"Stretching the Edges of Technology-Enhanced Training: From Tinkering to Tottering to Totally Extreme Learning"

Curtis J. Bonk, Professor, Indiana University
cjbonk@indiana.edu
http://mypage.iu.edu/~cjbonk/

Tinkering, Tottering, or Totally Extreme?

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

June 9, 2010

**TwitterPeek:
Restricted to Twitter.**

**WikiReader:
Updating can be a
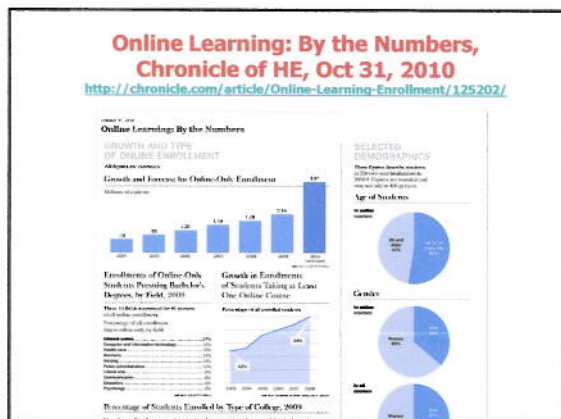pain.**

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this IS my happy face

**Dog Get Degree, The Chronicle of Higher Ed,
Sept 23, 2009, Unmuzzling Diploma Mills: Dog Earns
M.B.A. Online, Marc Parry**

Online Learning: By the Numbers, Chronicle of HE, Oct 31, 2010
http://chronicle.com/article/Online-Learning-Enrollment/125202/

Think 10 Years back: Shovelware

But I am not Content!!!

Study: Online learning might be less effective for some, eSchool News, Dennis Carter, September 15, 2010

Classroom students scored 84.5 percent on the first exam in the economics course, and online students scored 83.3 percent.

Faculty Views About Online Learning
This set of charts shows results of a survey in 2008-9 of 10,720 faculty members at 69 colleges and universities, Chronicle of HE, Oct 31, 2010, http://chronicle.com/article/Faculty-Views-About-Online/125200/
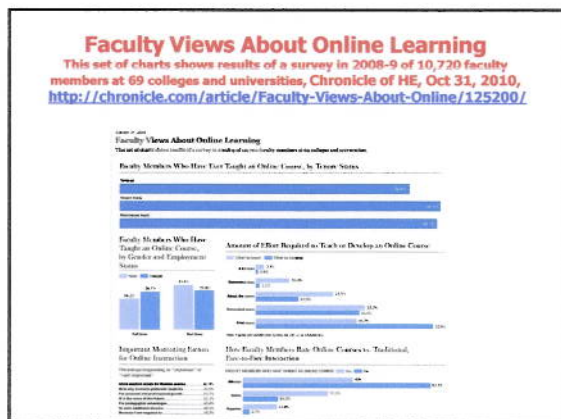
Marissa Mayer leads the company's product management efforts on search products — web search, images, news, books, products, maps, Google Earth, Google Toolbar, Google Desktop, Google Health, Google Labs and more. She joined Google in 1999 as Google's first female engineer and led the user interface and web server teams at that time. Her efforts have included designing and developing Google's search interface, internationalising the site to more than 100 languages, defining Google News, Gmail, and Orkut, and launching more than 100 features and products on Google.com

Brewster Kahle, and Aaron Swartz, Open Library the Internet Archive

Clay Shirky, NYU: How cognitive surplus will change the world, TED, June 2010
http://www.ted.com/talks/clay_shirky_how_cognitive_surplus_will_change_the_world.html

**May 24, 2010
Author Nicholas Carr, The Web Shatters Focus, Rewires Brains, Wired**
http://www.wired.com/magazine/2010/05/ff_nicholas_carr/

Mobile Learning
April 10, 2010: Seton Hill University, 2,100 students an iPad and freshmen a 13-inch MacBook laptop.

