Web 2.0 for learning discovery

Joan Lippincott
Coalition for Networked Information
Web 2.0 for Learning Discovery

Net Gen Students, Net Gen Scientists

Joan K. Lippincott
Coalition for Networked Information

IATUL Conference
24 April, 2008
Coalition for Networked Information (CNI)

- Founded in 1990 by ARL and EDUCAUSE
- Mission: accelerate progress in networked information related to research and education
- 200+ member institutions
- Executive Director Clifford Lynch
- www.cni.org
In a world where...

Researchers at U. Liverpool create a publicly available website of 3D organic chemistry animations
A researcher at U. Glasgow creates a species search engine yielding many types of data.
Teaching in virtual worlds

- Educators create experiences and events in virtual worlds like Second Life
Are we preparing our students for 20th century scientific work or
21st century scientific work?

What Does a Net Gen Student Look Like? This?

http://www.flickr.com/photos/geopollock/25509844/
Or this?

Constance Steinkuehler

topic of cognition
MMOG research
2005 dissertation
online learning
social interaction
curriculum vitae.html
curriculum vitae.pdf
courses taught
games+learning+society
GLS conference
favorite games
funny pictures
favorite links
contact info
participate in research
Should we reorient libraries’

- Content
- Tools
- Services
- Environments
To be more responsive to Net Gen students?
Does this worry you?

Thinking of your information needs and lifestyle, which fits perfectly with your lifestyle?

- 64% Search engines
- 30% Online library
- 24% Library

From OCLC College Students’ Perceptions of Libraries and Information Resources
Would these fit their lifestyle?
Net Gen Students

- Born 1982-1991
- Grew up with computers and other media at home and in school from earliest ages
Other Names...

- Millennials
- Digital Natives
- Gen Y
- Next Gen
- DotNets (Pew Internet & American Life)
Future “screenager”

http://www.flickr.com/photos/robotbuddy/484030334/
Characteristics of Net Gen Students

- Always connected, multi-tasking
- Social, experiential learners
- Visual
- Producers as well as consumers
Characteristics of Deeper Learning

“Deeper Learning”
- Social, active
- Engaging
- Student-owned

Colleen Carmean & Jeremy Haefner.
Students are Connected

- 98.4% of respondents own a computer
  - 73.7% own a laptop
  - 52.4% never bring their laptop to class
- Respondents spend an average of 18 hours/wk using an electronic device
  - Engineering and business students have highest use
- 81.6% use social networking sites like Facebook and MySpace

The ECAR Study of Undergraduate Students and Information Technology, 2007
18-24-year-olds would rather give up television or radio before giving up the Internet

All other age groups would jettison the Internet first if forced to choose between TV, radio, and Internet

Zogby Int’l. 1/31/07
“Social networking sites like The Facebook are quickly blurring the line between online and real-world interactions. While most adults still separate their virtual existence from their real-world lives, college kids are increasingly living in both worlds at once.”

Erika Lewis, Carleton College student from her Podcast script for a class "We Media: The Personal Media Revolution"
http://www.people.carleton.edu/~lewiser/PodcastScript.htm
“They’re much more sophisticated about using applications (than past students). They’ve put together QuickTime movies in the sixth grade or something.”

Lawrence Levine, CIO, Harvard quoted in CHE 9/22/06
A teaching assistant says, “Many of the students already possess technological skills far beyond those of typical teenagers. But such students are sometimes difficult to work with because they say, ‘I know how to build a Web site … but that’s not what we’re looking for. We’re interested in instilling in students the art of a flow of argument.’”

Peter Monaghan, CHE, July 14, 2006
Digital Media and Learning

The MacArthur Foundation launched its five-year, $50 million digital media and learning initiative in 2006 to help determine how digital technologies are changing the way young people learn, play, socialize, and participate in civic life. Answers are critical to developing educational and other social institutions that can meet the needs of this and future generations. The initiative is both marshaling what is already known about the field and seeding innovation for

The Latest News
Philanthropy and Virtual Worlds
Save the date (22 June, 9am PST) for an historic conversation on the role of philanthropy in virtual worlds featuring MacArthur Foundation President Jonathan Fanton and Second Life CEO Philip Rosedale. Learn more.
Selected core skills

- Collective Intelligence - the ability to pool knowledge and compare notes with others toward a common goal
- Judgment - the ability to evaluate the reliability and credibility of different information resources
- Networking - the ability to search for, synthesize, and disseminate information
Henry Jenkins - MIT

Among his core skills:

- Simulation - the ability to interpret and construct dynamic models of real world processes
- Appropriation - the ability to meaningfully sample and remix media content
- Multitasking - the ability to scan one’s environment and shift focus as needed to salient details
Three Trends and Implications for Supporting Net Gen Student Learning

- Students as content producers
- Mobile students, mobile devices
- Development of 3-D visualization environments
- …and some thoughts on information literacy
Student Content Producers

FROM

- Consumers
- Text-oriented
- Individual
- Invisible

TO

- Producers
- Multimedia
- Social and participatory
- Visible
Student-created heart condition video - U. Alberta

http://www.youtube.com/watch?v=GVxJJ2DBPiQ
MASHUP CONTEST: copyright in action
EXPLORING FILM PARODY

Sponsored by the Penn Library, the Cinema Studies Program, and the Penn Reading Project/College Houses and Academic Services, this contest continues the theme of this year’s Penn Reading Project book, Lawrence Lessig’s Free Culture, by encouraging students to think about how parody is protected under current copyright law.

