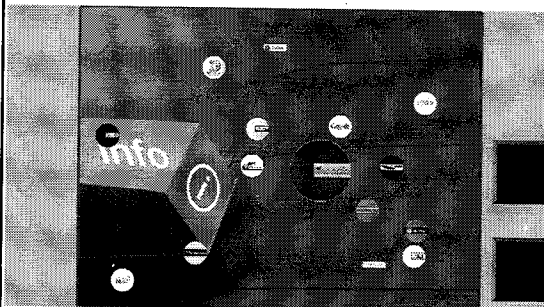**Oops, Did You Mean to Share that? Opensource, Opencourseware, and the Learning Objects of Tomorrow**

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

---

http://ella.slis.indiana.edu/~aenkim/icon ping.html

Phases of Technology in Education

1. Technology to enhance learning/knowledge
2. Technology to extend learning/knowledge
3. Technology to transform learning/knowledge
4. Technology to share learning/knowledge

Knowledge Sharing
(Fuji Xerox, p. 9)

"Knowledge sharing is the way (social) and means (technical) by which an individual, team, organization and/or community connects and communicates, to continually create, innovate, learn and act."

Poll #1: Should e-learning courses and material be shared?
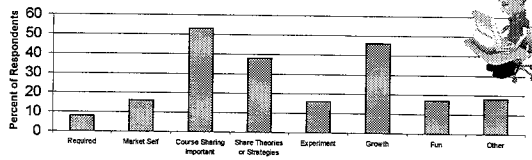
- Yes
- No
- Not sure

Most are Scared to Share!!!

Why Share?

Bonk, C. J. (2002, January). *Executive Summary of" Online teaching in an online world." United States Distance Learning Association* (USDLA). http://www.usdla.org/html/journal/JAN02_Issue/article02.html.

Figure 11. Reasons Why Respondents Posted to the WLH 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 Jorum?

- 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!

The Learning World is Flat
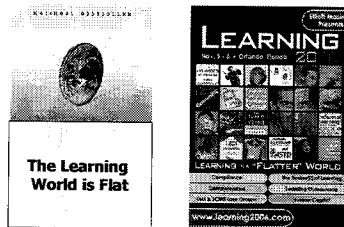
## Telegraph: Flattening the world in 1860
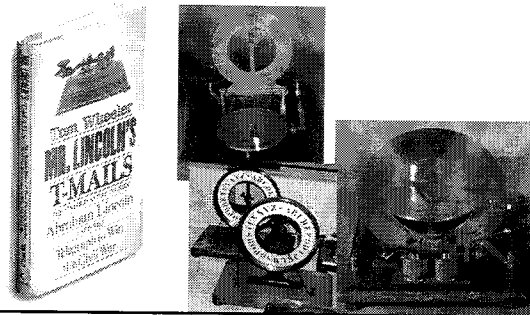
How Lincoln won the Civil War
Mr. Lincoln's T-Mails: The Untold Story of How Abraham Lincoln Used the Telegraph to Win the Civil War

by Tom Wheeler; Collins, 227 pages, $24.95.
By Russ Juskalian, Special for USA TODAY
Updated 11/26/2006 5:29 PM ET
http://www.usatoday.com/money/books/reviews/2006-11-26-lincoln-book_x.htm

