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

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Effects of interactive multimedia in distance learning

"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."

Why Share?

Figure 1. Reasons Why Respondents Posted to the WLI or MERLOT

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?

Most are Scared to Share!!!
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; Mozilla, 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

The Ten Forces that Flattened the Learning World

1. Tools for Searching/ Finding Media and Information Resources
2. Availability of Quality Online and Blended Learning Environments
3. Free and Open Source Software for Learning
4. Open Content/Free (content)
5. Online Learning Object Repositories and Portals (shared content)
6. Virtual Collaboration Software (synchronous and asynchronous)
7. Online Massive Gaming, Simulations, and Virtual Worlds (e.g., Second Life)
8. Learning Mobility and Portability (low-cost mobile devices/ wireless communication)
9. Personalized Learning Tools (blogs, podcasts, MySpace, Flickr, and RSS)
10. Open Information Communities (Wikipedia, Slashdot, Digg)

Eighth-grade students Taylor Bernholtz, left, Amy Lostroh, and Relsey Cardiir 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 Blakes, USA TODAY, November 15, 2006, 120), http://www.usatoday.com/life/2006-11-16-blogs-education_x.htm
Three Larger Trends

- 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.

Technology Trends

Technology
Pedagogy
People, Society, Culture, etc.

Who is demanding access to learning?

Next Generation of Students

Tech Create Bubble for Kids
Alejandro Gonzalez, USA TODAY, Updated 6/30/2006 19:34 AM ET

INFOmATION TECHNOLOGY

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.
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

The Ten Forces that Flattened the World

1. Tools for Searching/Finding Media and Information Resources: (e.g., Google, Yahoo!)

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

Google Book Project

The Ten Forces that Flattened the World

2. The Availability of Quality Online and Blended Learning Environments

Google Print project inspires fury, fear
2003-01-10 11:51:40 Z

Megan Cascio, 17, sends instant messages, watches TV and listens to music while doing biology homework.

'Teens Can Multitask, But What Are Costs?', page 491.
Growth of Online Learning in Secondary Schools

TOTAL HALF-CREDIT ENROLLMENTS AT FLVS

Education Week, March 27, 2007

Heather Gatewood, 29, has both family and work responsibilities. She chose an online education to earn a bachelor's degree in general studies before working on a master's degree. The State Journal (Kentucky); By Derek Aaron; February 26, 2007

Growth in Student Enrollments

The OUM
(Ahmed Kamar, 2003, EdMedia)

Enrollment Growth at the UOM

The Ten Forces that Flattened the World
3. Free and Open Source Software for Learning
1. eduCommons

Community Growth
Total Moodle.org users:

Registered users total: 223,271
New users in the last 24 hours: 616
Registered users accepted in past 24 hours: 2,352
Registered users accepted in past month: 6,681

The Ten Forces that Flattened the World

4. Open CourseWare (MIT OCW, Utah State, Japan, CORE, OOPS)

Tufts OpenCourseWare Project

Japan OCW Alliance

Vietnam Fulbright Economics OCW
**Open University of UK**

**USU OpenCourseWare Project**

**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."

**John Dehlin
Utah State University**

"If you think about the tangible, practical, human value some of these courses could have in the world, particularly the 3rd world...it can get quite exciting (to me at least)."

**CORE (China Open Resources for Education), OCW Mirror Site, China**
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

The Ten Forces that Flattened the World
5. Online Learning Object Repositories and Portals (shared content)

Lucifer Chu, Chairman and Janitor of OOPS, Taiwan

Free Government Resources!

Public Library of Science
Museum of Online Museums

A. MERLOT.org

Trend 5, Part 2:
Reusable Content Objects

- "Learning Objects are small or large resources that can be used to provide a learning experience. These assets can be lessons, video clips, images, or even people. The Learning Objects can represent tiny "chunks" of knowledge, or they can be whole courses."

Claude Ostyn, Click2Learn

MERLOT People Metrics
(Gerald Hanley, October, 2005)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2004</th>
<th>2005</th>
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<tbody>
<tr>
<td>Students</td>
<td>700</td>
<td>3,662</td>
<td>5,010</td>
</tr>
<tr>
<td>Faculty</td>
<td>2,864</td>
<td>11,563</td>
<td>14,754</td>
</tr>
<tr>
<td>Staff</td>
<td>736</td>
<td>2,522</td>
<td>3,122</td>
</tr>
<tr>
<td>Administrators</td>
<td>-</td>
<td>280</td>
<td>748</td>
</tr>
<tr>
<td>Librarians</td>
<td>-</td>
<td>146</td>
<td>280</td>
</tr>
<tr>
<td>Other</td>
<td>421</td>
<td>1,087</td>
<td>2,341</td>
</tr>
<tr>
<td>TOTAL # of Members</td>
<td>4,727</td>
<td>20,030</td>
<td>28,253</td>
</tr>
</tbody>
</table>

http://cnx.rice.edu/8080/stats
Sept 2005 had "14.4 million hits representing about 1 million page views by about 430,000 folks from 157 countries," growing at a rate of about 1 million hits per month.

