

## Part 2. Generational Learning Styles, Digital Literacy, and Scholarship in the Web 2.0

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## Individualization of Learning

## Grown Up Digital: How the Net Generation is Changing Your World (2009)

How the Net Generation is changing your world

## Don Tapscott, blog (<http://grownupdigital.com/>)

### High number of teens attracted to science, technology, engineering and mathematics


Posted by Don Tapscott on 07 Jan 2009

## Don Tapscott (Grown Up Digital, 2009)


**"Infosys CEO Nandan M. Nilekani concurs. 'If an organization becomes too hierarchical, ideas that bubble up from younger people [aren't going to be heard].' (p. 96)**


## Don Tapscott (Grown Up Digital, 2009)

**"Infosys is on the right track. Net Geners don't want to toil in the same old bureaucracies as their parents. They've grown up in an era of constant innovation and change, and want the workplace to be equally innovative and creative." (p. 96)**


**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Net Geners told us an innovative work environment is perceived to be leading edge, dynamic, creative, and efficient. Not surprisingly, an innovative workplace is expected to have leading-edge technology." (p. 96)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"While there is much controversy, the early evidence suggests that the digital immersion has a tangible, positive impact...The Net Gen mind seems to be incredibly flexible, adaptable, and multimedia savvy." (p. 98)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Both these studies support the idea that continual and intense use of a particular brain region can lead it to respond like a muscle, increasing its size and presumably its efficiency...the brain can change throughout life as it responds to environmental influences" (p. 99-100)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Instead of focusing on the teacher, the education system should focus on the student." (p. 122)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Instead of lecturing, teachers should interact with students and help them discover themselves." (p. 122)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Instead of delivering a one-size-fits-all form of education, schools should customize the education to fit each child's individual way of learning." (p. 122)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Instead of isolating students, the schools should encourage them to collaborate." (p. 122)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"One-third of all Americans drop out before finishing high school. According to some analysts, the dropout problem is getting worse." (p. 123)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Nearly half who dropped out said classes were either not interesting or just plain boring. Seven out of ten said they weren't motivated to work hard." (p. 126)**




**Don Tapscott**  
(Grown Up Digital, 2009) 


**"Net Geners are not content to sit quietly and listen to a teach lecture. Kids who have grown up digital expect to talk back, to have a conversation." (p. 126)**




**Don Tapscott**  
(Grown Up Digital, 2009) 

**"They want choice in their education, in terms of what they learn, when they learn it, where, and how." (p. 126)**



**Don Tapscott**  
(Grown Up Digital, 2009) 

**"They want their education to be relevant to the real world, the one they live in. They want it to be interesting, even fun." (p. 126)**



**Don Tapscott**  
(Grown Up Digital, 2009)



"Students need to think creatively, critically, and collaboratively; to master the "basics" and excel in reading, math, science, and information literacy, and respond to opportunities and challenges with speed, agility, and innovation." (p. 127)



**Don Tapscott**  
(Grown Up Digital, 2009)



"Luis M. Proenza, president of the University of Akron, clearly gets it. The time has come for some far reaching changes to the university, our model of pedagogy, how we operate, and our relationship to the rest of the world...but, we need to listen to these Net Generation students to see the way forward." (p. 127)



**Don Tapscott**  
(Grown Up Digital, 2009)



"First, teachers have to step off the stage and start listening and conversing instead of just lecturing. In other words, they have to abandon their broadcast style and adopt an interactive one." (p. 130)



**Don Tapscott**  
(Grown Up Digital, 2009)



"Second, they should encourage students to discover for themselves, and learn a process of discovery and critical thinking instead of just memorizing the teacher's information." (p. 130)



**Don Tapscott**  
(Grown Up Digital, 2009)



"Third, they need to encourage students to collaborate among themselves and with others outside of school. Finally, they need to tailor the style of education to their students' individual learning styles." (p. 130)




**Don Tapscott**  
(Grown Up Digital, 2009)




"...beginning in 1995 with the Internet and today's Web 2.0 participatory tools, tinkering has come back full force, though now it's virtual and social tinkering, rather than mechanical thinking." (p. 135)




**Don Tapscott**  
(Grown Up Digital, 2009)




**"The individual learning model is foreign territory for most Net Geners, who have grown up collaborating, sharing, and creating together online." (p. 137)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**Per John Seely Brown, "The whole notion of passively sitting and receiving information has almost nothing to do with how you internalize information into something that makes sense to you." (p. 137)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**Per John Seely Brown, "Learning starts as you leave the classroom, when you start discussing with people around you what was just said. It is a conversation that you start to internalize what some piece of information meant to you." (p. 137)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**In contrast, in a one-size-fits-all model, "a curriculum is developed based on predigested information and structured for optimal transmission." (p. 139)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**"The nation's digital schools are going wireless as students themselves increasingly access the Internet via mobile devices." (p. 142)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**"It is no accident that some of the most successful advertizing campaigns targeting young people are placing their content on popular sites like YouTube and social networks like MySpace." (p. 201)**




**Don Tapscott**  
(Grown Up Digital, 2009)




**"Instead of broadcasting to the kids, they're launching on interactive media platforms where users take an active role in creating, publishing, filtering, remixing, and distributing content." (p. 201)**




**Don Tapscott**  
(Grown Up Digital, 2009)



**"Given a choice between pursuing their passions and making lots of money, most Net Geners choose passion (China, Japan, and Mexico are the exception)." (p. 209)**



**Any Grown up Digital Reflections...???**



**Generations: Dealing with Boomers, Gen-X, and Beyond**  
*N. Boyce Appel, April 1, 2005, Practice Management Digest*

Generalizations about Generations—  
Categorizations vs. Stereotypes

Generational Group	Born	Age	Stereotype
Silent Generation	1925 - 1942	61 - 78	Adaptive
Baby Boomers	1943 - 1960	43 - 60	Idealists
Thirteenth (Gen. X)	1961 - 1981	22 - 42	Reactive
Millennial (Gen. Y)	1982 - ?	13 - 21	Civic

Neomillennials???

**Boomers, Gen-Xers, and Millennials: Understanding the "New Students", Diane Oblinger, Educause, July/August, 2003**

**Attributes of the info age mindset:**

- Computers are not technology
- Believe it is cool to be smart
- Are fascinated by new technologies
- Reality is no longer real
- Doing is more important than knowing
- Learning more like Nintendo than logic
- Multitasking is a way of life
- Typing preferred over handwriting
- Staying connected is essential
- There is zero tolerance for delays
- Consumer and creator are blurring

**Generation Xers**  
The Bresnahan Group 2000

- They look for a manager who will coach and develop them, invite them to contribute, and recognize their efforts. If this atmosphere is not provided, they will leave when the opportunity presents itself.

### **Generation Xers**

The Bresnahan Group 2000

- Xers regard companies as places to grow, not places where they will grow old. Their focus is on gaining skills and knowledge that will qualify them for the next job.

### **Generation Xers**

The Bresnahan Group 2000

- They focus on the end results, therefore it is important to know upfront why information is needed. They like to be involved and look to control their own destinies. They resent and resist being force-fed.

### **Gen Xers in Workplace (the diffs)**

*N. Boyce Appel, April 1, 2005, Practice Management Digest*

- More collaborative and independent
- Less hierarchical
- More altruistic
- Good at dealing with change
- More comfortable with women bosses
- More skilled in management

### **Gen Xers in Workplace (the diffs)**

*N. Boyce Appel, April 1, 2005, Practice Management Digest*

- More tech-savvy (the first real information-age generation)
- Candid in communication
- Self-reliant
- Rule-shy
- Not intimidated by authority
- Creative
- Strive for real balance between work and private life
- Desire workplaces that feel like communities

### **Gen Xers in Workplace (worst things)**

*N. Boyce Appel, April 1, 2005, Practice Management Digest*

- Fear-based environment
- Poor time management
- Micromanagement
- Politically based culture
- Indirect communication
- Opinions and ideas ignored
- Prevalence of lip service, not action

### **Gen Xers in Workplace (worst things)**

*N. Boyce Appel, April 1, 2005, Practice Management Digest*

- Failure to give feedback and regular performance reviews
- Meaningless raises
- Insincere, gratuitous "thank you's"
- People thrown into jobs without training
- Disorganized, cluttered, or dirty workplace
- Not telling the "why's"
- "Because I said so" or similar attitudes
- Unacceptable staff behavior overlooked.