**July 23, 2010
India unveils $35 computer for students, CNN World, Harmeet Shah Singh**

TERMINATING TEXTBOOKS

California Governor Arnold Schwarzenegger Speaks

Fact Sheet

Online Education vs. Traditional Learning: Time to End the Family Feud, Mark David Milliron, Chronicle of HE, Oct 31, 2010
http://chronicle.com/article/Online-vs-Traditional/125115/?sid=pm&utm_source=pm&utm_medium=en

THE CHRONICLE
of Higher Education

Online Learning

Online Education vs. Traditional Learning: Time to End the Family Feud

BILL & MELINDA GATES *foundation*

August 9, 2010, Bill Gates Predicts Technology Will Make 'Place-Based' Colleges Less Important in 5 Years, By Jeff Young, Chronicle of HE
http://chronicle.com/blogPost/Bill-Gates-Predicts-Technology/28092/?sid=at&utm_source=at&utm_medium=en

Wired Campus

Bill Gates Predicts Technology Will Make 'Place-Based' Colleges Less Important in 5 Years
By Jeff Young

Bill Gates on in-person vs. online edu...

0:04 / 2:58

Salmon Khan (Khan Academy) (videos on math, bio, trig, chemistry, money and banking, economics, statistics, etc.; http://www.khanacademy.org/)

KHAN ACADEMY

Linear Algebra: Introduction to Vectors

The Khan Academy

The Khan Academy

Salman Khan

THE CHRONICLE
Online Learning

**July 25, 2010,
Professors' Use of Technology in Teaching,
Jeffrey Young, Chronicle of Higher Education**
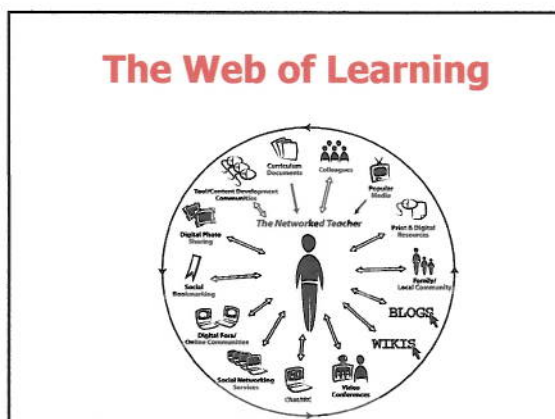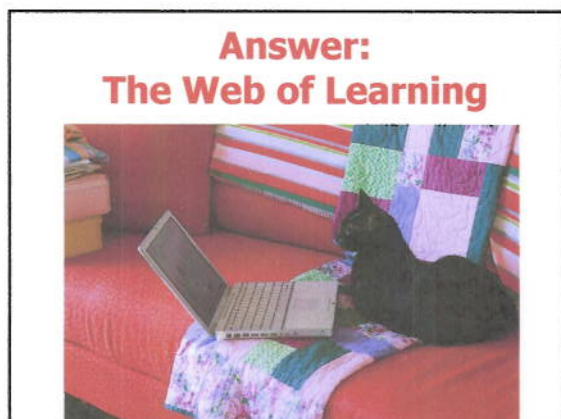
Percent of faculty who:

Course management systems
(WebCT, Blackboard, DesireZLearn, Sakai, etc.)

Plagiarism detection tools
(Turnitin, SEE Quiz, etc.)

Collaborative editing software
(Wikis, Google Docs, etc.)

Blogs

Student response systems
(Clickers, wireless learning interaction systems, etc.)

Videoconferencing or Internet phone chat
(Skype, NetMeeting, etc.)

