

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

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 http://php.indiana.edu/~cjbonk



## Where are you headed?



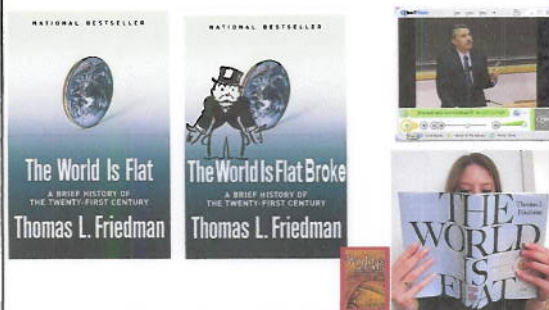
## Do you have a compass?



## Do you know the shape of the world?



## Is the World Flat?



## The Ten Forces that Flattened the World

Triple Convergence: (1) new economic players, (2) playing fields, and (3) processes.

1. 11/9/89: Berlin Wall came down
2. 8/9/95: Netscape went public
3. Work Flow Software (e.g., PayPal and eBay)
4. Open-Sourcing (Self organ collab communities; Mosaic, Apache, Wikipedia, Linux, Mozilla)
5. Outsourcing (Y2K)
6. Offshoring (e.g., China, Mexico, Thailand)
7. Supply-Chaining (e.g., Walmart)
8. Insourcing (UPS fixing Toshiba laptops)
9. In-forming (e.g., Google, Yahoo!, MSN Web Search)
10. The Steroids: Digital, Mobile, Personal, and Virtual (wireless, file sharing, VoIP, video camera in phone)



## Is the World Curved?

**THE WORLD IS CURVED**  
HIDDEN DANGERS TO THE GLOBAL ECONOMY

The Mortgage Crisis Was Only the Beginning...

**DAVID M. SMICK**

## Is it spiky?

**WHO'S YOUR CITY?**  
AN AMERICAN ECONOMIC REFORMER'S GUIDE TO THE NEW CITY ECONOMY

**RICHARD FLORIDA**

## Or is it Open?

**OPENING UP EDUCATION**  
The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge

The MIT Press

Tom Ichniowski and M.S. Vijay Kumar

## As I said, in Education, "The World is Open!"

**The World is Open**



## UCLA Summer Digs Program

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

Paula Taggart '11 by Nancy Robinson





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

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

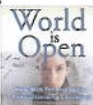
**Indiana Jones**

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

**WE-ALL-LEARN:** 

**Ten Forces that Opened the Learning World** 

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

**World Open** 

**Audience Participation!**

**1. WE**

**2. ALL**

**3. LEARN!!!**





### Triple Learning Technology Convergence of "WE-ALL-LEARN"

1. **Pipes:** The availability of tools and infrastructure for learning.
2. **Pages:** The availability of free educational content and resources (OER—Open Educational Resources).
3. **Participatory Learning Culture:** A move towards a culture of open access to information, international collaboration, and global sharing.






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



### Trend #1. Web Searching in the World of e-Books. What happens then?


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

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

Jeffrey Young, September 7, 2009

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




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

### Blio: Kurzweil Reinvents the Book


Charlie Sorrel, Dec 29, 2009, Wired  
<http://www.wired.com/gadgetlab/2009/12/blio-kurzweil-reinvents-the-book/>

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



### Tablet May Help E-Textbook Market, Publishers Hope

Chronicle of HE, Jeffrey Young  
January 31, 2010



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



### Free Online Books

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

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

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

The Learning World is Open

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

What happens then?

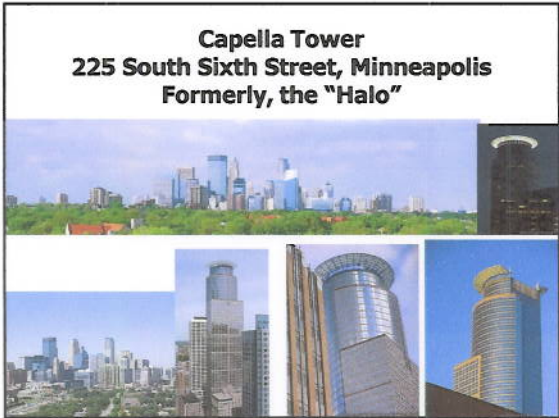
**WE**  
**ALL**  
**LEARN!!!**

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

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

### Indiana University High School

(4,000 students and 1,400 enrolled in diploma programs)