Contest Details
Create a trailer that parodies a well-known film. The use of both existing clips and original footage is acceptable.

Length: Run time not to exceed 4 minutes

Format: Submissions on DVD

Eligibility: Currently enrolled Penn undergraduate and graduate students (individuals or teams)

Submission Information: Entries are due by 9 pm on March 12th, 2007. Discs, and accompanying application form (one form per participant for team projects), should be brought to the Vitale Digital Media Lab in the Wexler Information Commons, 1st floor west, Van Pelt Library. [Click here for application form.]

Judging: Trailers will be reviewed by members of the Penn Faculty (Peter Decherney, Katherine Sender, and Michael Solomon) and prizes will be awarded to those films that demonstrate the best use of parody.

Prizes:
10 April 2007 at 6pm
Class of 55 Room, 2nd floor, Van Pelt-Dietrich Library Center
A Student's Guide to the Medical Literature

Welcome! This site has been designed especially for medical students, but it can be used by anyone who wants a guide to the medical literature. If you are having trouble researching a medical question, or want an easy guide to critical appraisal of journal articles, this is the site for you.

Some of the features of this site are:

- A Tutorial outlining a simple 4-step approach to reading medical literature
- Search Strategies with links to the best web sites
- An interactive Glossary with over 150 statistical terms hyperlinked to the text
- Calculators for finding relevant outcome measures from a study
- Student's Guide Pocket Version to use on your Palm or Pocket PC
Doreva Belfiore

Linguists such as Deborah Tannen and Robin Lakoff have sought to examine the conversational styles and practices between men and women in order to formulate theories of gender-specific discourse. In my final paper, I plan to take the theories of such linguists and apply them specifically to Internet venues (chatrooms, discussion boards, and Yahoo groups) to highlight differences in male and female user communication strategies. It is my theory that while online, female members employ more verbal deference mechanisms and more consistently defend the use of "netiquette" than male members of similar age and regional background in order to preserve group unity and cohesiveness while discouraging group divisiveness. From the theoretical readings assigned in class, I plan to cite from Republic.com by Cass Sunstein, and possibly also the 2 articles by Henry Jenkins, in addition to the other bibliographic citations.

*Adapting the Internet: Comments From a Women-Only Electronic Forum - Debra Winter and Chuck Huff*

PDF/full text available

Winter and Huff's study focuses on a 1996 survey of a women's only online bulletin board for computer scientists called SYSTERS. Although the study is 9 years old, it still brings voice to women who were previously marginalized as gender minorities in their field of work/study. The authors discuss the issue of same-gender boards being both "havens" and "ghettos" for women online, and also provide some support for Cass Sunstein's theory that the internet allows for the consolidation of like opinions - both positive and negative - in the case of research forums and online social groups and communities. Based on their study,
Georgia Tech
Practice Presentation Room
Tilburg U. (Netherlands)
Montesquieu Learning Centre
Cornell’s Mann Library
Mobile students, mobile devices

**FROM**
- Place-based
- Text-based
- Data access
- Owned

**TO**
- Mobile
- Text, audio, video
- Data collection
- Loaned
Mobile Library Users

- Distance education students
- Blended learning students
- Learners in the field
- Learners using mobile devices in the classroom
- Learners using mobile devices for learning activities outside of the classroom
Mobile devices

- Mobile phones/smart phones
- PDAs
- Clickers/Personal Response Systems
- IPods, MP3 players
- Laptops/notebook computers
- The next device… Google phone
Students use their devices

- Harvard Medical School survey of students 2007
  - 52% own a PDA
  - Application with most use: reference info with 26% of respondents; only 6% subscribe to podcasts
  - As reported in “Waiting on the Wave,” Campus Technology, March 2007
    http://campustechnology.com/articles/452441
U. Alberta Library’s PDA Zone

This site provides access to resources and library services that are available for users of handheld devices known as Personal Digital Assistants (PDAs).

