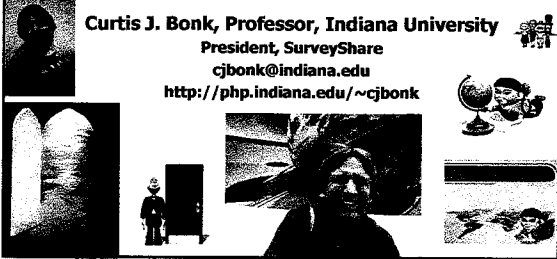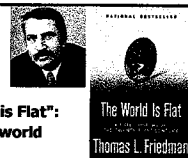## How the Learning World Became Flat (Open): Ten Knowledge Sharing and Technology Trends Equalizing Access to Learning

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

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

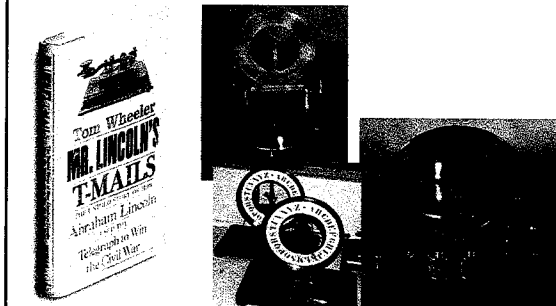The World Is Flat
Thomas L. Friedman
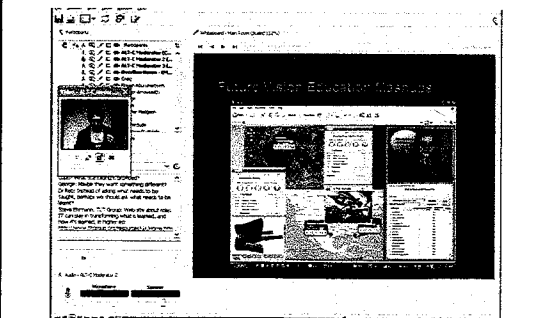
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## The Ten Forces that Flattened the World

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)
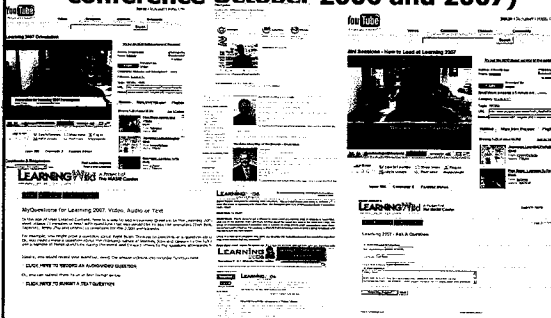
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## Telegraph: Flattening the world in 1860

Tom Wheeler
MR. LINCOLN'S T-MAILS
Abraham Lincoln
Telegraph to Win
the Civil War

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## Conference Attendance from Anywhere (e.g., Michelle Selinger, ALT-C Keynote, September 2007, Univ of Nottingham)

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## Conferences Participation from anywhere (Elliott Masie, Learning conference October 2006 and 2007)

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



LIVE, INTERACTIVE BROADCASTING

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

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

The Learning World is Flat

The World is Flat
Thomas L. Friedman

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## Three Larger Trends of WE-ALL-LEARN

The Learning World is Flat

- 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.

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## The Ten Forces that Flattened the World

The Learning World is Flat

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



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



Jeff Han on TED Talks

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## What if every early elementary kid could have a terabyte (1,000 gigabytes or 1 trillion bytes) of data on a thumb drive?
(Wired Magazine, October 26, 2007 says it will be possible in a few years; research from Arizona State)



WIRED

Terabyte Thumb Drives Made Possible by Nanotech Memory

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



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



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



**New Ways to Find Lectures**



**Autonomy, Choice: B. Read, Listen, etc. to online books (e.g., "An International Episode" by Henry James)**



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

## The Ten Forces that Flattened the World

### 2. Enormous E-Learning and Blended Learning

The Learning World is Flat

*Detroit Free Press*

| Detroit Free Press |

**EDUCATION** with Student News
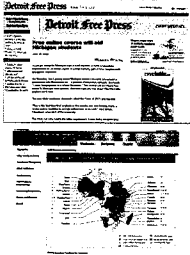
**Students prefer online courses**

Classes popular with on-campus students

Friday, January 12, 2008; Posted: 3:18 a.m. EST (20:18 GMT)

(AP) — Andy Steele lives just a few blocks from the campus of Black Hills State University in Spearfish, South Dakota, so commuting to class isn't the problem. But he doesn't like lectures much, isn't a morning person, and wants time during the day to restore motorcycles.