- Wheeler argues that the use of the telegraph by Lincoln and his Union generals may have provided the advantage necessary to win the war.
- The telegraph was a killer app for its use along rail lines, enabling more efficient scheduling of trains— which, in turn, increased traffic, and profits.
- With this breakthrough, telegraph lines exploded across the Northern parts of the USA. The Southern states, afraid that industrialization would change their way of life dramatically, moved far more slowly in establishing both railroads and telegraph lines.
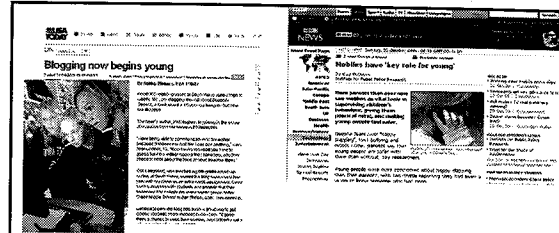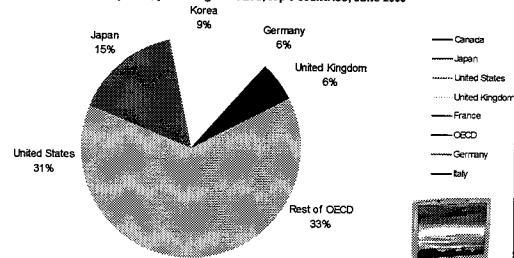

Eighth-grade students Tayler Bernholtz, left, Amy Lostroh and Kelsey Cardiff check out a weblog discussion related to the Civil War historical-fiction book 'Guerrilla Season' At South Valley Junior High School in Liberty, Mo. (Blogging now begins young USA Today, By Ashley Bleimes, USA TODAY, November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

---

Technologies of the 2000's

Increased Broadband Access

Total broadband subscriptions, percentage of OECD, top 6 countries, June 2005

Korea 9%
Japan 15%
Germany 6%
United Kingdom 6%
United States 31%
Rest of OECD 33%

— Canada
— Japan
— United States
— United Kingdom
— France
— OECD
— Germany
— Italy

Source : OECD

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.**

The Ten Forces that Flattened the Learning World

1. Tools for Searching and Finding Information (e.g., Google, Yahoo!)
2. Rise in Demand for Online Learning
3. Open-Sourcing Learning: Sakai, Moodle, eduCommons
4. Collaboration (e.g., SharePoint, Groove, Word, Interwise, Breeze, Google Talk, Skype)
5. Learning Portability (Podcasting, Mobile technology)
6. Learner Empowerment and Individualization of Learning (Blogs, Wikis, etc.)
7. Online Portals of Information
8. Online Learning Object Repositories (MERLOT, Connexions, Careo, Jurom)
9. Open CourseWare (MIT OCW, Utah State, Johns Hopkins, Japan, CORE, OOPS)
10. Knowledge Brokers and Collectors

Slide 1
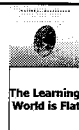
The Ten Forces that Flattened the World

The Learning World is Flat

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

Slide 2

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

Google

Web   Images   Groups   News   Froogle   Local   Scholar   more »

Advanced Search
Preferences
Language Tools

[Google Search] [I'm Feeling Lucky]

Information about Hurricane Katrina

Advertising Programs - Business Solutions - About Google

Make Google Your Homepage!

©2005 Google - Searching 8,168,684,336 web pages

Slide 3

Google Print Project

Google
Book Search

The complete plays of Shakespeare.
Now at your fingertips.

In Shakespeare's day, gaining greater access to his plays meant duking it out with the other "groundlings" for the best view of the stage. It took centuries for the modern printing press to bring plays like *Hamlet* to people all around the world – and for the Bard to become one of the most quoted writers in history.

Now Shakespeare's oeuvre is even more accessible. Search within *Hamlet* for "to be or not to be" to read the rest of his famous soliloquy. Find out who called the world his "oyster" and why. Browse through a familiar play – or follow your curiosity to discover a new one. And if you decide you want to buy a copy, "All editions" will show you every version in Google Book Search, many of which are available for purchase.