**PDA Services**
- PDA Infrared (IR) Beaming Station
- Library News (PDA version)
- Upcoming Instruction Sessions
- Make Appointment for Consultation
- UCalgary PDA / Handheld User Listserv
- Wireless PDA Support

**PDA Library Resources**
- MDC Mobile - MDC's information service for PDAs
- netLibrary
- PDA Bibliographies
- PDA Books on Expansion / Multimedia Cards
- PEPID
- PICOmaker
- Access Medicine

**PDA Guides**
Saturday Morning Physics

DESCRIPTION

Physics is a fundamental science and provides the foundations for solving both cosmic mysteries and practical problems. In 1995, the University of Michigan Department of Physics began sharing some of the latest ideas in the field with the public, in the Saturday Morning Physics lecture series. Designed for general audiences, the lectures are an opportunity for local physicists to discuss their work in easy-to-understand, non-technical terms. The multimedia presentations include hands-on demonstrations of the principles discussed, along with slides, videos, and computer simulations.

<table>
<thead>
<tr>
<th>Track</th>
<th>Name</th>
<th>Duration</th>
<th>Artist</th>
<th>Album</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>String Theory: What is it Good For?</td>
<td>51:03</td>
<td>Sera Cremonini</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>2</td>
<td>What is String Theory Any Good?</td>
<td>48:51</td>
<td>Guy Devaud</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>3</td>
<td>Advantitious Machinery</td>
<td>58:26</td>
<td>Dan Fisher</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>5</td>
<td>Modeling the Cosmos—Obs.</td>
<td>46:48</td>
<td>Dr. Elena Raxia</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>6</td>
<td>How Do You Mend a Brake</td>
<td>52:21</td>
<td>Louise Hecker</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>7</td>
<td>Encounters with Modern P</td>
<td>59:42</td>
<td>Professor Samuel C.</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>8</td>
<td>Muscling in on Tissue Engi.</td>
<td>45:30</td>
<td>Louise Hecker</td>
<td>Saturday Morning P</td>
<td>Free</td>
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<tr>
<td>9</td>
<td>Four Myths of the Cosmos</td>
<td>17:47</td>
<td>Omer Grigorescu</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>10</td>
<td>Lightings: the Mec.</td>
<td>52:45</td>
<td>James Woodward</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>11</td>
<td>Fresnel Before and After</td>
<td>52:54</td>
<td>James Woodward</td>
<td>Saturday Morning P</td>
<td>Free</td>
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<tr>
<td>12</td>
<td>It's All About Light – 1 of 3</td>
<td>59:06</td>
<td>Bradford Orr</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>13</td>
<td>We All Need Just the Right</td>
<td>58:52</td>
<td>Bradford Orr</td>
<td>Saturday Morning P</td>
<td>Free</td>
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<tr>
<td>14</td>
<td>How to Keep Your Focus:</td>
<td>55:46</td>
<td>Bradford Orr</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>15</td>
<td>Earth’s Changing Climate</td>
<td>59:31</td>
<td>Henry Pellock</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>16</td>
<td>Future of Electronics</td>
<td>58:32</td>
<td>Caglayan Kundak</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>17</td>
<td>The Electronics Revolution</td>
<td>59:45</td>
<td>Caglayan Kundak</td>
<td>Saturday Morning P</td>
<td>Free</td>
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<tr>
<td>18</td>
<td>The Music of Quantum Phy</td>
<td>58:22</td>
<td>Christopher Monroe</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>19</td>
<td>The Physics Behind Music</td>
<td>54:37</td>
<td>Christopher Monroe</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>20</td>
<td>Weapons of Mass Destruci...</td>
<td>58:48</td>
<td>Mike Sandstrom</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>21</td>
<td>Chemical Agents as Triggers</td>
<td>57:10</td>
<td>Rudy Richardson</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
<tr>
<td>22</td>
<td>Weapons of Mass Destruci...</td>
<td>59:51</td>
<td>Phil Hanna</td>
<td>Saturday Morning P</td>
<td>Free</td>
</tr>
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NCSU CatalogWS

- Library catalog as a “versatile discovery platform”
- Data source for MobiLIB - catalog interface optimized for mobile devices
- http://www.lib.ncsu.edu/dli/projects/catalogws/
Digital Reading Room is going mobile...

The library has implemented a comprehensive mobile library website containing relevant digital reading files, application tools and software, as well as learning objects (e.g., mp3 versions of journal articles, video clips, and e-books). Some highlights of the library include:

AirPace allows mobile users with wireless internet access to search and browse the library catalog, check due dates, request materials, and view their patron records in real-time. Digital information is re-formatted on-the-fly for different browsers and screen resolutions.

The Digital Reading Room (DRR) takes advantage of MP3 technology by offering audio reading files for curriculum use. The Mobile DRR also features the use of text-to-speech (TTS) technology to convert machine-readable text into MP3 audio files.