Video games, simulations, or virtual worlds
(Myst, SimCity, Second Life, Civilization, etc.)
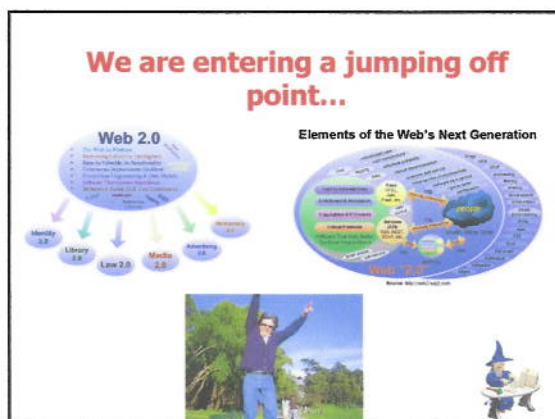

**Question:
What is the Web?**

- An entertainment system?
- A writing aid?
- A communications system?
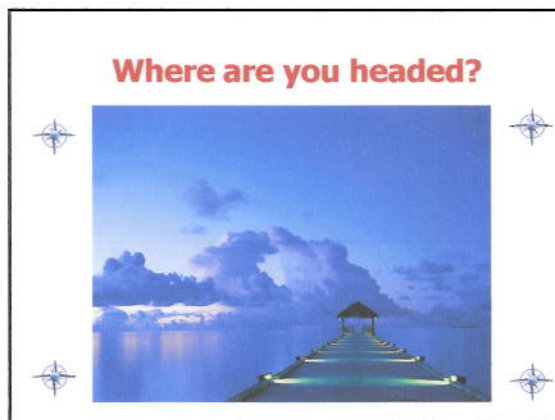- A means to handle commercial transaction?
- A social networking device?
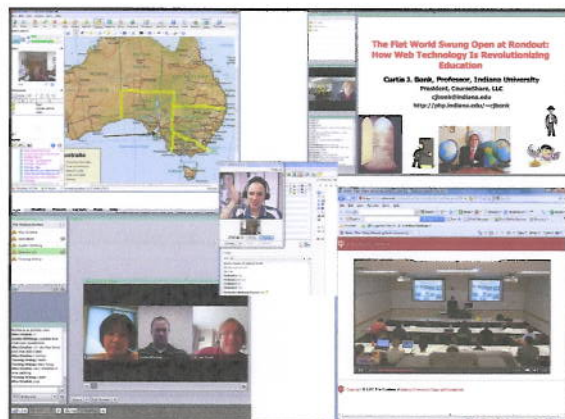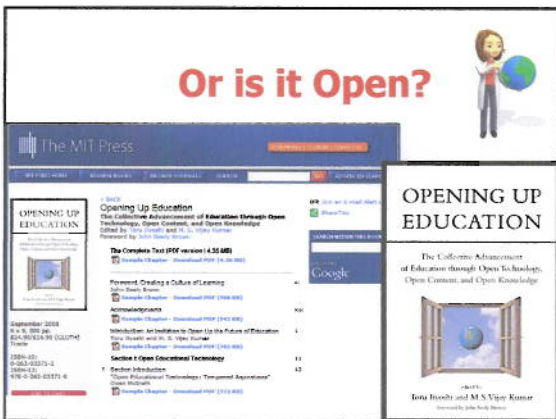
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No, it is a learning tool!

Answer:
The Web of Learning

The Web of Learning

Today we have the Web 2.0

We are entering a jumping off point...

Life in the Cloud...?

Where are you headed?

Do you know the shape of the world?

Is the World Flat?

The World Is Flat
A BRIEF HISTORY OF
THE TWENTY-FIRST CENTURY
Thomas L. Friedman

The World Is Flat Broke
A BRIEF HISTORY OF
THE TWENTY-FIRST CENTURY
Thomas L. Friedman

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?

RICHARD FLORIDA

Or is it Open?

OPENING UP EDUCATION

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

edited by
Toru Iiyoshi and M.S.Vijay Kumar

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)

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.

Magic #2: The R2D2 Model

Curtis J. Bonk | Ke Zhang

Empowering Online Learning

100+ Activities for Reading, Reflecting, Displaying & Doing

The R2D2 Method

1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)

1. Auditory or Verbal Learners

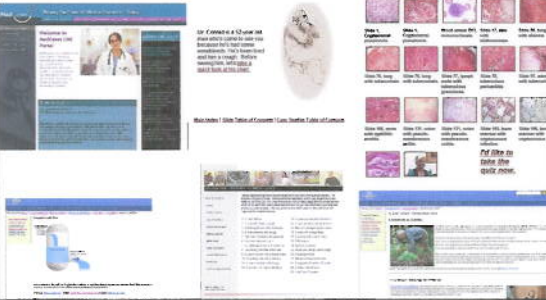- Auditory and verbal learners prefer words, spoken or written explanations.