So Steele, a full-time senior business major, has been taking so many classes as he can from the South Dakota state system's online offerings. He gets better

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## Total and Online Enrollment in Postsecondary Institutions
### Fall 2002 through Fall 2006
*(For Degree-Granting Institutions)*

| | Total Enrollment | Annual Growth Rate Total Enrollment | Students Taking at Least One Online Course | Annual Growth Rate Online Enrollment | Online Enrollment as Percent of Total Enrollment |
|---|---|---|---|---|---|
| Fall 2002 | 16,611,710 | NA | 1,602,970 | NA | 9.7% |
| Fall 2003 | 16,930,479 | 1.7% | 1,971,397 | 23.0% | 11.7% |
| Fall 2004 | 17,272,043 | 2.2% | 2,329,733 | 18.2% | 13.5% |
| Fall 2005 | 17,428,500 | 0.9% | 3,180,050 | 36.5% | 18.2% |
| Fall 2006 | 17,647,720 | 1.3% | 3,488,331 | 9.7% | 19.8% |

SOURCE: Online Nation: Five Years of Growth in Online Learning (October 2007)

**Sara Cordell, professor of English at the University of Illinois-Springfield, says she feels online students become better writers because they get so much practice. NPR Special, Nov 29, 2007, Larry Abramson.**
**(67% of US Colleges and universities offer online courses; 35% offer fully online programs.)**
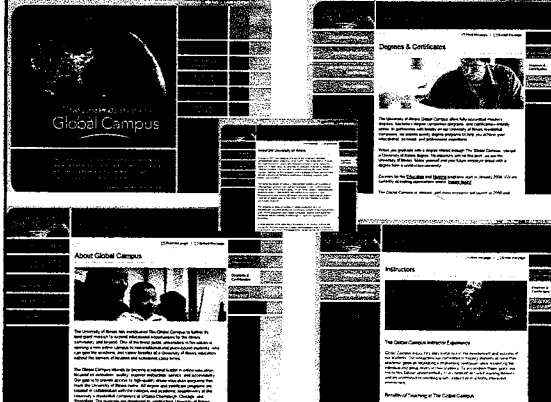
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### 'Distance learning' gets its close-up
By G. Jeffrey MacDonald, Special for USA TODAY
November 2007

- **More than two-thirds of all U.S. colleges and universities offer online courses, and 35% of schools offer programs that are entirely online, according to the Sloan survey, and 20% of the USA's 17 million college students say they have taken at least one course online.**

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



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Global Campus

Degrees & Certificates

About Global Campus

Instructors

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## The Ten Forces that Flattened the World

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

The Learning World is Flat



OPEN

# Moodle

## Community Growth
Total Moodle.org users.

Registered users total: 222310
New users in the past 24 hours:    824
Registered users accessed in past 24 hours:    2529
Registered users accessed in past month:    26689

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# The Sakai Project

RESOURCES

Location: BL EDUC PS40 29007 Resources

Title ▲

BL EDUC PS40 29007 Resources
  Moderator Sign-Up Sheet
  PS40 Syllabus Fall of 2005
  Video Stream Lecture 1: Intro to PS40 class and behaviorism Lecture (starts 29 minutes in and ends early)
Show other sites

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# The Ten Forces that Flattened the World

The Learning World is Flat

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

OPENING UP EDUCATION

The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge

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

Log in  Register

### THE CAPE TOWN OPEN EDUCATION DECLARATION

**Read the Declaration**

Cape Town Open Education Declaration:
Unlocking the promise of open educational resources

We are on the cusp of a global revolution in teaching and learning. Educators worldwide are developing a vast pool of educational resources on the Internet, open and free for all to use. These educators are creating a world where each and every person on earth can access and contribute to the sum of all human knowledge. They are also planting the seeds of a new pedagogy where educators and learners create, shape and evolve knowledge together, deepening their skills and understanding as they go.