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

> 3500 modules (3-5 pages)
> 180 courses (October 2006)
multiple languages
engineering, computer science, nanotech, physics, statistics, math, history, music, bio-diversity, botany, bio-infor, IP, BRT, UNESCO, UN, Sigma Xi...
from authors worldwide

Usage: September 2006
17 million hits
1.2m page views
520k unique users
from 157 countries

C. JORUM (from UK)

D. 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.

E. 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 Lisitzke, Associated Press
Google enrolls teachers to spread work online software crusade
Palo Alto High School journalism teacher Esther Wojcicki helps student Allison Wynaham 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

F. National Repository for Online Courses (NROC Commons)
The Ten Forces that Flattened the World

6. Virtual Collaboration Software (async and sync)

By Daniel Terdiman, CNET News.com
October 18, 2006, 4:00 AM PDT
When Linden Lab CEO Philip Rosedale (right) spoke to CNET News.com reporter Daniel Terdiman at CNET's "Second Life" headquarters this week, the auditorium was filled with almost all the visitors it could handle.

The Ten Forces that Flattened the World

7. Online Massive Gaming, Simulations, and Virtual Worlds

Virtual Worlds/Virtual Reality/MMOG

Virtual gaming
Online games make up of the many ways the web has changed the way young people socialize and entertain themselves. Percentage of players by age, December 2006:

- 1-10:
- 11-19:
- 20-29:
- 30-39:
- 40-49:
- 50-64:
- 65+

By UNICEF, Children's Media Project

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8. Learning Mobility and Portability (low cost wireless devices)
Computers for Peace
By Grace Rubenstein
GLEF

- Drop a laptop computer into the hands of a child in a remote Chinese village, and Nicholas Negroponte predicts a cascade of results will unfold: The child will encounter new knowledge and ways to express herself through images, words, and sounds. She may help her parents find markets for their products in other cities via cheap satellite Internet -- or even develop a business plan herself. One family's growing prosperity will lift the village's fortunes and expand opportunities for their neighbors.

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.

Wireless Technology

DePauw University
The Ten Forces that Flattened the World

9. Personalized Learning Tools (Blogs, Podcasts, MySpace, Flickr, RSS, etc.)

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?

Learning with iPods
(Campus Technology, Dec, 2006)

Georgia College & State University, The Department of Music and Theatre, which had foreign language speakers come in to do recordings that are helping the school's chorus. Learners singing in Korean, Portuguese, and many other languages, "Now we can listen to the dictions, and make sure that we're pronouncing everything correctly."

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

Student Podcast

"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)

Language Learning
(ChinesePod—learn Mandarin)
Vlogging (Video Blogging)  
* e.g., Andy Calvin's Waste of Bandwidth

Online Photos, 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)

The Ten Forces that Flattened the World
10. Open Information Communities (e.g., Wikipedia, YouTube)
Sharing Encyclopedias (Wikipedia; Jimmy Wales, Founder)

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

The Ten Forces that Flattened the World
Other Open Educational Resource Issues: Copyright, Consortia, Knowledge Brokers, Conferences, Journals.

Creative Commons

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."

Open Source Journal

Comparison of Sharing Sites:
MERLOT, Connexions, CAREO, OCW, CORE, OOPS
Grace Lin, Univ of Houston, 2005

- Goals: Link people, share knowledge, access resources, searchable database
- Funding: fully, partial, none
- Audience: higher education, students, teachers
- Content contributors: faculty, volunteers

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?

Quote Continued...
A Final Quote:
It's a long, long road...
With many a winding turn.
That leads us to who knows where?...

It's a long, long road
From which there is no return
While we're on the way to there
Why not share

(The Hollies, 1969; He Ain't Heavy, He's My Brother; B. Scott - B. Russell)

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.
The Learning is Flat!
The End!!!

The End...Remember

It's Over...

Poll: Ok, then, who wants more???
A. Yes
B. No
C. Not sure

Sorry...it really is the end!!!

BONK!
Your skull's muscles maximum burn up double that of your brain. Think about it.