Read 1. Wikibook or Wikipedia Editing or Critiques

- Ask students to critique a wikibook or page from Wikipedia

Reflect 2. Analyze Online Cases (problems, solutions, etc.)

Display 3. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Do 4. Create Blogs (e.g., Dr. Kim Foreman, San Fran State University, Come and See Africa Blog; http://comeandseeafrica.blogspot.com/)

We are not motivating students with the technologies that they love!

Ok, Million Dollar Question: How do you motivate online learners? What Words come to mind?

Magic #1: TEC-VARIETY Model for Online Motivation and Retention

1. **T**one/Climate: Psych Safety, Comfort, Belonging
2. **E**ncouragement, Feedback: Responsive, Supports
3. **C**uriosity: Fun, Fantasy, Control
   ...
4. **V**ariety: Novelty, Intrigue, Unknowns
5. **A**utonomy: Choice: Flexibility, Opportunities
6. **R**elevance: Meaningful, Authentic, Interesting
7. **I**nteractive: Collaborative, Team-Based, Community
8. **E**ngagement: Effort, Involvement, Excitement
9. **T**ension: Challenge, Dissonance, Controversy
10. **Y**ields Products: Goal Driven, Products, Success, Ownership

1. Tone/Climate: A. Video Course Intros
(examples from Northern Virginia Community College and Indiana University KD (online MBA) program)
Yun Yun Chow, Open U Malaysia, Making Art Lessons Come Alive with Web 2.0
http://www.youtube.com/watch?v=BO9rqJD1GXo

2. Encouragement, Feedback, etc.: A. Online Self-Testing (e.g., self study in accounting, vocabulary, anatomy, chemistry, dissection, etc.)

6. Relevance, Meaningfulness: A. Tour an Online Oil Drilling Site or Role Play Situations (i.e., BP)

TEC-VARIETY Model for Online Motivation and Retention

Tone/Climate
Encouragement, Feedback
Curiosity

Variety
Autonomy
Relevance
Interactive
Engagement
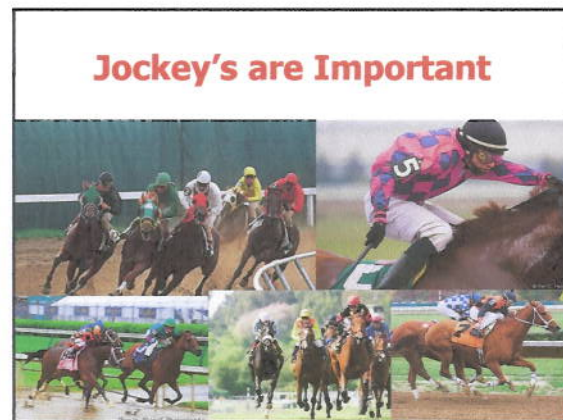**T**ension
Yields Products
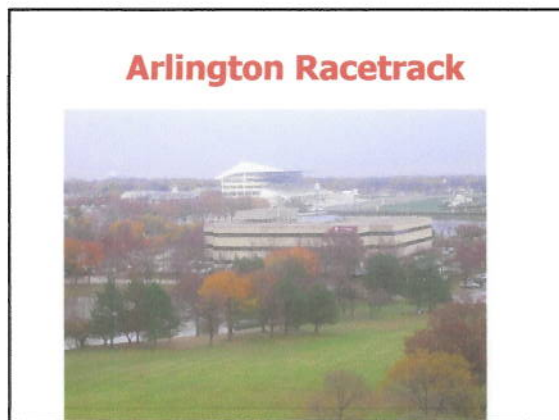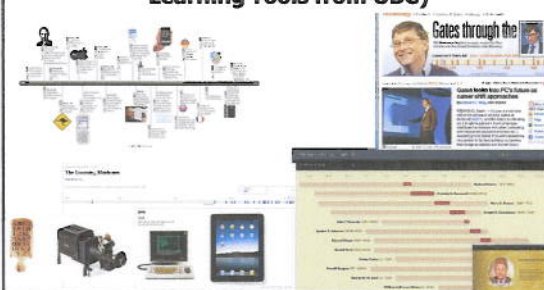
Tinkering

Tinker #1. Reading from Open Access Journals (e.g., PLOS)

Tinker #2. Webcast Lectures
(Tegrity, Echo360, Mediasite, etc.)