This emerging open education movement combines the established tradition of sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet. It is built on the belief that everyone should have the freedom to use, customize, improve and redistribute educational resources without constraint. Educators, learners and others who share this belief are gathering together as part of a worldwide effort to make education both more accessible and more effective.

The expanding global collection of open educational resources has created fertile ground for this effort. These resources include openly licensed course materials, lesson plans, textbooks, games, software and other materials that support teaching and learning. They continue to making education more accessible, especially where

OPEN SOCIETY INSTITUTE

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# OpenCourseWare Projects

Tufts OpenCourseWare

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# National Repository for Online Courses (NROC) Commons

200 Free Online Classes to Learn Anything

LearningSpace

## 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."

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



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MIT OpenCourseWare: Highlights for High School

AP Biology

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## The Ten Forces that Flattened the World

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



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## Pubcasts!
NSF, the Public Library of Science, and the San Diego Supercomputing Center created a YouTube for scientists to help demystify important research papers. See SciVee
http://www.scivee.tv/



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## What if K-2 teachers could have free reading instruction at their fingertips? See free-Reading.net
http://free-reading.net/index.php?title=Main_Page

Free online materials could save schools billions

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



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## Referatory: MERLOT.org



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



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## K-12 Content: 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.
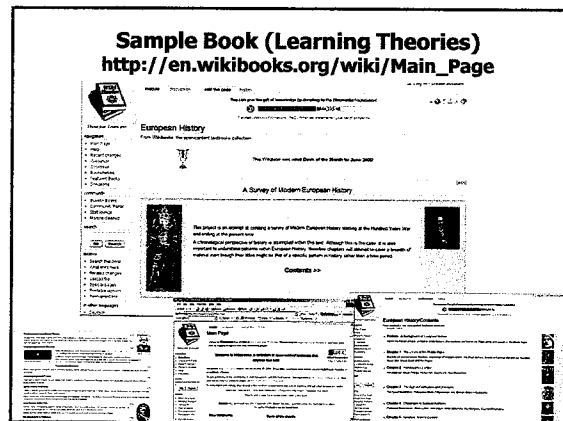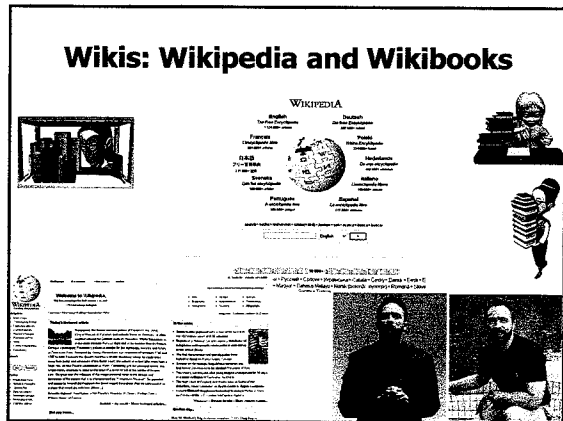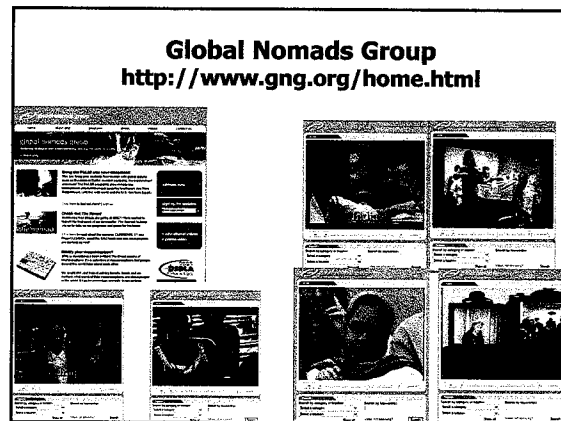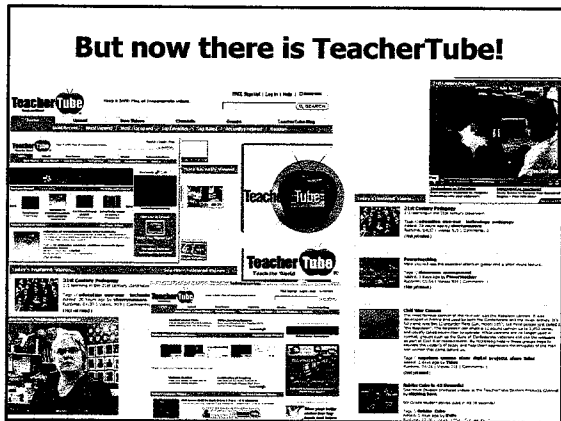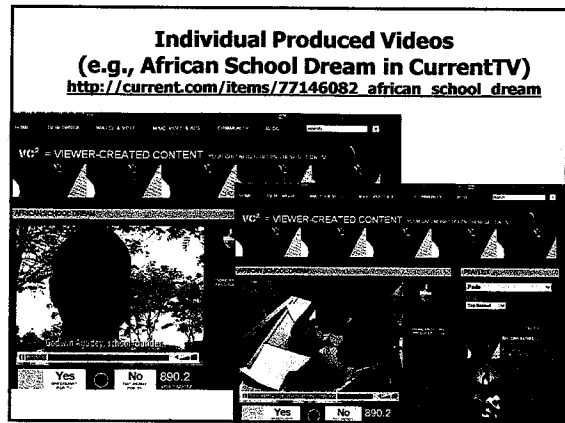