## Slide 4

The Ten Forces that Flattened the World

The Learning World is Flat

2. **Rise in Demand for Online Learning**

Slide 5

Growth of Online Learning in Secondary Schools

TOTAL HALF-CREDIT ENROLLMENTS AT FLVS

70,000
60,000
50,000
40,000
30,000
20,000
10,000
0

2000-2001   2001-2002   2002-2003   2003-2004   2004-2005   2005-2006

Slide 6

Enormous Learner Demand in Maryland WebCT@Maryland (March 2005)

Number of Unique Students

35000
30000
25000
20000
15000
10000
5000
0

Spring 2001   Fall 2001   Spring 2002   Fall 2002   Spring 2003   Fall 2003   Spring 2004   Fall 2004   Spring 2005

Open University of Israel
(overall enrollment growth)

Student enrollment in the Open University, Israel
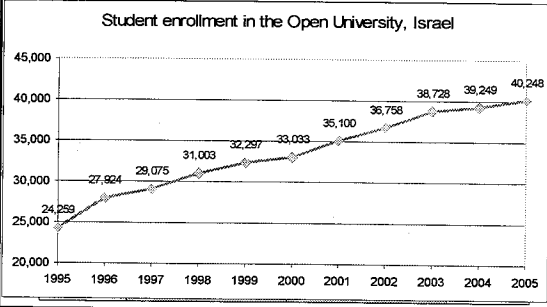
Defense Acquisition University
Shaping a Culture of Career-Long Learning

Cost Per Student

The Ten Forces that
Flattened the World
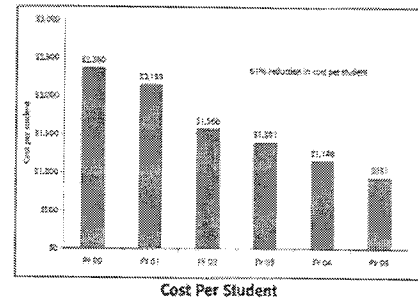
The Learning
World is Flat

3. **Open-Sourcing Learning:
Sakai, Moodle,
eduCommons**

Free and Open Source Software

July 28, 2006

Steven Weber, Professor of Political Science at
UC Berkeley, The Success of Open Source
(published by Harvard University Press).

"Weber started out asking why a large
number of programmers would be
motivated to volunteer their time to a
goal that does not have a direct
individual financial benefit, but found
that more pertinent questions should be
asked."

The Success of Open Source:
A Subject for UC Berkeley Researcher
By Paula Murphy, TLtC Assoc. Director, Dec 2004
http://www.uctltc.org/news/2004/12/weber.php

"If you are going to try to scale
production systems to non-friend, non-
kinship groups, you have to have some
sort of governance," explains Weber.
"For example, I would not put my
lecture notes on the web because I feel
strangely about people I don't know
benefiting from my work without them
giving anything in return.

Steven Weber, Professor of Political Science at UC Berkeley and author of The Success of Open Source (published by Harvard University Press).

"The trick for the open source projects is to find a way to create that reverse flow such that if I donate a piece of intellectual product to something that other people are going to use and modify, I want to somehow benefit from what they're learning -- that's the key exchange. The trick, and what people are experimenting with, are different ways to structure that exchange so it works."

---

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 Commons - 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.

Blackboard Buying and Suing
http://www.washingtontimes.com/business/20060814-100821-5993r.htm

The educational software market continues to grow, and so does the bottom line of Blackboard Inc., the D.C. provider of products for schools and universities.
    The company last week announced second-quarter revenue of $43.6 million, a 32 percent jump from last year's $33 million.
    Blackboard, nearly six months after acquiring its largest competitor, WebCT Inc., for $178 million, reported a net loss of $6.3 million (23 cents per diluted share) compared with earnings of $6.1 million (21 cents) a year

Blackboard sees 32 percent growth
By Kara Rowland
THE WASHINGTON TIMES
August 15, 2006

---

2. Moodle

---

3. Sakai Project

---

4. Learn from MIT

Slide 1

The Ten Forces that Flattened the World

4. **Collaboration (e.g., SharePoint, Groove, Word, Interwise, Breeze)**

The Learning World is Flat

Slide 2

Sharing in Virtual Teams (e.g., Groove, SharePoint)

Ray Ozzie
Founder, Groove Networks

Slide 3

Online Groups...