**Gen Xers in Workplace (best things)***N. Boyce Appel, April 1, 2005, Practice Management Digest*

- **Team-based management**
- **Diversity**
- **Exploration**
- **Experimentation**
- **The idea is the power, not the person**
- **Team and individual credit**
- **"Resume building" opportunities.**

**Gen Xers in Workplace (best things)***N. Boyce Appel, April 1, 2005, Practice Management Digest*

- **Appreciate us. Show you care.**
- **Be flexible. Let us have a life beyond work.**
- **Create a team. Give us the family we never had.**
- **Develop us. Help us to increase our skills.**
- **Involve us. Ask our opinions.**
- **Lighten up. Remember, it's not brain surgery.**
- **Walk your talk. Practice what you preach.**

**Gen Xers***(Neil Yamashiro, 1998, US Army National Guard)*

- **Cynical, have different values, distrust older generation, have a distorted view of reality, spent a lot of time alone, products of divorce, competitive, do not feel loyalty to an organization, believe in getting what they can—situational ethics, desire instant gratification without having to work for it, independent**

**Independence: Boomer** (from Learning: Generation Does Matter, Leslie Darling, CLO, Element K, CLO Magazine)

- **Dependence on instructor or authority figure to define and support learning.**

**Independence: Xer** (from Learning: Generation Does Matter, Leslie Darling, CLO, Element K, CLO Magazine)

- **Having grown up for the most part with both parents working/furthering their education, Xers are used to getting things done on their own. Hence, they tend to be independent problem solvers and self-starters. They want support and feedback, but they don't want to be controlled. (Brown, Bettina Lankard, 1997)**

**Technology: Boomer** (from Learning: Generation Does Matter, Leslie Darling, CLO, Element K, CLO Magazine)

- **Most boomers became aware of computer technology later in their education or in their careers. The computer is seen as a "nice to have" tool to do things they used to do manually or with paper and pencil. The translation of "how would I do this with the computer" is usually made.**



**Technology: Xer** (from Learning: Generation Does Matter, Leslie Darling, CLO, Element K, CLO Magazine)

- Generation Xers are technologically literate because they grew up with computers as part of their working world. They consider computer technology as a "need to have," not a "nice to have." Technology is an expected way of accessing information.

**Relevance: Boomer**

- Learn "what" or "how" first, and the "why" may come later as part of experience.

**Relevance: Xer**

- "What's in it for me?" is a question to which Gen Xers require the answer before they take the time to learn what or how.

**Lifelong Learning: Xer**

- Generation Xers do not expect to grow old working for the same company, so they view their job environments as places to grow. Learning is considered a continual process. They seek continuing education and training opportunities; if they don't get them, they seek new jobs where they can continue learning!

**Simulation: Boomer**

- Life experienced at a slower pace promotes an expectation of "it's ok to wait." Learning experienced from an early age as lecture with drill and practice without stimulation/response. Gaming as part of a learning context may be considered less effective because it is less "serious" and in some cases can be distracting.

**Simulation: Xer**

- Conditioned to expect immediate gratification (they grew up with drive-through fast food, remote controls, automatic teller machines and microwave ovens), and an expectation that learning should be stimulating and fun (Sesame Street). Generation Xers crave stimulation and expect immediate answers and feedback.

### Simulation: Xer

- Genxers have a rapid-fire information consumption capability. Rushkoff argues that many of the things for which this generation is maligned, such as short attention spans and lack of ability to concentrate on a single task at once are not problems but actually brilliant coping mechanisms for a world overloaded with information.

### Age and Interaction Preferences: Boomer

- Older people prefer less interaction than younger people in distance education (Kearsley, 1995).
- Older trainees prefer private implementation activities (i.e., individual learning), not small group discussions (Vampola, 2001).

### Simulation: Xer

- To older generations, "Xers seem impatient for answers, always demanding information, asking questions, and pursuing multiple lines of enquiry simultaneously. What looks to some [adults] like a lack of attention in Xers is, rather, a rapid-fire style of interacting with information which comes naturally to us as children of the information revolution." (Tulgan, 1995:173)

### Simulation: Xer

- "The skill to be valued in the twenty-first century is not the length of attention span, but the ability to multitask - to do many things well at once.... [and] the ability to process visual information very rapidly." (Rushkoff, 1996:50)



### Multitasking



A characteristic of the 21<sup>st</sup> century everyday life

Debbagh © 2006

### Comfort with Unknown: Boomer

- Discomfort is avoided. If I don't know how, I ask for assistance. "Trying it on your own" activities are not the norm.

### Comfort with Unknown: Xer

- As illustrated by their involvement in extreme sports such as bungee jumping and sky surfing, Generation Xers are fearless. (Brown, Bettina Lankard, 1997)
- Hand-holding and baby steps are not expected and in some cases resented. Challenge is expected more than comfort.

### Learner Control: Boomer

- The traditional instructor-focus is what is expected. The instructor determines what is important to learn and how it should be learned. Consistency and control are maintained with the "tell me, tell me, tell me" approach.

### Learner Control: Xer

- Xers expect a range of options, in terms of what they learn and how they learn it. They require autonomy and flexibility for their own learning. They demand a variety of instructional methods from which they can choose to learn, e.g., videotapes, self-paced modules, interactive CDs.

### Neomillennial Learning Styles

Planning for Neomillennial Learning Styles: Implications for Investments in Technology and Faculty  
Chris Dede, Harvard University, *Educause*, 2005

- Fluency in multiple media--value all types of communication, activities, experiences, rather than working in a single best medium
- Actively seek, collect, and synthesize experiences, rather than absorb a single best source
- Active learning with opportunities for collective reflection
- Non-linear and associated webs of learning rather than linear stories
- Co-design of learning experiences personalized to individual needs and preferences instead of pre-customized

### Neomillennial Learning Styles

Planning for Neomillennial Learning Styles: Implications for Investments in Technology and Faculty  
Chris Dede, Harvard University

- Blended/personalized places (not specialized computer labs)
- Mobile wireless computing
- Avatars and personal agents
- Smart objects
- Virtual worlds
- Augmented reality



### Millennials Least Favorable to Blended—Why?

HIGHER EDUCATION, BLENDED LEARNING AND THE GENERATIONS:  
KNOWLEDGE IS POWER—NO MORE, Dzulban, Moskal, & Hartman (in review)

Perhaps cannot relate to technologies offered to these students. Millennials say:

"I spend more time reading and reviewing without the professor telling me everything there is to know."

"I respect myself more as a self-teacher."

"Learning that takes place in the classroom isn't as important as time studying on your own."

"Online gives me something to do when I'm bored with the professor."

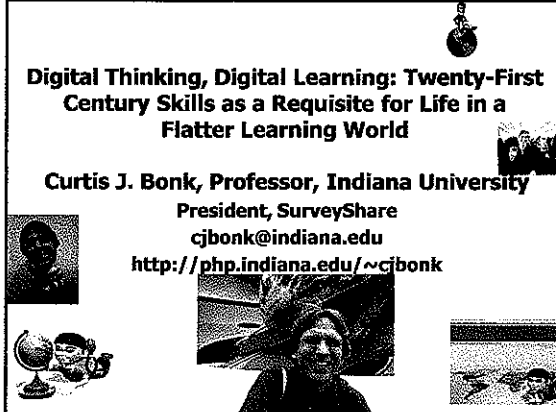
### Future of Instruction

Planning for Neomillennial Learning Styles: Implications for Investments in Technology and Faculty  
Chris Dede, *Harvard University*

- **Learners influence design of content, pedagogy, and assessment based on individual preferences and needs**
- **Knowledge sharing among students as a major source of content**
- **Guided social constructivism and situated learning as major forms of pedagogy**
- **Case-based participatory simulations complement presentational/assimilative instruction**
  - Current = passive, one size fits all!