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

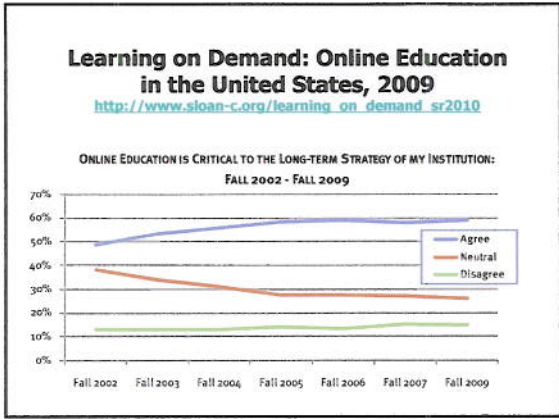
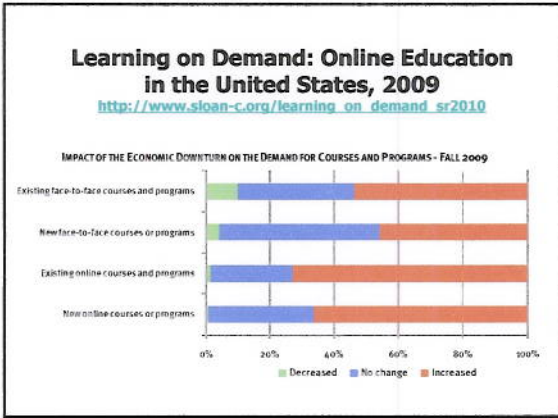
<http://www.coe.uh.edu/mycoe/CUIN/math/iSMART%20flyer4.pdf>  
<http://www.coe.uh.edu/mycoe/CUIN/math/iSMART.cfm>

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

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

	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Annual Growth Rate Online Enrollment	Online Enrollment as a Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	9.6%
Fall 2003	16,911,481	1.8%	1,971,397	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	18.2%	13.5%
Fall 2005	17,487,481	1.2%	3,180,050	36.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	9.7%	19.6%
Fall 2007	17,975,830	1.2%	3,938,111	12.9%	21.9%
Fall 2008	18,199,820	1.2%	4,606,353	16.9%	25.3%

UIS Online & Blended Enrollment



### Learning on Demand: Online Education in the United States, 2009

[http://www.sloan-c.org/learning\\_on\\_demand\\_sr2010](http://www.sloan-c.org/learning_on_demand_sr2010)

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

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

	Doctoral Research	Master's	Baccalaureate	Associate's	Specialized
Existing Face-to-face	51.9%	44.7%	30.9%	75.2%	26.1%
New Face-to-face	30.2%	35.9%	24.6%	63.3%	32.6%
Existing Online	75.0%	66.7%	62.1%	81.2%	62.0%
New Online	79.1%	67.6%	55.8%	71.9%	52.4%



U.S. DEPARTMENT OF EDUCATION

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

Research Initiative for Learning Effectiveness

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

The Learning World is Open

INFORMATION TECHNOLOGY

Blackboard

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

Moodle sites

Moodle downloads

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

The Learning World is Open

MIT OPEN COURSEWARE

Open Yale

Esc Traditional Textbooks

We Remix Open Textbooks!

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

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

Berkeley University of California

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

The Biggest OCW Localization Volunteer Group in the World

OOPS: Opensource OpenCourseWare Prototype System  
The Foundation of Fantasy Culture and Arts

OOPS 開放式課程計劃

### Sample OpenCourseWare Projects (Tufts, Johns Hopkins)

Tufts OpenCourseWare

IGSPN COURSEWARE  
The University of Public Health

### Cape Town Open Education Declaration, Dec 2007

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

THE CAPE TOWN OPEN EDUCATION DECLARATION

Open Education is the right of all people to access and share knowledge and information.

Open Education is the right of all people to create and share their own knowledge and information.

Open Education is the right of all people to participate in the creation and sharing of knowledge and information.

### Peer2Peer University and University of the People (free!)

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

Israeli Entrepreneur Plans a Free Global University That Will Be Online Only

Technology Review

Israeli starts 1st nation-free online university

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

The Learning World is Open

SPARKNOTES

40 MILLION STUDENTS

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

Transforming the System: An Interview with Michelle Rhee

FORA TV



### Tracking Live Internet Thawing: A Colossal of an Idea

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

### The Complete Works of Charles Darwin

The Complete Works of Charles Darwin Online  
<http://darwin.leds.ac.uk/>

Contributors and Acknowledgements

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 Dr Robert Steyer

### The Carlyle Letters Exploring Victorian World Through Letters and The Diary of Samuel Pepys (Great Plague, Great Fire, Charles Dickens, Erasmus Darwin, Mary Wollstonecraft Shelley, Robert Browning, John Stuart Mill, Ralph Waldo Emerson, Elizabeth Barrett Browning, and Alfred Tennyson)

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

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

Audio slideshow: 350 years of discovery

The world's oldest scientific society, The Royal Society is marking its 350th anniversary celebrations by putting its public domain papers online for the first time. The society's papers, which date back to 1660, are being made available on the Royal Society's website.

