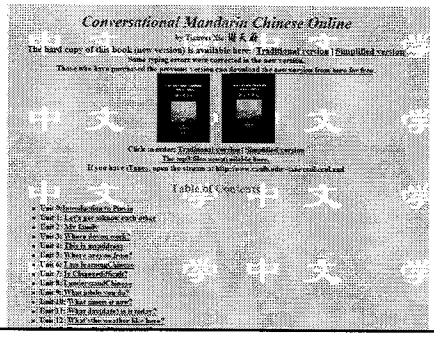
Learning with iPods
(Campus Technology, Dec, 2006)



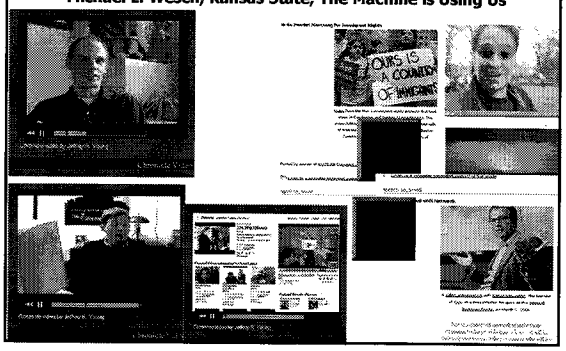
Language Learning
(ChinesePod—learn Mandarin)



Developed by Dr. Tianwei Xie, Dept.of
AAAS, California State University, Long Beach



Vlogging (Video Blogging)
e.g., Andy Calvin's Waste of Bandwidth
Michael L. Wesch, Kansas State, The Machine is Using Us



Blogging Questions

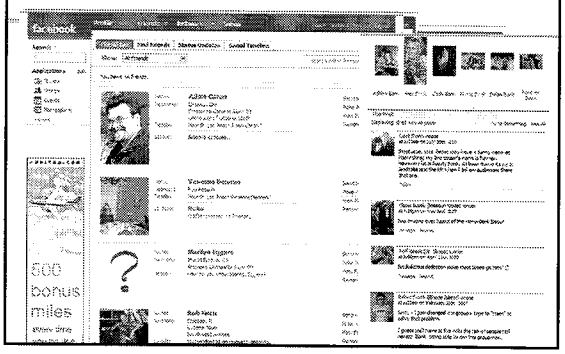
1. Who has a blog? Any for a specific class?
2. Who regularly reads other people's blogs?
3. Who assigns blogging tasks?
4. Who has created a video blog?
5. Who thinks it is an utter waste of time to blog?

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

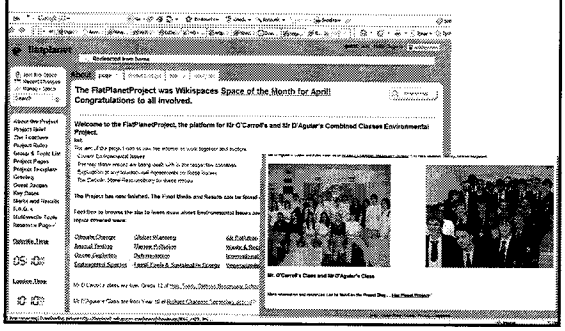
Social Networking Software

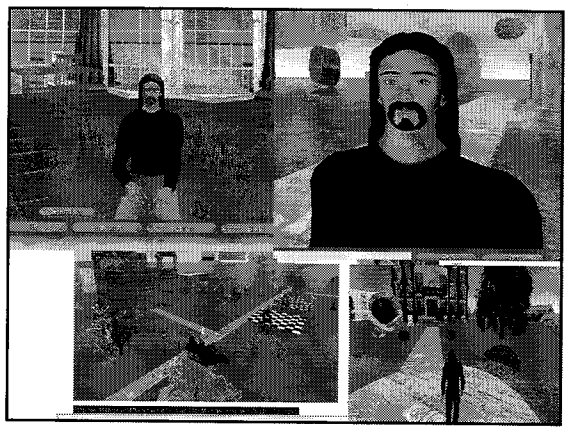
- Classmates: http://www.classmates.com/
- Facebook: http://www.facebook.com/
- Friendster: http://www.friendster.com/
- Friendzy: http://www.friendzy.com/
- MySpace: http://www.myspace.com/
- Orkut: https://www.orkut.com/
- Tribes: http://www.tribe.net/
- YouTube: http://www.youtube.com/

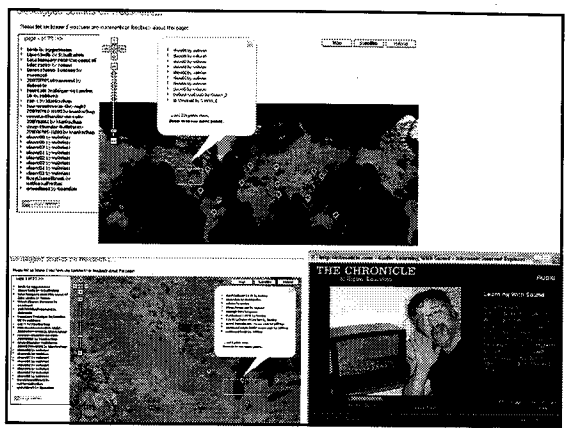
Social Networking Software (Web 2.0)



Flat School Projects!!!

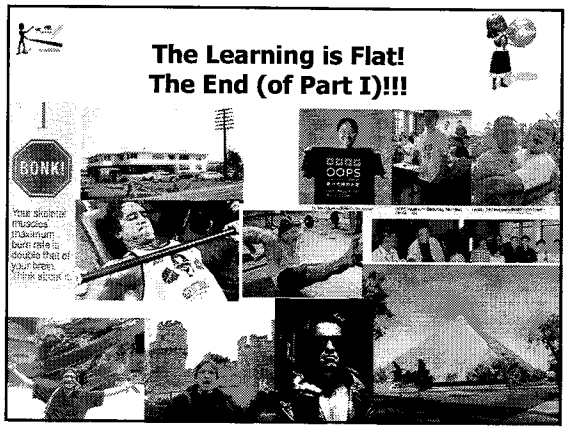






Sharing Questions (today)

- 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?

Computers for Peace; By Grace Rubenstein; GLEF, Interview with Nicholas Negroponte, MIT

- In an ideal world, what is your single greatest hope for this project?
- A three-step hope: World peace *through* the elimination of poverty *through* education *through* learning. Education is the goal; learning is the means. A lot of learning can happen without teaching. We're banking on that.