### Digital Thinking, Digital Learning: Twenty-First Century Skills as a Requisite for Life in a Flatter Learning World

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


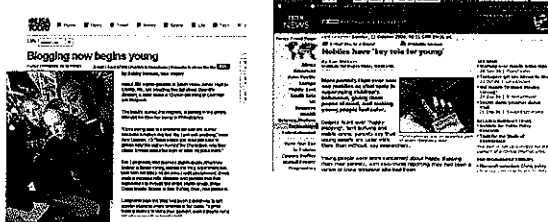


### Singapore and Taipei (Intel Press Release, 2006)

- **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.**



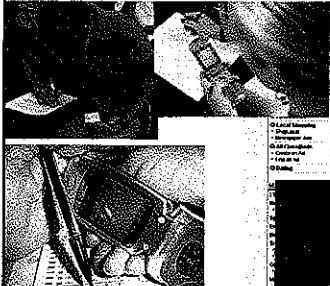
### Telegraph: Flattening the world in 1860

**Eighth-grade students Tayler Bernholtz, left, Amy Lostron 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](http://www.usatoday.com/life/2006-11-14-blogs-education_x.htm)**




**Poll #1:**  
**Should kids be allowed to bring mobile phones, MP3 players (iPods) to school?**



MiamiHerald.com

**Board OK's flip-flops, but iPods are out!**  
 Flip-flops are in for high school kids, out for everyone else. Flip-flops, iPods, cell phones, MP3 players, and more.

**Poll #2:**  
**Raise your hands if you are a digital native (grew up with a computer at home).**



**Digital kids**

**What Students Need to Know: 21<sup>st</sup> Century Skills and ICT literacy;**  
 Susan D. Patrick, President and CEO  
 North American Council for Online Learning

The future will demand people who can express themselves effectively with images, animation, sound, and video, solve real world problems that require processing and analysis of thousands of numbers, evaluate information for accuracy, reliability, and validity; and organize information into valuable knowledge, yet students are not learning these skills in school.

From: The Partnership for 21st Century;  
[www.21stCenturySkills.org](http://www.21stCenturySkills.org)  
 Report: are they really ready to work (2006).  
[http://www.21stcenturyskills.org/documents/FINAL\\_REPORT\\_PDF9-29-06.pdf](http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF9-29-06.pdf)

**What Students Need to Know: 21<sup>st</sup> Century Skills and ICT literacy;**  
 Susan D. Patrick, President and CEO  
 North American Council for Online Learning

- Information and communication skills;
- Thinking and problem-solving skills;
- Interpersonal and self-direction skills;
- Global awareness;
- Financial, economic, and business skills; and
- Civic literacy.

From: The Partnership for 21st Century;  
[www.21stCenturySkills.org](http://www.21stCenturySkills.org)  
 Report: are they really ready to work (2006).  
[http://www.21stcenturyskills.org/documents/FINAL\\_REPORT\\_PDF9-29-06.pdf](http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF9-29-06.pdf)

**Megabits**  
 (p. 59 May/June 2007, Tech Trends)

**"More than 60 percent of educators said that their schools are not putting enough emphasis on media literacy; and 80 percent said that they have to learn media literacy on their own..."**

The results of the CIC Educator Survey, Media Literacy: A Vital and Underserved Need in Schools, can be found online at <http://i.ciconline.org/docs/CICmedialitreport11-2006.pdf> (November, 2006)

**The results of the CIC Educator Survey, Media Literacy: A Vital and Underserved Need in Schools**  
<http://i.ciconline.org/docs/CICmedialitreport11-2006.pdf>

**Table 3: How Educators Learn About Media Literacy in Schools**

Response	Teachers	Library/Media Specialist
On my own	78%	80%
Workshops	56%	78%
Other teachers	58%	43%
District personnel or resources	39%	55%
School library/media specialist	38%	33%
Other organizations	14%	41%

Source: Grunwald Associates

### What is "ICT Literacy"?

(Brown & Dotson, May/June 2007, Tech Trends)

- Define info need
- Collect & manage info from digital envirs
- Interpret into using ICT skills for comparison, analysis, & synthesis
- Evaluate info for authority, bias, & timeliness
- Communicate findings through creative use of ICT tools and resources

### ...using ICT tools, students can:

1. **Define:** Select approp research topic, frame q, identify approp resources.
2. **Access:** Locate and retrieve digital primary resources useful for answering the research question.
3. **Manage:** Organize info, summarize content, report content that answers research question.
4. **Integrate:** Read and interpret info using synthesis, summarization, critical thinking, perspective taking, comparison & contrast, & read and interpret multiple sources.

### ...using ICT tools, students can:

5. **Evaluate:** Make judgments on usability of info, authority of sources, bias, timeliness of the materials.
6. **Create:** Adapt, apply, and design a report with conclusions to the original question.
7. **Communicate:** Design report appropriate for audience and is clearly communicated and understood.

### Ok, Million Dollar Question: What are 21<sup>st</sup> Century Skills?



If you had to give a word or phrase to describe "21<sup>st</sup> Century Skills," what would that word be?

Locate info, synthesize it,  
Decision making,  
Use effectively and ethically,  
Communicate effectively,  
Evaluate products,  
Producers and consumers of visual info,  
Informed critics,  
Sensitive to bias and cultural differences,  
Sets own goals,  
Willing to make mistakes,  
Comparison and contrast skills, inferencing skills,  
Participate in a team, exercise leadership,  
Manage technology for public good

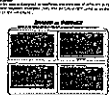
### Digital Literacy (Bonk, June 2, 2007)



- **Digital literacy** is the ability to browse, locate, filter, synthesize across, and eventually use information appearing in multiple formats and in a wide range of sources that can lead to communication of what one discovered as well as the production of still additional information. (Paul Gilster (1997), Digital Literacy.)

## Digital Literacy (Bonk, June 2, 2007)

- Digital literacy is not only technology related knowledge, skills, and competencies, but also the critical and creative thinking skills as well as ability to engage in collaborative teams to find and solve problems in a technologically reliant society or environment.



## 21<sup>st</sup> Century Skills (NCREL, Learning Point Associate, 2003)

**21st Century Skills**

**Digital-Age Literacy**

As society changes, the skills needed to operate the complexities of the 21st-century world—reading, writing, and calculating skills—are considered obsolete. Only a select group has the skills to thrive in the 21st century, developing a broad range of literacy, technological, and critical thinking skills, and the ability to work effectively in teams, technology, and culture as well as gain a thorough understanding of the world.

Digital-Age Literacy includes the following:

- **Basic Literacy:** Language proficiency in English and necessary to learn necessary skills and to develop one's knowledge and potential in the Digital Age.
- **Information Literacy:** Knowledge and understanding of the scientific concepts and procedures in the field of digital literacy and research productivity.
- **Financial Literacy:** The ability to identify economic problems, alternatives, costs, a timeline, examples for consequences of changes in economic conditions and public policy, and to make sound choices.
- **Technological Literacy:** Knowledge about new technology to know it exists, what it does, and how to use it to select specific goals.
- **Global Literacy:** The ability to interpret, use, appreciate, and cross-culture and not just for the sake of being, but to understand, communicate, and learn.
- **Information Literacy:** The ability to evaluate data across a range of sources, including, but not limited to, electronic, and to communicate effectively and responsibly from the data to the public.
- **Global Literacy:** The recognition and understanding of interrelationships among international, regional, state, public and private economic, social, cultural groups, and individuals across the globe.