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## The Ten Forces that Flattened the World

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



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## Indexing Sounds in Cities with Google Maps

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



# But now there is TeacherTube!



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



# Wikis: Wikipedia and Wikibooks



## 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)**

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World Business

Hello, India? I Need Help With My Math

**TutorVista has 600 tutors in India and 10,000 subscribers in the United States, including Kenneth Tham in Arcadia, Calif.**

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

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**Flat Schools and Flat Classroom Projects!!!**

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**Life is a Breeze**

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**Expert Mentoring Online in Art and Design (Omnium Project—online graphics and photomedia project)**

## 1kg More Project for Rural 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)**



## Philippine President Now Resides In Second Life

Philippine President Gloria Macapagal-



## The Ten Forces that Flattened the World

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



## The Age of Wireless

**MOST (UN)WIRED SCHOOLS?**

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

CLICK HERE TO VIEW

**Totally wireless on campus**



## New York Times reporter Andrew Revkin

continues doing compelling multimedia work. He's now not only shooting photos and recording audio -- he's moved on to video and blogging.

In his latest trip, Andrew C. Revkin headed north to chronicle the shifts on Greenland and researchers' efforts to understand them. He periodically posted dispatches in a blog-like diary.

**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.



**The Ten Forces that Flattened the World**

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



**YouTube Research Group in Facebook (and advertized in my blog)**



**Archive Last Lectures**
(Randy Pausch, Carnegie Mellon University)



**Combining The Web 2.0 (e.g., Second Life, Blogging, and Photo Posting)**
**Stephen Mandelbrot**



**Cluster Maps (who is reading your blog or using your product); Blog of Will Richardson, famous K-12 blogger (left) and Learning Theories Book of Michael Orey, Univ of Georgia (right)**

## World Bridges and EdTechTalk



## Get Lectures from Stanford and Berkeley on iTunes



## Englishpod, Spanishpod, JapanesePod, Koreanpod, Arabic online, etc.



## Final Sharing Questions

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

## The End!!!
### Learning is Now Flat/Open...
### Remember that WE-ALL-LEARN!

Sample papers at: http://www.publicationshare.com/
Archived talks at: http://www.trainingshare.com/