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

[http://chronicle.com/thisPass/11/imm-brain-dissected-today-in/90537?id=pm&utm\\_source=pm&utm\\_medium=en](http://chronicle.com/thisPass/11/imm-brain-dissected-today-in/90537?id=pm&utm_source=pm&utm_medium=en)

**Human Brain Dissected Today in a Live Webcast**

In 1952, Murray Closed Malenka agreed to undergo experimental brain surgery in hopes of stopping the epileptic seizures and spasms that had plagued his young son. The neurosurgeon William Beecher Scott Jr. at Harvard Medical's Connerly, performed out most of Malenka's hippocampus.

"The science is deeply complex," writes Scott Laife in the *San Diego Tribune Tribune*, "but so too did Malenka's ability to form new neurons, through the small, well parts of his life before the surgery, a condition called neurogenesis." (The Chronicle)

### Sharing Repositories and Referatories

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

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

The Learning World is Open

### Wikis: Wikipedia and Wikibooks

WIKIPEDIA

English 76 216 216 articles  
 Deutsch 26 116 116 articles  
 Français 12 216 216 articles  
 Italiano 12 216 216 articles  
 日本語 12 216 216 articles  
 Nederlands 12 216 216 articles  
 Español 12 216 216 articles  
 Português 12 216 216 articles  
 Polski 12 216 216 articles  
 العربية 12 216 216 articles  
 Türkçe 12 216 216 articles  
 Azərbaycanca 12 216 216 articles  
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### Conference to Conference (You Ustreamed my Ustream: Now that's a Twitter of an Idea)

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

### Individual Produced Videos (e.g., African School Dream in Current TV)

[http://current.com/items/77146082\\_african\\_school\\_dream](http://current.com/items/77146082_african_school_dream)



## Participatory E-Books

This collage features several e-book covers. On the left is 'THE FUTURE OF THE INTERNET AND HOW TO STOP IT' by JONATHAN ZITTRAIN. In the center is 'OPENING UP EDUCATION: The College Advantage of Open-Source Course Materials, Open Content, and Open Knowledge' by Peter Dinkley and Peter Fink. On the right is 'THE WEALTH OF NETWORKS: How Social Structures Create Wealth, Innovation and Power' by Soren Branson. There are also smaller images of people and documents related to open education.

## Scribd: Documents on Web

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

The top part shows a screenshot of the Scribd website with navigation options like 'Upload Documents', 'Share with the World', and 'Explore Our Library'. Below the screenshot is a photograph of two men standing in a room decorated with balloons and a Scribd logo on the wall.

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

This collage includes several educational resources. On the left is 'edutopia: The Collaboration Rigs'. In the center is 'Collaboration Generation'. On the right is 'The Learning World is Open' with the subtitle 'NEW SKILLS FOR A NEW AGE'. There are also images of people interacting and a 'CREATE COLLABORATE' graphic.

## Synchronous Conferencing Presentations

This collage consists of multiple overlapping windows from a video conference. It shows various participants in different settings, some in professional attire and others in more casual environments, engaged in a meeting.

## The Next Generation of Videoconferencing

Chronicle of HE, October 21, 2009

The top part shows a screenshot of a video conference interface. It features a large video feed on the left showing two people in conversation, and a list of participants on the right. Below the screenshot is a small image of a person in a red shirt. At the bottom, there is a caption: 'Footage courtesy of USC Institute for Creative Technologies' and a paragraph: 'Researchers at the University of Southern California and the University of North Carolina at Chapel Hill are creating new tools that may soon let people attend videoconferences as...'.

## Adventure Learning, GeoThentic, GoNorth (National Geographic)

(Aaron Doering, Univ of Minnesota)

This collage features educational content related to adventure learning. It includes several video thumbnails, one of which shows a person in a red jacket. There is also a logo for 'GeoThentic' and a 'GoNorth' logo. The text 'Explore HELPING LEARNING LEARN.' is visible at the bottom.