Slide 4

Skype

Slide 5

The Ten Forces that Flattened the World

5. **Learning Portability (Podcasting, Mobile technology)**

The Learning World is Flat

Audacity

Slide 6

$100 Laptop

The project aims to build peer-to-peer communications

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

A revolution in a laptop

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

Wireless Technology

MOST (UN)WIRED SCHOOLS?

Always online — and always talking: When three days without a word is an eternity

---

DePauw University

Hot Trend: Mobile Technology

Work away from work gets easier with technology

Vodcast for Medical Training
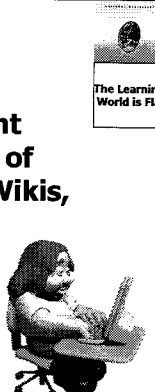
(e.g., "SonoSite on the small screen: The Bothell-based company uses podcasts for its ultrasound scanner training," By Eric Fetters, Herald Writer, Everett, WA, Sept 25, 2006)

Dan Bates / The Herald, Sept 25, 2006
David Levesque, vice president of global learning at SonoSite in Bothell, demonstrates the company's new podcast training for ultrasound technicians.

The Ten Forces that Flattened the World

The Learning World is Flat

6. **Learner Empowerment and Individualization of Learning (Podcasts, Wikis, and Blogs, etc.)**

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)

Video Blogging

Podcasting

The quality of some of the podcasts I have listened to is certainly as good as many supposedly professional radio stations

Sharing Encyclopedias
(Wikipedia; Jimmy Wales, Founder)

Belatedly, Britannica lambastes Wikipedia findings

The Ten Forces that Flattened the World

7. Online Portals of Information

Public Library of Science

Museum of Online Museums

Squidoo!!! (Sharing a lens...)

Stanford Encyclopedia of Philosophy

Portals for Corporate Training

Digital Libraries (LibraryShare)

The Ten Forces that Flattened the World

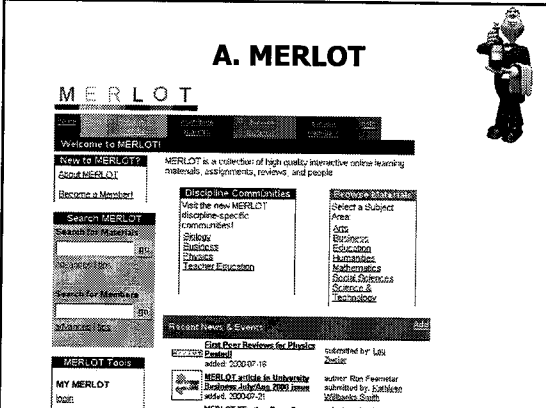8. **Online Learning Object Repositories (MERLOT, Connexions, CAREO, Jorum) and ADL's SCORM Project**

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."
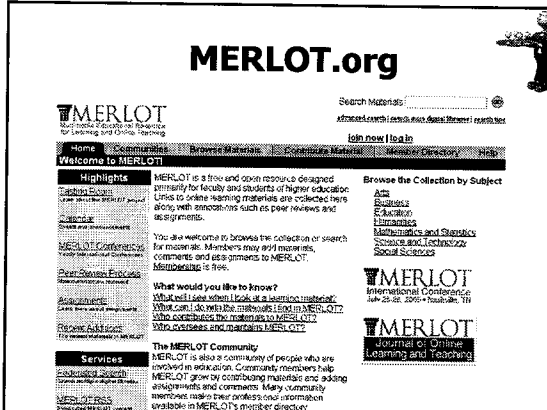
Claude Ostyn, Click2Learn

A. MERLOT

MERLOT.org

MERLOT People Metrics
(Gerald Hanley, October, 2005)

| MEMBERS	Birthyear 2001	Last Year 2004	This Year 2005
Students	706	3,652	5,010
Faculty	2,864	11,563	14,754
Staff	736	2,522	3,122
Administrators	-	280	746
Librarians	-	146	280
Other	421	1,867	2,341
TOTAL # of Members	4,727	20,030 453 per month	26,253 712 per month