**Academic Achievement**

Digital-Age Literacy

Basic, National, Primary, and Secondary Literacy

Advanced Literacy

Advanced Literacy

**Academic Achievement**

Advanced Literacy

Advanced Literacy

Advanced Literacy

New programs teach undergraduates how to use the Internet and the online card catalog in search of the best sources  
Chronicle of Higher Education, Andrea Foster, March 9, 2007  
<http://chronicle.com/free/v53/i27/27a03801.htm>

- College students use technology constantly. They text-message friends, compile playlists for their iPods, and are whizzes at updating their MySpace profiles. But when it comes to one kind of work they are required to do in college — namely, academic research — they can be inept. Too often, college officials say, students rely on Google or Wikipedia as sources, as if oblivious to peer-reviewed scholarship.



New programs teach undergraduates how to use the Internet and the online card catalog in search of the best sources  
Chronicle of Higher Education, Andrea Foster, March 9, 2007  
<http://chronicle.com/free/v53/i27/27a03801.htm>

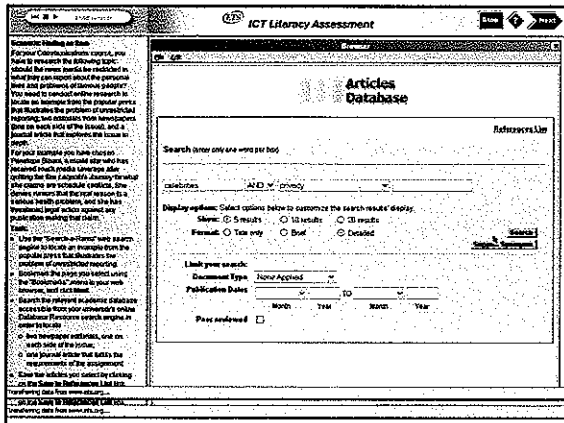
- The explosion of electronic information is fueling students' confusion, librarians say. In 1996 there were 10,000 scholarly databases online; now they exceed 18,000. The Web is teeming with more than 100 million sites, up from 18,000 in 1995. Google and Microsoft recently began archiving books and scholarly journals and making them available via their search engines. And two online, academic-oriented encyclopedias, Citizendium and Scholarpedia, are starting up...

New programs teach undergraduates how to use the Internet and the online card catalog in search of the best sources  
Chronicle of Higher Education, Andrea Foster, March 9, 2007  
<http://chronicle.com/free/v53/i27/27a03801.htm>

- Among the most well known is the ICT Literacy Assessment, which was developed and is administered by the Educational Testing Service, a nonprofit group based in Princeton, N.J. "ICT" stands for "information and communication technology." The 75-minute test, offered at two levels, measures students' ability in seven areas, including organizing, evaluating, and communicating with electronic data.

The screenshot shows the ICT Literacy Assessment interface. It features a grid of sections: 'Advanced', 'Efficiency & Effectively', 'Communicate', 'Context', 'Audience & Genre', 'Long Task', and 'Core Level'. Each section contains text and interactive elements.





**Connecting the Digital Dots: Literacy of the 21st Century**  
 Barbara R. Jones-Kavaller and Suzanne L. Flannigan  
 Educause Quarterly (2006), 29(2)

**“The greatest challenge is moving beyond the glitz and pizzazz of the flashy technology to teach true literacy in this new milieu. Using the same skills used for centuries—analysis, synthesis, and evaluation—we must look at digital literacy as another realm within which to apply elements of critical thinking.”**

**Now for the big questions...!!!**  
**99 Second Reflection!!! Jot down 3 things you learned.**

**Now for 2 Minutes: Share your ideas of digital literacy with someone next to you and agree on three things maximum per category.**

**Let's Think Outside the Box!**  
**For 2 minutes share your ideas with another pair and agree on 3 things/category.**

**Stop and Share for 6 minutes: Share at your table!**

## Global Digital Literacy is Vital to the Progress of Everyone!!!

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



## Time Not Wasted: Digital Scholarship in the Web 2.0

**Curt Bonk**  
 Indiana University  
[cjbonk@indiana.edu](mailto:cjbonk@indiana.edu)  
<http://mypage.iu.edu/~cjbonk/>



With help from:  
 George Siemens  
 University of Manitoba  
[gsiemens@elearnspace.org](mailto:gsiemens@elearnspace.org)



## What is the Present Climate of Digital Scholarship?

**Someone**

**Give**

**Me**

**A**

**Vowel**

## The Climate of Digital Scholarship

**A = Appreciation**

**E = Expectations**

**I = Interactivity**

**O = Opportunities**

**U = Understanding**

## Opening Statement (Bonk, 2008)

Bryan Alexander. "Web 2.0: A New Wave of Innovation for Teaching and Learning" *EDUCAUSE Review*, 41, no. 2 (March/April 2006): 32-44.  
<http://www.educause.edu/apps/er/erm06/erm0621.asp>

**Per Bryan Alexander, there are many powerful implications already appearing in different educational sectors that are directly linked to Web 2.0 technologies. Actual projects, practices, and conceptual implications trump problems in labeling.**

## Opening Statement

(Malcom Brown. "Mashing Up the Once and Future CMS," *EDUCAUSE Review* 42, no. 2 (March/April 2007): 8-9,  
<http://www.educause.edu/apps/er/erm07/erm0725.asp> )

**"The Web 1.0 looks uncannily like the teaching paradigm, whereas the Web 2.0 resembles the learning paradigm" (p. 9). Authority, control, publishing, users observing Web sites, and "they, the media," have given way to "collective decision making," cooperation, participation, users adding value and co-creating content, and "we, the media" (p. 8).**

**Definition of Web 2.0**

(Stephen Downes. "E-learning 2.0," *eLearn Magazine* (2006): para. 1-2, <http://www.eleammag.org/subpage.cfm?section=articles&article=29-1>)

- **Stephen Downes and others say such things enable writing to the Web as much as reading from it. i.e., the Read-Write Web. Humans can now create, remix, share/distribute, comment on, and tinker with information and knowledge in highly efficient, connected, and personalized ways.**

**Definition of Web 2.0**

(Bonk, 2008)

**As Downes noted, learners no longer just passively read books or listen to a TV or radio program. In this age, they create their own wikibooks; they produce their news with CurrentTV; and they generate their own radio programs with syndicated podcasts.**

**Definition of Web 2.0**

(Bonk, 2008)

**Learners also post comments about the books, news, and podcasts of others in their personal blogs or online discussion groups. Today, you may discuss a new book with others who have also read it. And those others come from cities, villages, and regions of the world that you may never visit.**

**Opening Statement**

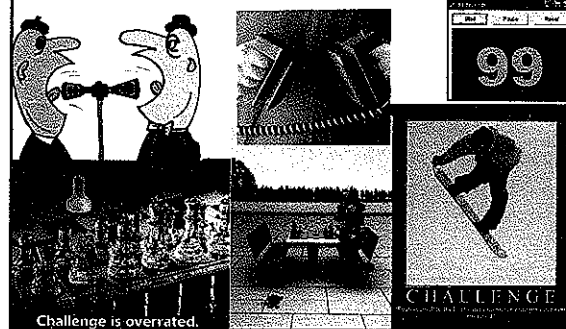
Bryan Alexander. "Web 2.0: A New Wave of Innovation for Teaching and Learning?" *EDUCAUSE Review*, 41, no. 2 (March/April 2006): 32-44, <http://www.educause.edu/apps/er/erm06/erm0621.asp>

- **Web 1.0 pushing up pages of content**
- **Web 1.0 looks uncannily like the teaching paradigm**
- **Web 2.0 content can be saved, shared, copied, quoted, and repurposed**
- **Web 2.0 is personally empowering and gives identity**