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

**Second Life**  
(business, law, education, English, medicine)

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

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

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

**We Are Going Mobile!**

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

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

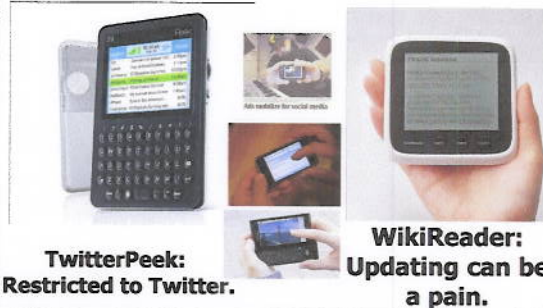
(per Paul Kim, Stanford, 2009); Nokia Research Lab  
[http://news.yahoo.com/s/afp/20090308/bs\\_afp/indiseconomytelecom](http://news.yahoo.com/s/afp/20090308/bs_afp/indiseconomytelecom)



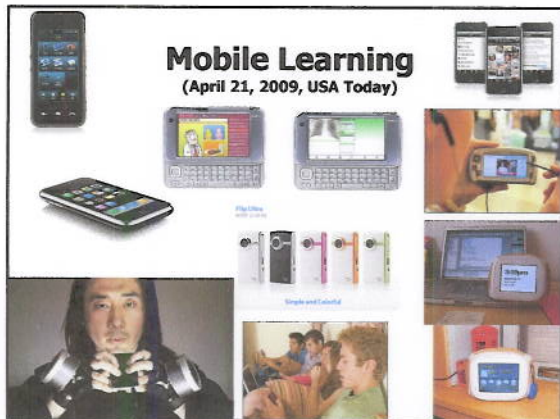
**Terabyte thumb Drives and Magic Pens!**  
(The Pulse from Livescribe, \$129-\$169)



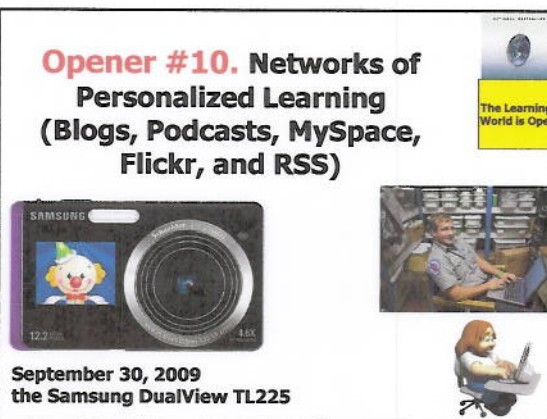
**TwitterPeek, WikiReader not worth the loot, USA Today, Edward Baig, November 5, 2009**



**Mobile Learning**  
(April 21, 2009, USA Today)



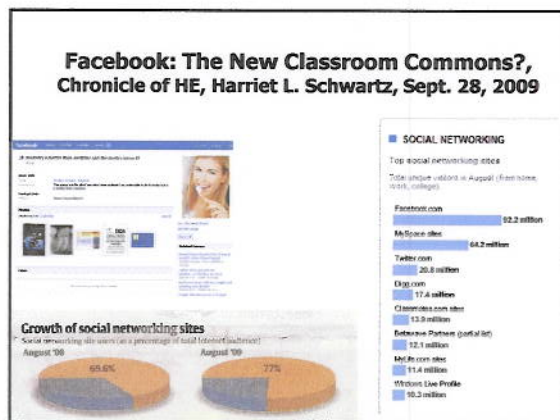
**Opener #10. Networks of Personalized Learning**  
(Blogs, Podcasts, MySpace, Flickr, and RSS)



**Podcast Shows**  
(subscribe to ShakespeareCast.com)



**Facebook: The New Classroom Commons?, Chronicle of HE, Harriet L. Schwartz, Sept. 28, 2009**



### Teaching With Twitter

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

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

"A powerful opportunity for people around the world to connect with language partners"

**Social Language Learning - Online!**

Learn a new language with fun lessons around the world. **100% FREE!**

**Language Learning on Livemocha**  
 Livemocha is the world's largest language learning community with over 2 million members! Designed for all language goals and skill levels, Livemocha offers free lessons, exercises, and a community of learners.

**Livemocha Challenge**  
 Learning a new language? Take the Livemocha Challenge and test your foreign language skills!

### Predictions

1. Five Billion "Have-Nots" Have at It!
2. Emergence of Lifelong Super E-Mentors/Coaches
3. Quarter-Century Learning Clubs
4. Terabyte Learning Access Points
5. The Veneration of Learning
6. Personalization+ Portfolios
7. The Selection of Global Learning Partners
8. The Shared Learning Era
9. Teaching-Learning Perpetuities
10. Teachers, Teachers
11. The Rise of the Super Blends
12. Self-Determined Humans
13. Free Learning Zones
14. Authentic Learning Amalgamations
15. Alexandrian Aristotles

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

Slides at: [TrainingShare.com](http://TrainingShare.com)  
 Papers: [PublicationShare.com](http://PublicationShare.com)  
 Book: <http://worldisopen.com/>

The World is Open.  
 What happens then?

**WE ALL LEARN!!!**