Tinker #3. Timeline Tools
(e.g., SIMILE from MIT (http://simile.mit.edu/),
Learning Tools from UBC)

Arlington Racetrack

Jockey's are Important

**Tinker #4. Online Literature Search
(Class Google Jockeys)**
(links to text, soundtracks, video clips, etc.)

**Tinker #5. Video Animations and
Self-Testings**

Tinker #6. Pubcasts.
(videos of authors of scientific papers
and science; e.g., SciVee)

Tinker #7. Collaborative Groups
(Google Docs, Ning, Google Groups, MSN Groups,
Yahoo Groups)

**Tinker #8. Track Life of a Scientist or
Famous People** (e.g., Brian J Ford,
independent scientist)
http://www.youtube.com/user/tellymonitor#p/a/u/1/LhGeApsKjasr

Tinker #9. Online Portals of Rich Data
United Nations Opens World Digital Library, Turning
the Pages from the British Library, etc. (history,
culture, literature, writing, art, etc.)

Tinker #10. Online Experiments (e.g., psychology)

Tinker #11. Open Ed Resources & OpenCourseWare (e.g., MIT OpenCourseWare)

Tinker #12. Educational Simulations

Tinker #13. Online Role Play (e.g., Tulane University, Exercise for Renewable Energy, Freeman Sch. of Business, roles include power traders and utility dispatchers, etc.)

Tinker #14. Podcast Reflections

Tinker #15. Expert and Domain Specific Blog Reflections (English, Health, Business, etc. blogs)

1/17/2011

Tottering

TERMINATING TEXTBOOKS

August 5, 2010
Remaking the College Campus,
Bridget McCrea, Campus Technology
http://campustechnology.com/Articles/2010/08/05/Remaking-the-College-Campus.aspx?Page=1

CAMPUS TECHNOLOGY

Yonsei University Library, Seoul, Korea

Totter #1. Digital Textbooks
(What South Korean Schoolchildren Can Teach Colleges About E-Textbooks; Jeff Young, Chronicle of HE. Korea E-Learning Week, Coex, Seoul, Sept. 16-17, 2010.)

Totter #2. Bridges to World of Expert and Practitioners (e.g., Watch or Listen to Online Conferences, Expert blogs, chats, interviews)

Totter #3. Famous Expert Via TED
(shared online video), Fast Company, *Anya Kamenetz,* September 1, 2010

FAST COMPANY   Kodak   TED ideas worth spreading

How TED Connects the Idea-Hungry Elite

Chris Anderson: The entrepreneur bought TED in 2001. "It felt like something you could devote your life to," he says

Totter #4. Real World Problems
(PBL online): Real-time Cases

Totter #5. Class Synchronous
Sessions and Archives (Breeze/Adobe Connect
Pro, Elluminate, WebEx, Dim Dim)

Totter #6. Global Class
Videoconferencing

On Wisconsin, Fall 2010

Dissolving Borders
Course puts distances aside to explore the dairy industries in Wisconsin and Mexico.