Podcasting works like a radio, with better audio quality, and no need to tune-in at a specific show time. Students can retrieve the materials when they are connecting their mobile device to a desktop, and listen to the materials on the road. For more information read the following article:

Implementing Mobile Environments using Learning Objects: The Athabasca University Digital Reading Room. (pdf document)
Re-charging Lockers at Montesquieu Learning Centre

Tilburg U.
Georgia Tech Commons
## Development of 3-D visualization environments

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
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</thead>
<tbody>
<tr>
<td>2-D</td>
<td>3-D</td>
</tr>
<tr>
<td>Access</td>
<td>Access, Creation, Display</td>
</tr>
<tr>
<td>Limited facilities</td>
<td>Open facilities</td>
</tr>
</tbody>
</table>
Mobius Transformations

Science winner

Mobius Transformations Revealed is a wonderful video clarifying a deep topic. This is amazing work by Douglas Arnold and Jonathan Rogness of the University of Minnesota.

Edward Tufte

Mobius Transformations Revealed is a short video by Douglas Arnold and Jonathan Rogness which depicts the beauty of Mobius transformations and shows how moving to a higher dimension reveals their essential unity. It was one of the winners in the 2007 Science and Visualization Challenge and was featured along with the other winning entries in the September 28, 2007 issue of journal Science. The video, which was first released on YouTube in June 2007, has been watched there by more than a million viewers and classified as a "Top Favorite of All Time" in the Film & Animation category.

- View the low resolution video on YouTube
- View the high resolution video in the IMA video library
- Download the high resolution video in QuickTime format. Warning: the file is 130 MB.
- See some screenshots (click an image below for higher resolution).

http://wwwIMA.umn.edu/~arnold/moebius
Hub Zero and nanoHUB at Purdue

- Access to collaborative simulation tools
- Access to Grid environment
- Collaborative Web 2.0 environment
- Oriented to teaching and learning
The Laboratory is furnished with a ceiling-mounted, high-resolution digital projector that can project not only the output from each of the instructor's computers but also the output from VHS and DVD decks.

Both the projector and its associated devices (room lighting, window shades, projector screen, source switcher) are controlled electronically from the two instructor's stations at the front of the laboratory.
This state of the art visualization facility has been created both for faculty use and to demonstrate low cost capabilities for departments with significant visualization needs. Our laboratory can be used for research or a component of education.

Today, advanced visualization can be carried out at a modest cost. We intend our facility to be a versatile system that allows researchers to carry out visualization completely in the Vislab or in their own department. They will be able to transfer their data and their visualization in its current state between their own computers and the Vislab for more intensive analysis.
Learning Commons eBoard Images

Nine eBoards provide imagery, information, announcements, and showcase student and faculty work throughout the Learning Commons.

- 1 Pioneer PDF-614MX Plasma (60")
- 3 Viewsonic N4200W LCDs (43")
- 2 Pioneer PDF-505CMX Plasmas (50")
- 3 Toshiba P42LSA LCDs (42")

NCSU Students, Faculty, and staff are invited to submit high-resolution images of university-related and disciplinary topics and themes (at least 1,900 pixels wide) for display on electronic signs in the D.H. Hill Library's new Learning Commons. Questions may be directed to Keith Morgan, Principal Librarian for Digital Media.
Visualization at Seattle PL
Some Thoughts on Information Literacy

- Training student instructors or coaches
- Encouraging group activities, exploration
- Introducing interactivity in classes with polls, clickers, reconfigured classrooms
- Using simulations, games, virtual world environments
- Working with instructional designers
Effective Digital Learners

- Use mobile phones, laptops, and PDAs to support their learning
- Use software to create, manipulate, and present content
- Seek peer support via informal networks of family by using e-mail, texting, chat, and Skype, “an underworld of communication and information-sharing invisible to tutors”

JISC. *In Their Own Words*, 2007
Examples of New Styles for Information Literacy

- Data collection, analysis and display using wikis at McMaster U.
- Student peer-reviewed digital posters and papers in a community-related course at Georgetown U.
- Use of GIS and data in a course offered by the library at Purdue
A father and part-time student in the UK says...

“a central repository of information, approved by the university, would help learners locate online resources more efficiently, citing Wikipedia as an example of such a repository.”

Reported in JISC. *In Their Own Words*, 2007
We need better ways to get our messages out!

- Social networking tools
- Visual devices
- Use of peers
- …other creative mechanisms
The Net Gen Are Our Future

- Assist students with making the transition from the recreational use of technology to academic use of technology
- Provide environments, physical and virtual, which engage students
- Promote creativity in students’ discipline-related work
Photos include web captures, photos from my collection and some supplied to me by:

- North Carolina State U.
- U. Delaware
- Indiana U.

With thanks!
Resources

*Educating the Net Gen*
Edited by Diana G. Oblinger and James L. Oblinger

http://www.educause.edu/LibraryDetailPage/666&ID=pub7101


www.digitallearning.macfound.org

Contact: joan@cni.org