---

MERLOT Collection Metrics
(Gerald Hanley, October, 2005)

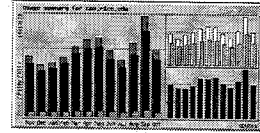| Materials-Related Metrics	CSU 1999	Birthyear2001	Last Year 2004	This Year 2005
# of Materials (# deleted per year)	2,732*	5,421	9,806 (266)	12,274 (226)
"Persistence" of Materials	N/A	N/A	97.3%	98.2%
# of People who contributed materials	N/A	408* (7.5%)	1,423 (7.1%)	1,831 (7.0%)
Average # of materials added per contributor	N/A	9.3*	6.9	6.6

* = estimates

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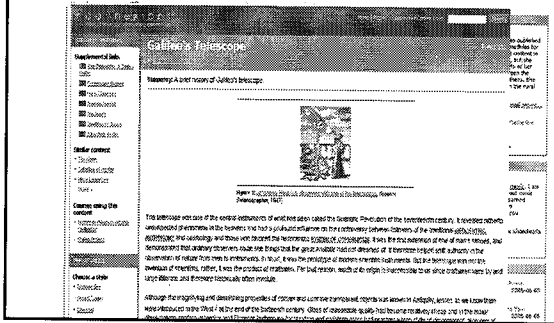
**http://cnx.rice.edu:8080/stats**
Sept 2005 had "14.4 million hits representing about 1 million page views by about 430,000 folks from 157 countries." growing at a rate of about 1 million hits per month.
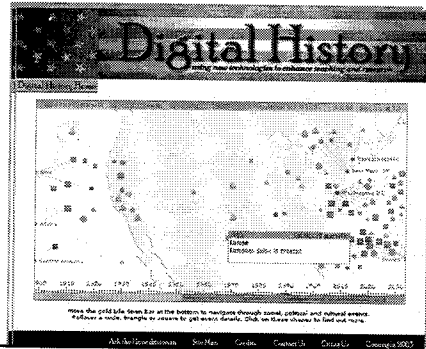

Connections Growth

>3500 modules (3-5 pages)
>180 courses (October 2006)
multiple languages
engineering, computer science, nanotech, physics, statistics, math, history, music, bio-diversity, botany, bio-info, IP, BRIT, UNESCO, UN, Sigma Xi, ...
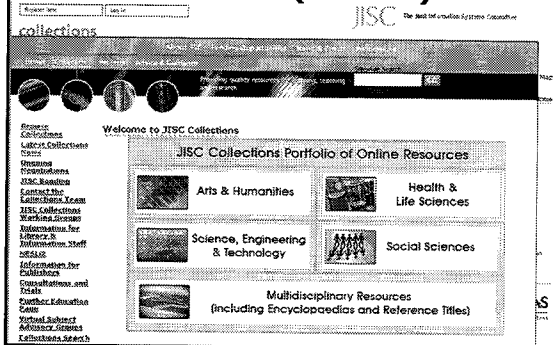from authors *worldwide*
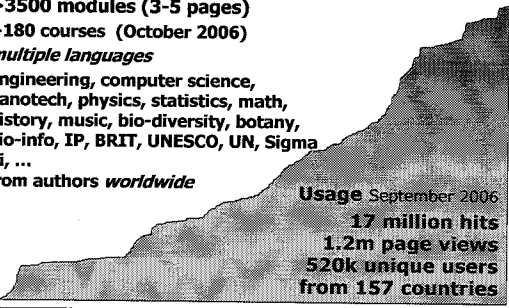
Usage September 2006
17 million hits
1.2m page views
520k unique users
from 157 countries

C. Textbook Revolution

D. JORUM (from UK)

JORUM Overview

- "JORUM is a **JISC** -funded collaborative venture in UK Higher and Further Education to collect and share learning and teaching materials, allowing their reuse and repurposing, and standing as a national statement of the importance of creating interoperable, sustainable materials."