Totter #7. Synchronous and Asynchronous
Events (e.g., Breeze + Video + Online Forum +
Online Papers)

Totter #8. Online Language Learning
and Conversations
(e.g., PalTalk, iTalki, Palabea, Babbel)

Totter #9. Course Announcements (e.g., Teaching with Twitter; Course announcements and following people (e.g., microblogging)

Totter #10. Wikibooks, Wikipedia editing, wiki syllabi, wiki glossaries (Ron Owston, York University, Toronto)

Totter #11. Student YouTube Products

http://www.youtube.com/watch?v=xiwSIryPzsQ
http://www.youtube.com/watch?v=x3FJyi4Pn_E
http://www.youtube.com/watch?v=eD1awpaSuP0

Totter #12. Podcast Productions and Virtual Performances for students of pronunciation class (e.g., Tzu-Su Chen, Taiwan)

Totter #13. Video Blogging

Totter #14. YouTube as Class

Totter #15. Learn Anytime, Always On/Mobile. Will Technology Kill the Academic Calendar? Online, semesters give way to students who set their own schedules, Marc Parry, Chronicle of HE, October 10, 2010

Robert Johnson, who championed the open-format Learn Anytime program at a two-year college in Louisville, Ky. (above) checks students' e-mail while waiting for a flight. "Everything I need to do today, I can do on my phone," says Robert Johnson, who led the self-paced Learn Anytime program at Jefferson Community & Technical College, in Louisville, Ky. He often grades papers and communicates with students from a cafe near his home.

Totally Extreme Learning

Totally Extreme #1. Free Online Degrees
iSMART: Integration of Science, Mathematics, and Reflective Teaching (iSMART), University of Houston

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

Jen Chauvot and Mimi Lee, Univ of Houston

Totally Extreme #2. Live Science
(e.g., Human brain dissections, colossal squids discovered and investigated)

Totally Extreme #3. Immediate Science
Ida (a transitional species) *47-Million-Year-Old Fossil the Missing Link?* (May 20, 2009)

Totally Extreme #4. Live Expeditions
(Oceanographer touts deep sea web surfing; Nautilus Live allows people to watch expeditions live & listen to scientists in control rooms as discoveries made, eSchool News, June 2010, Deep-sea images reveal colorful life on ocean's floor, Sept. 2010))

Totally Extreme #5. Adventure Learning, GeoThentic, GoNorth (National Geographic) (Aaron Doering, Univ of Minnesota)

Earthducation, Aaron Doering and Charlie Miller, The University of Minnesota
http://lt.umn.edu/earthducation1/

Explorer Blogging and Interaction, e.g., Cassandra Brooks, Ice Stories

THE LAST OCEAN, The Last Ocean Project
http://www.lastocean.com/ and
http://lastocean-project.org/
Cassandra Brooks

Adventure Learning (cars and bikes)
Dan Grec and Mark Beaumont

Totally Extreme #6. Armchair Archeology
UCLA Summer Digs Program

Totally Extreme #7. Google Earth Archeology (David Thomas, Archeologist, La Trobe University, Australia)

Totally Extreme #8. Teen Solo Sailing. May 2010, Jessica Watson became the youngest person ever to sail solo, non-stop and unassisted around the world.

Abby Sunderland's blog

Totally Extreme #9. South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN, January 14, 2011
http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2

South African teens get virtual mentoring from all over the world, By Danielle Berger, CNN January 14, 2011 3:44 p.m. EST
http://www.cnn.com/2011/LIVING/01/13/cnnheroes.stokes/index.html?hpt=T2

Totally Extreme #10. On-Demand Multi-Participant Synchronous Conferencing

Totally Extreme #11. Robot Teachers
Another Benefit of Robot Teachers: No 'Moral Problems', Chronicle of Higher Ed, eff Young, Sept 15, 2010

Totally Extreme #12. International and Global Education and Competitions
(e.g., Global Game Jams, online role play, Global Videoconferencing)

Global Game Jam

Totally Extreme #13. Pocket School and Videoconferencing in Developing World
(Paul Kim, Stanford, Rwanda, August 2010, Kigali Institute of Education linking up with universities in India and Cameron through Satellite Internet video conferencing system. They were discussing Java programming.)

Totally Extreme #14. Second Life
(business, law, education, English, medicine)

Totally Extreme #15. Telepresence and Teleportec Systems (e.g., Cisco and HP)

Final Poll: How many ideas did you get?

1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.
7. More than 10.

Any Extreme Questions and Comments?

Note: Bonk papers and talks at:
Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: http://worldisopen.com/