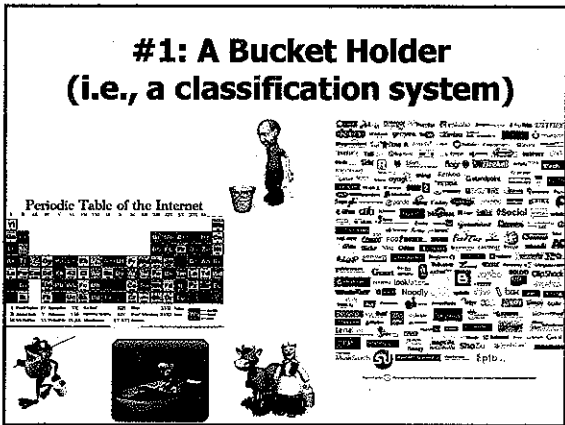
**What Good is the Web 2.0?  
10 reasons!**



**The Thiagi Challenge**

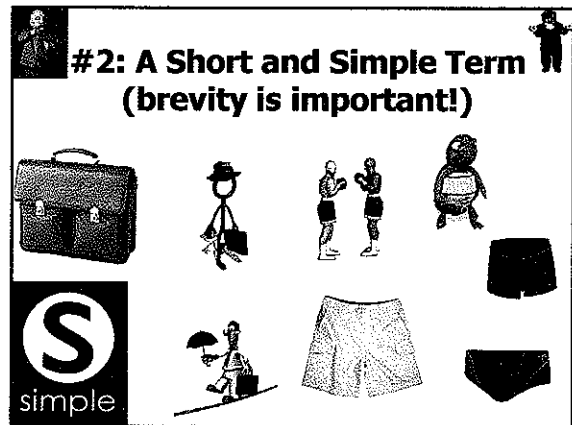


### #1: A Bucket Holder (i.e., a classification system)



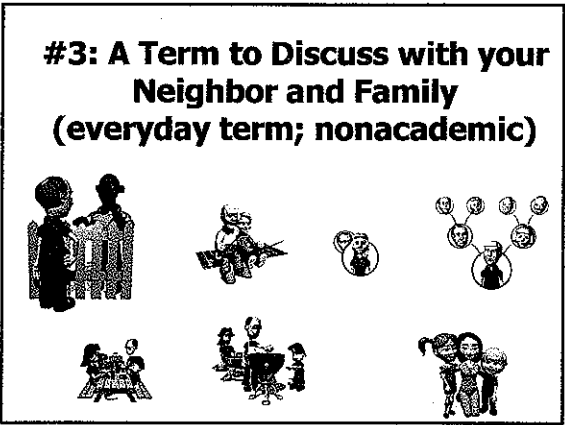
Periodic Table of the Internet

### #2: A Short and Simple Term (brevity is important!)

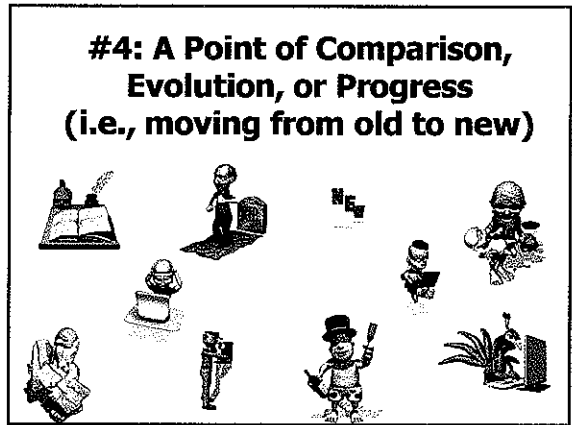


S  
simple

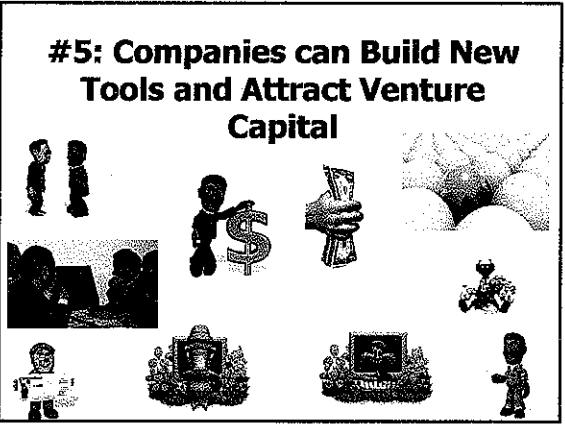
### #3: A Term to Discuss with your Neighbor and Family (everyday term; nonacademic)



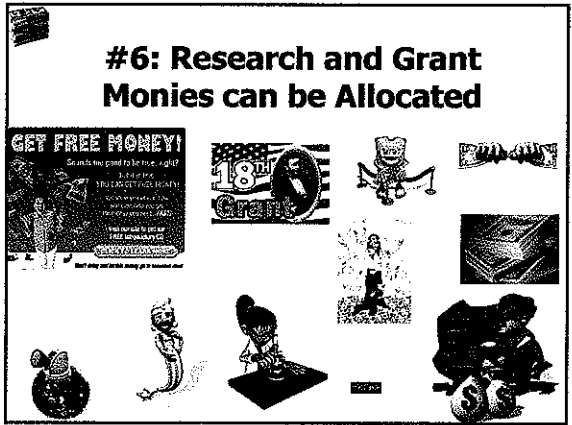
### #4: A Point of Comparison, Evolution, or Progress (i.e., moving from old to new)



### #5: Companies can Build New Tools and Attract Venture Capital



### #6: Research and Grant Monies can be Allocated



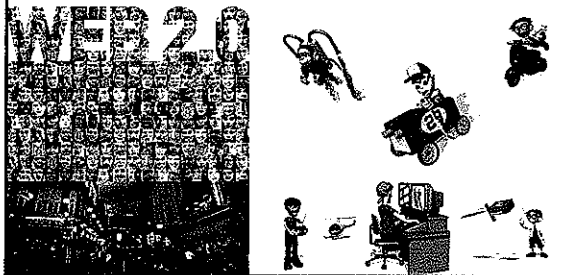
**#7: Limits Theoretical Debates  
(just a tool)**



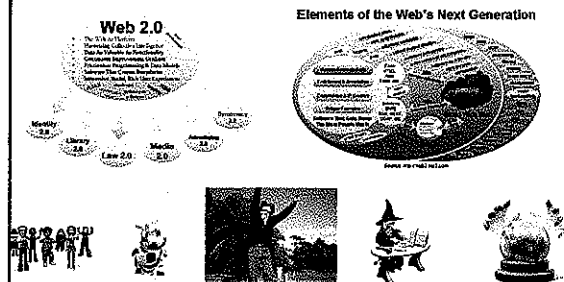
**#8: Eclectic (anyone can now learn, the world is open)**



**#9: An Announcement of Personal Ownership, Control, Voice, and Connections Over Life and Learning**



**#10: A Jumping Off Point for Future Visions**



**Summary Statement  
(Bonk, 2008)**

I think a term like the Web 2.0 is useful since it is short. It serves to categorize thousands of new software tools and applications pouring down on us. It is not academic. It focuses us on a thing--a technology--the Web, which enables us in education to suggest varied pedagogical approaches with it. As a result, the educators who debate theories, cannot debate it.



**Part II. Examples of Digital Scholarship**



<http://newsinfo.iu.edu/news/page/normal/7387.html>  
 Courtesy of Indiana University, January 31, 2008  
 Institute for Digital Arts and Humanities (IDAH)  
 The work of 3D virtual reality artist Margaret Dolinsky represents just one example of the kind of projects that will be furthered by the new Institute for Digital Arts and Humanities.