Jurom Workflow

Processes

Details of the JORUM Workflow 0.2 workflow

Stages in workflow

Published after contribute stage

The Ten Forces that Flattened the World

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

The Learning World is Flat

Open Source Courseware

Open University of UK

Per David Wiley, Utah State University (October 2005)

"The first thing you should know is that there are many more schools than just MIT doing OCW now, including Johns Hopkins (ocw.jhsph.edu), Tufts (ocw.tufts.edu), Utah State University (ocw.usu.edu), and Foothill-DeAnza in California (sophia.fhda.edu).

Per David Wiley, Utah State University (October 2005)

"When you consider the schools participating in consortia in South America, China, Japan, France, Utah, and other regions, the number of universities involved with opencourseware in some manner reaches well into the hundreds. As of today there are currently 45 publicly accessible OCWs in the world in a number of languages."

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."

Johns Hopkins OpenCourseWare Project

Tufts OpenCourseWare Project

University of Notre Dame

Japan OCW Alliance

Vietnam Fulbright Economics OCW

USU OpenCourseWare Project

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)."

Shelley Henson, Center for Open and Sustainable Learning (COSL), Utah State University

---

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

---

The Biggest OCW Localization Volunteer Group in the World

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

電子工程與資訊科學(Electrical Engineering and Computer Science)

What's their Beliefs?
(Chu, May 28, 2006)

- Collective Minds is better than a single genius translator.
- Perfect Translation doesn't exist.
- 863 Volunteer translators
  1,037 courses adopted
  490 courses near completion
  (up 170 since Nov)
- 80 courses already finished (up 20 since Nov)

OOPS
Opensource Opencourseware Prototype System
開放式課程計劃

Non-adopted courses: 30 (7.27%)

Total Course Number 400

Course Transcription Completed: 49 (12.25%)
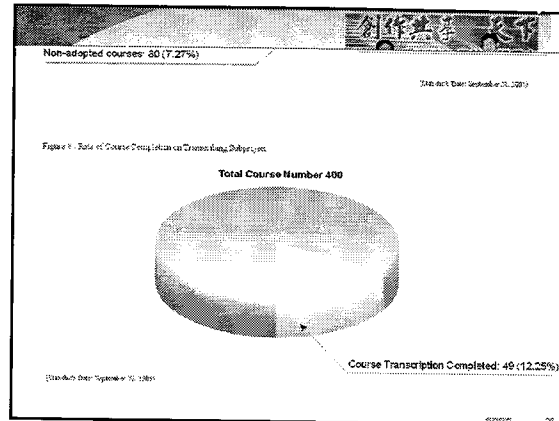
Lucifer Chu, Chairman and Janitor of OOPS, Taiwan

The Ten Forces that Flattened the World

10. Knowledge Brokers

The Learning World is Flat

Consortia, Networks, and Brokers of Knowledge (and Collections, David Wiley)

What can you do in a flat learning world?

- Consider Copyright Options
- Publish in Open Source Journals
- Attend Open Source Conferences

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."

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

Open Source Journal

Conference at Utah State, Sept 2005 Summit in Arizona, December, 2004

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

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

- Role in knowledge sharing: producers, consumers
- Distinguishing features: creativity, structure, faculty community, rigorous review process
- (Different Affiliations, accomplishments, license, language(s), mission, etc.)

Sharing Questions (today)

- For what purpose will people share?
- Who will continue to maintain or update such sites?
- Will these "share" sites bridge the digital divide?
- 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?

Sharing Questions (future)

- How will such learning objects of today be viewed in 100 or 200 years?
- What new technologies will emerge and be used for knowledge sharing?
- Will online sharing become expected of all faculty members around the planet?
- If so, how will that change the face of higher education?
- What collaborations are possible between corporate world and OOPS, OCW, MERLOT, etc.?

Poll #2: So who is still too scared to share???

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)

It's Over...

Poll: Ok, then, who wants more???

    A. Yes
    B. No
    C. Not sure

Ok...it is the end...or is it?