**What Generation are You?**  
**Penelope Trunk, Blog, Brazen Careerlist:**  
**Advice at the Intersection of Work and Life**

- Do you have your own web page? (1 point)
- Do you IM your friends? (1 point)
- Do you text your friends? (2 points)
- Do you watch videos on YouTube? (1 point)
- Create or remix videos for YouTube (2 pts)
- Do you communicate with friends on Facebook, LinkedIn, or MySpace? (2 points)
- Do you take photos with your phone? (1 pt)
- Do you share photos from your phone with your friends? (2 pts)

**Are you a digital native?**  
 (Check the applications you have used)

- Word processing
- E-mail
- Cut and paste
- URL
- Navigate a website
- Download files from a website
- Google (or other search engine)
- Advanced or Image Search in Google
- Create and maintain a blog
- Build your own website

**Are you a digital scholar?**

- Blogged on your research?
- Podcasted on book or article you wrote?
- Videostreamed a lecture?
- Written or edited an e-book?
- Created a wiki for your research team?
- Created open educational course resources?
- Created a YouTube or SciVee video?
- Created a vodcast or a blog?
- Attended on online research conference?
- Presented in an online forum or conference?

**Digital Scholarship**  
 (per George Siemens, 2008)

**"Scholarship is concerned, at least partly, with the process of creating and disseminating information (ideas and concepts). When the core elements of this process – namely creation and dissemination – change, we are required to rethink scholarship"**

**Access – alternatives to lock-down scholarship**  
 (George Siemens, 2008)

**Asserting identity, reputation**  
 (George Siemens, 2008)

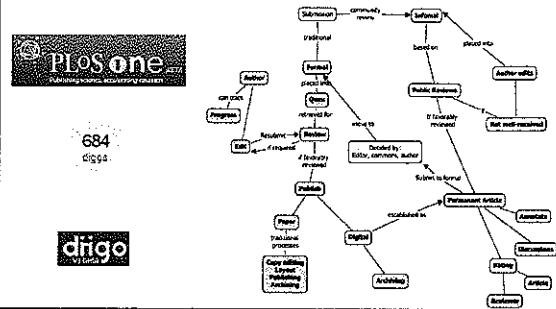
### Digital Scholarship

(George Siemens, 2008)

"We are confronted with the need to rethink authority, peer review, reputation, and validation. The ability for anyone to create and anyone to comment raises the importance of effective review as a means of making sense of this newfound abundance."

### Rethinking scholarship as participation

(George Siemens, 2008)



### Is peer review in decline?

(George Siemens, 2008)

"The internet has enhanced scientific communication in many ways, and there is considerable excitement around new institutions for disseminating research. A more sobering thought, however, is that new technologies can also be disruptive."



### University publishing in a digital age

(George Siemens, 2008)

"There is a seeming limitless range of opportunities for a faculty member to distribute his or her work, from setting up a web page or blog, to posting an article to a working paper website or institutional , to including it in a peer-reviewed journal or book...nearly all intellectual effort results in some form of 'publishing.'"

### New Metrics (Bonk, 2008)

(Michael Jensen, The New Metrics of Scholarly Activity, June 15, 2007, Chronicle of Higher Education, "Authority 3.0" <http://chronicle.com/free/v53/i41/41b00601.htm> )

Ten years ago, most of the action in e-learning was centered around the posting of content. One might take a traditional course and shovel it to the Internet. According to Michael Jensen, during the heyday of the Web 1.0, roughly 1992 to 2002, content was king, in part, because there was an assumed scarcity of it.

### New Metrics (Bonk, 2008)

(Michael Jensen, The New Metrics of Scholarly Activity, June 15, 2007, Chronicle of Higher Education, "Authority 3.0" <http://chronicle.com/free/v53/i41/41b00601.htm> )

Authorities creating and endorsing the quality of such content were vital. And the content was placed in course management systems in higher education and learning management or content management systems if in corporate training.

**New Metrics (Bonk, 2008)**  
 (Michael Jensen, The New Metrics of Scholarly Activity, June 15, 2007, Chronicle of Higher Education, "Authority 3.0" <http://chronicle.com/free/v53/i41/41b00601.htm> )

Today, instead of information transmission and consumption models where content is placed by authority figures into a system or platform, learners can find, design, mix and remix, repurpose, and select content to share. There is no more information scarcity. Instead, the Web 2.0 harnesses the collective intelligence of individuals to situate us in a time of endless information abundance. It is the participatory learning age.

**New Metrics**  
 (Michael Jensen, The New Metrics of Scholarly Activity, June 15, 2007, Chronicle of Higher Education, "Authority 3.0")

- Prestige of commentators.
- Prestige of a being quoted in other documents.
- Prestige of prereviewers.
- Raw links to the document.
- Length of time a document has existed.
- Inclusion of the document in "best of," syllabi, indexes, and other distillations.
- Terms used, tags assigned to it.

**New Metrics**  
 (Michael Jensen, The New Metrics of Scholarly Activity, June 15, 2007, Chronicle of Higher Education, "Authority 3.0")

- Nature of the language in comments: positive, negative, expanded, reinterpreted.
- Obvious attention: discussion in blogs, comments, podcasts, etc.
- Reference network: significance rating of all other texts the author has touched.
- Clicks, votes, tags, views, comments, scores, ratings, downloads, references.

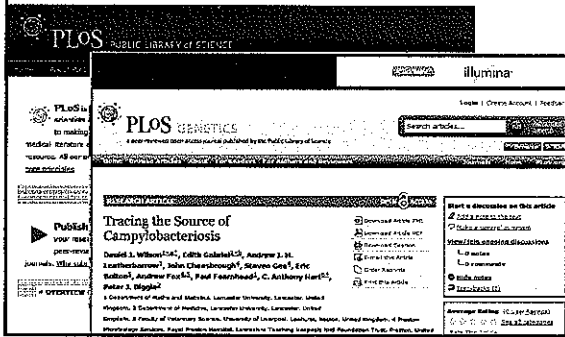
**30 Digital Scholarship Options**

**#1. Homepages, Online Portals, and Other Web Resources (e.g., Nursing, Muscular System, Digital Storytelling, etc.)**

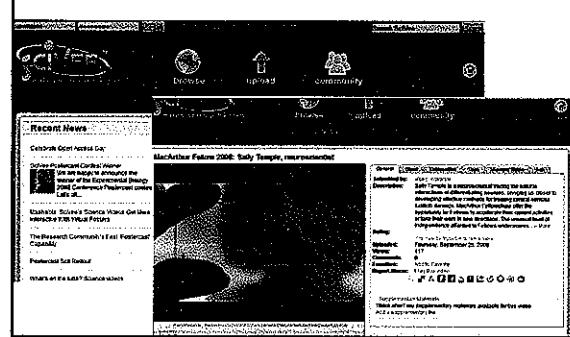
**#2. Making your Content Free and Open Open Educational Resources (OERs): Cute Kitten or Transformation? (per George Siemens)**



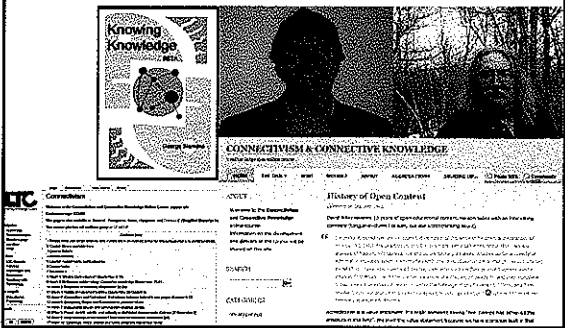
### #3. Publishing in Open Access Journals (e.g., PLOS)



### #4. Adding Video to Your Publications (e.g., SciVee)



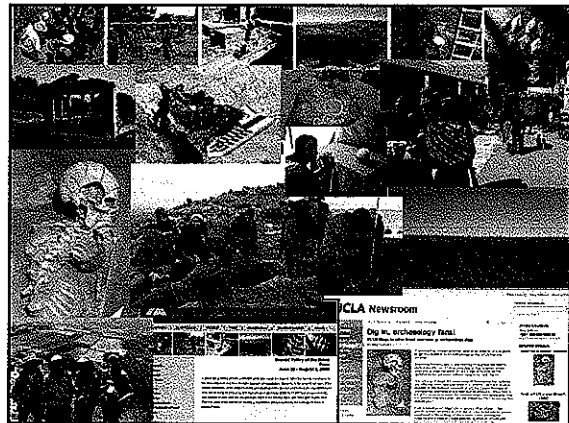
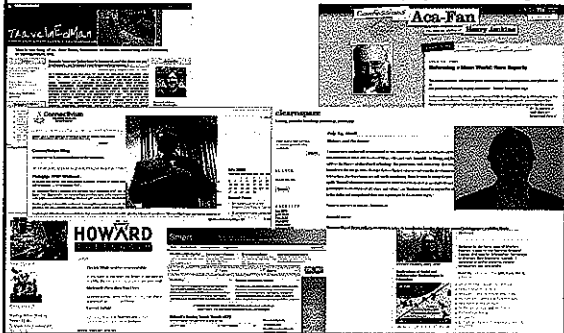
### #5. Free and Open Courses (Connectivism from George Siemens and Stephen Downes, 24 enrolled, 2,000+ sitting in)



### #6. Open Degrees? (David Wiley) <http://opencontent.org/blog/archives/580>

"I wonder if, somehow, we've stumbled into part of the answer for open accreditation.... Maybe...we should be hacking degrees. Anyone up for a completely informal, completely open, homemade certificate-style diploma? A handful of courses offered by all of us - take intro open ed from me, connectivism from George and Stephen, media studies from Brian, and then complete three cumulative edupunk...Why not? I want my homemade edupunk diploma!!!"

### #7. Personal Blog (e.g., <http://traveledman.blogspot.com/>)



### #9. Research Using Google Earth, Dani Cooper, ABC Science Online, Scholar (David Thomas from Australia) Finds New Archaeological Sites by Googling, July 21, 2008. Finding Sites Virtually. Using the free Internet resource, Google Earth, a scholar found up to 450 possible archaeological sites in southern Afghanistan.

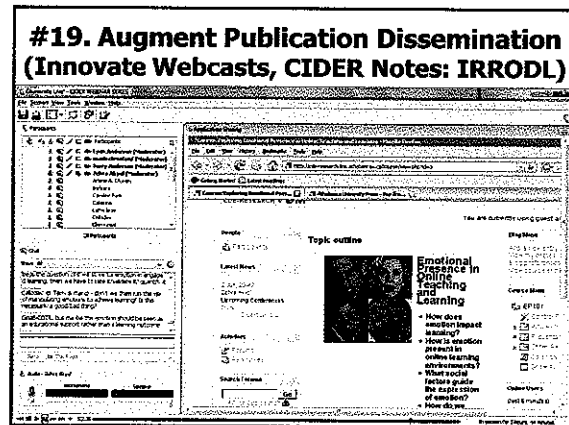
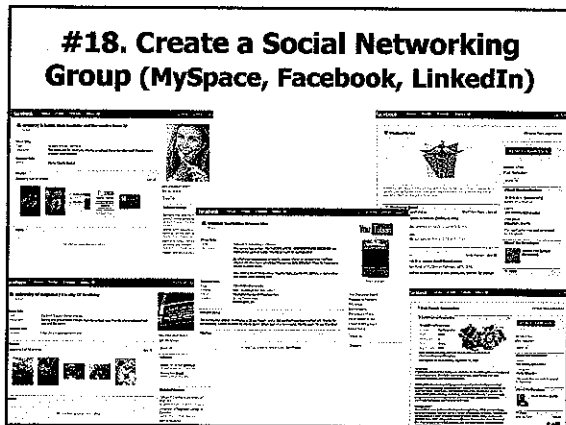
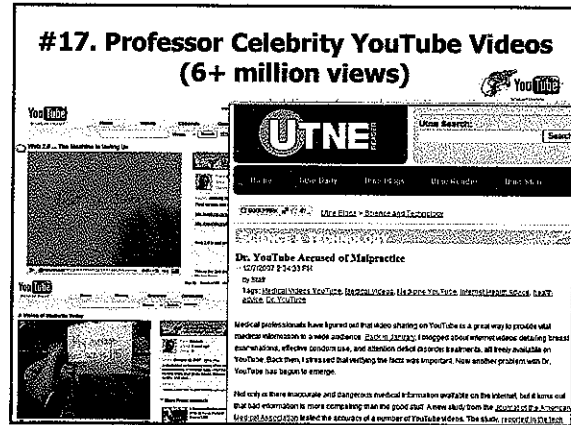
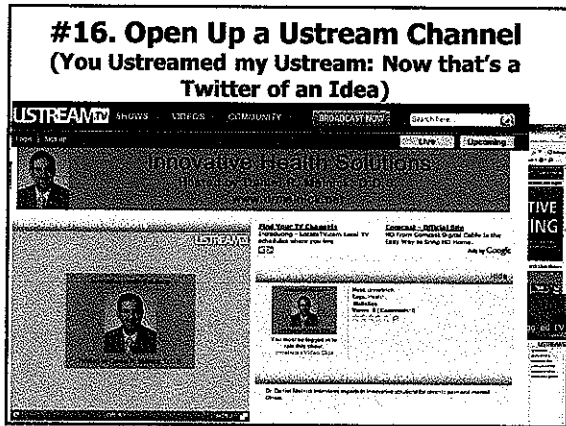
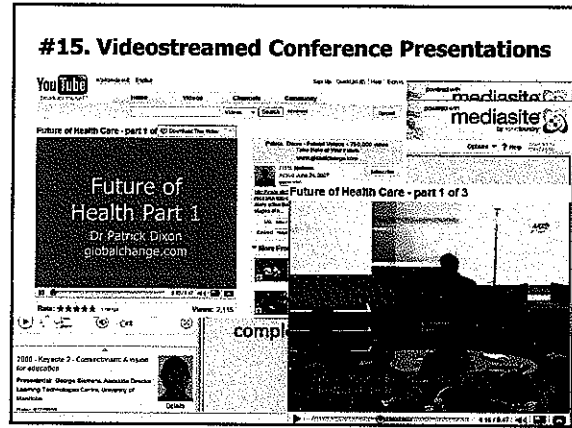
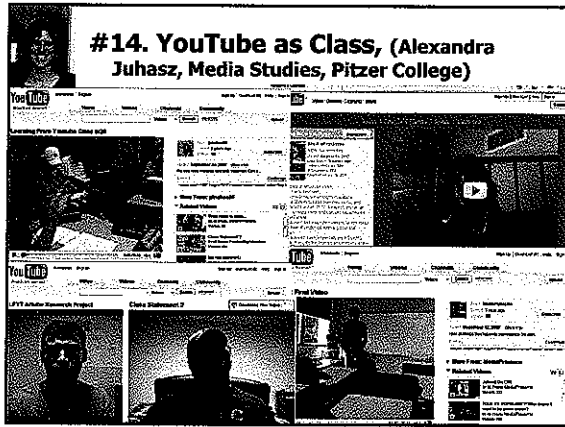
### #10. Research Team Wiki

### #11. Podcast Research Reviews

### #12. Book Author Podcasts

### #13. Videostreamed Lectures (Professor Marian Diamond, Biology)

### THE PERIODIC TABLE OF VIDEOS



### #20: Attend Online Conferences (2nd Int'l Online Medical Conference, March 14-15, 2009)

The screenshot shows a web-based conference interface. At the top, there's a header with the title. Below it, there are several panels. On the left, there's a sidebar with navigation options. The main area displays a presentation slide with text and images. Below the slide, there's a video player showing a person speaking. The interface is clean and professional, typical of a medical conference website.

### #21. Create Wikibooks with Int'l Collaboration (Web 2.0 and Emerging Learning Technologies (The WELT))

The screenshot shows a Wikibooks page. The title is at the top. Below it, there's a summary of the book. The page is filled with text, organized into sections. There are also some images and a table of contents. The layout is typical of a Wikipedia-style collaborative encyclopedia.

### Cross-Institutional Wikibook Research on My Own Classes

Web 2.0 and Emerging Learning Technologies  
From Wikibooks, the open content textbooks collection

This screenshot is similar to the one in #21, showing a Wikibooks page. It highlights the 'Table of Contents' section, which lists various chapters and sections of the book. The page is well-structured and easy to navigate.

### #22. Start or Join Collaborative Book Writing and Publishing (e.g., WeBook) <http://www.webook.com/>

The screenshot shows the WeBook website. The header includes the WeBook logo and navigation links. The main content area features a 'Project Leader' section with a description of the project. There's also a 'Start Reading' section with a book cover image. The website is designed to be user-friendly and collaborative.

### WeBook (Elliott Masie, September 2008) <http://www.webook.com/>

- No charge to participate (including author, feedback givers, collaborators, readers, etc.).
- Anyone can launch a book idea by setting up a project, title, overview, etc.
- Might collaborate in teams on a campus.
- 50-50 share in profits
- Royalties shared.
- Can be online or printed book or both.

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

The screenshot shows the FreeBooks4Doctors! website. The header includes the website name and a tagline. The main content area features a list of books for sale, with details about each book, including the title, author, and price. There's also a section for 'Recent entries'.

### #24. Free E-Book and Print Book

(wiki, HTML, PDF, audiobook, etc., Benkler, Zittrain, Cory Doctorow)

**Disaster Response**  
Principles of Preparation and Coordination

Chapter 5: INTER-AGENCY COMMUNICATIONS

Principles of Preparation and Coordination

Adapted communication is a recurring challenge in disaster response. Coordination of actions (often at multiple scales, geographically) is essential. In disaster, communication structures are often hard to negotiate. They are often difficult, and the greatest challenge often lies in the organization of the response.

### Brand New E-Book and Print book

#### Opening Up Education

New Edited Book from MIT (free PDF, sample chapters, and hardcopy)

OUE Part 2: John Seely Brown, Toru Iyama & Vijay Kumar

From OUEBOOK  
Edited September 2008  
New! PDF

View the book online and download the PDF for free. This book is available for free on the Open Up Education website.

More From OUEBOOK

Related Videos

- OUE Part 1: John Seely Brown, Toru Iyama & Vijay Kumar
- OUE Part 3: John Seely Brown, Toru Iyama & Vijay Kumar
- John Seely Brown: Opening Up Education
- Opening Up Education: A New Model for Learning
- Opening Up Education: A New Model for Learning
- Opening Up Education: A New Model for Learning

### Cluster Maps (see where people are downloading your free content from)

Most of all, these red dots on my Cluster Map represent folks who are on some level passionate about the same topic that I am. Many folks find out how the tools and technologies of this new read-write web are going to affect education.

**Networks of Learning**  
Should schools promote online networking?  
By 197 Professor

### #25. Write Textbooks for those in Less Developed Countries

Global Text Project: <http://globaltext.org/>

GLOBAL TEXT PROJECT

VOLUNTEER TODAY

Discover the most powerful solutions you can use to change the world - online!

The project is an open source textbook project that will help to improve the quality of education in less developed countries. It is a project of the University of California, Berkeley, and is supported by the National Science Foundation.

More information on the project is available at <http://globaltext.org/>

### #26. Self-Publishing (print-on-demand)

BookSurge (owned by Amazon), Lulu

Death to Diabetes  
By Wayne McCulley

the BELLY FAT  
How an ex-diabetic best diabetes, losing a third of his weight, level over 1000

Shoppers Guide  
How to Buy Smart

Wayne McCulley, M.S.

### More Self-Publishing (Lulu and AuthorHouse)

authorhouse.com

Managed Health Care, A System Goes Wrong

Samuel J. Wen

Format: Paperback (50) ISBN: 978158220372

More Large Content Storage

Today's HMOs come into a great deal of criticism, yet few people

### #27. Post Articles to Scribd

The screenshot shows the Scribd website interface. At the top, there's a navigation bar with links for Home, Explore, Postings, Upload, Tools & Extras, and Publishers. Below this, there are sections for Popular Documents, Recently Added Documents, and Recent Members. The interface is clean and organized, with a search bar and various user options.

### #28. Book reviews and critiques (e.g., Amazon, LibraryThing, etc.)

The screenshot shows the LibraryThing website interface. The main content is a book page for 'Educational Programs for Healthcare - Alzheimer's Disease'. It features a table with columns for Members, Reviews, Popularity, Average rating, and Covers. Below the table, there's a 'Buy, borrow, or view' section with various options like 'Add to your library', 'Members', 'Recently added by', 'Details', 'Covers', 'Member reviews', and 'Recommendations'. The interface is detailed and provides a lot of information about the book.

### #29. University Promoted e-Scholarship (e.g., California, Indiana)

The screenshot shows a university website page for a scholarship program. The page is filled with text, links, and images, providing detailed information about the scholarship. It includes sections for 'About this page', 'Scholarship Publishing Program', and 'Scholarship Details'. The layout is complex and contains a lot of text.

### #30. Things you are not even aware of; e.g., Libraries printing copies of your books (n Demand Books; 5-7 minutes/book; \$10/book, any digitalized out-of-copyright book); Sept. 17, 2008

<http://www.ns.umich.edu/htdocs/releases/story.php?id=6735>  
 Espresso Book Machine, U-M at forefront of new era in publishing  
 Shapiro Library book machine prints books within minutes

The screenshot shows a news service page titled 'OrDemandBooks'. The page contains text about a new service where libraries can print books on demand. Below the text, there's a photograph of a person operating a book machine. The machine is a large, industrial-looking device with a control panel and a book tray.

## What Else Can You Do?

- Second Life readings of your book.
- Twitter uploads of content.
- Sharing short bursts of your book with mobile technologies.
- Subtitle videos with Dotsub for other languages.
- Creating research communities in Diigo, Ning, Yahoo! Groups, etc.

## Closing Reflection

(George Siemens)

"Emerging scholarship trends enable new opportunities for educators to share ideas, connect with others, and build on the work of others. Critical challenge remains:

How to balance the value of traditional scholarship with the opportunities of new forms of interaction and dissemination."

### Digital Reflections

(Bonk, 2008)

With one project, a world of current scholarship and practice is at one's fingertips. Someone can find both the latest research on a topic as well as how to implement it or put it into practice. And that was today. What announcements will come tomorrow or overnight while I sleep?


### Think About It!

- What if others take the lead of folks like Anderson, Doctorow, Benkler, and Zittrain and place their works somewhere on the Web of Learning for unlimited downloading? What happens to those in the throes of the tenure process of a university when they give away their ideas? Will writing a book, especially a downloadable one, still be a highly valued activity? What will be the quality indices?

### Ideas for Resistant, Reluctant, Reticent, and Hesitant Instructors

- Examples
- Success stories
- Faculty dept discussions
- Recognitions
- Showcases
- Make resources available online
- Make tech integration part of the culture
  - Laptop programs, iPods, frameworks, sharing, best practices, brown bag lunches, books, online forums, newsletters, mentoring.


HELP!!!



### The Climate of Digital Scholarship

**A = Appreciation**  
**E = Expectations**  
**I = Interactivity**  
**O = Opportunities**  
**U = Understanding**

### Questions and Comments

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

