A Discussion of Technology Trends and Research Gaps in Higher Education

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Emerging Learning Technologies

Poll: Which of these is the most important? (pick one)
1. Assistive Technologies
2. Blogs and Online Diaries
3. OpenCourseWare and Open Educational Resources
4. Digital Books
5. Social Networking Technology
6. Intelligent Agents
7. Wikis, and Wikibooks
8. Online Games and Simulations (Massive Multiplayer Gaming)
9. Shared Online Video (YouTube, TeacherTube)
10. Peer-to-Peer Collaboration
11. Reusable Content Objects and Portals
12. Video streaming, IP Videoconferencing
13. Virtual Worlds/Reality
14. Wearable Computing
15. Wireless Tech: Tablet PCs, Handheld Devices
16. Digital Portfolios

1. New Online Search Technology (timeline, map, etc. oriented)

2. New Interfaces

3. Mobile Learning

• 50 million iPhone users and 85,000 applications.
• Pull yourself away from that iPhone and read this story. By Mary Bergley Marcus. USA Today, October 5, 2009
4. Mobile Experts (online mentoring)  
(e.g., Live Happy Practitioner Directory)  
http://www.signalpatterns.com/practitioner

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

6. e-Book Readers  
(e.g., Barnes & Noble unveils its e-reader,  
USA Today, October 21, 2009)

7. Digital Textbook Projects (Korea)  
Includes: dictionary, email and forums, games,  
simulations, hyperlinks, multimedia, authoring, data  
search, study aids, evaluation, etc.  
(112 schools as of 2009; free for all schools by 2013)

8. Shared Online Video  
(e.g., TED, Academic Earth, TeacherTube, YouTube  
Edu, Link TV, Fora TV, TV Lesson, etc.)

9. Live Videostreaming  
Streaming Class Video for Remote Students  
(e.g., Tegrity, Univ of Central Florida)
10. The Explosion of Synchronous Conferencing, Webcams, and Webinars (e.g., Illuminate, Dvdim, WebEx, Adobe Connect Pro)

11. Interactive Videoconferencing (e.g., Global Nomads Group)

12. Telepresence Systems (e.g., Cisco and HP)

13. Live Science
   Human Brain Dissected Today in a Live Webcast,
   Chronicle of Higher Education, December 03, 2009, 01:00 PM

14. OpenCourseWare (OCW)

15. Simulations (e.g., Virtual Astronaut from WisdomTools)
16. Wikis, Wikibooks, and Wiki Collaboration Sites (e.g., Wikispaces)

17. Portals of Endless Content (e.g., Google Sky)

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

19. Sharing Repositories and Referatories
MERLOT.org: 78,172 members, 21,690 learning materials,
January 3, 2010
Connections: December 2009, 1.6m unique users, 4 million
page views, 72 million hits, More than 1m unique users from
nearly 200 countries

20. Free Course Management Systems
(e.g., Moodle (620,000 registered users in 204
countries speaking 78 languages, 2/10/2009)

21. Text Messaging. "This Generation: Always Connected: 18 and Under: Texting, Surfing,
Studying? NY Times, October 13, 2009, PERRI KLASSE, M.D
22. Bendable/Expandable Screens

23. Portable Storage Devices
Terabyte thumb Drives and Magic Pens!
(The Pulse from Livescribe, $129-$169)

24. Cheap Netbooks and Laptops
(How about a $12 laptop?)

25. Free College Education
(Peer2Peer University and University of the People)

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

27. Participatory E-Books
28. Scribd: Documents on Web

28. Virtual Worlds (e.g., Second Life; business, law, education, English, medicine)

29. Microblogging (Twitter, Hotseat)
Chronicle of HE, Jeffrey Young, November 22, 2009

30. Social Networking Facebook
The New Classroom Commons?, Chronicle of HE, Harriet L. Schwartz, Sept. 28, 2009

31. Podcast Shows
(subscribe to ShakespeareCast.com)

32. Online Language Learning
Livemocha (29 languages, 160 hours of lessons, over 2 million users, FREE!)
33. The Cloud
(e.g., Google Sites, Google Docs)

34. Scanning and Printing
Google to Reincarnate Digital Books
Sept 17, 2009, by MICHAEL LIEBSTE AP Technology Writer

35. Book/Personality Websites
(e.g., Brain Rules, John Medina)
http://www.brainrules.net/

36. YouTube as Class

37. Medical Simulations in YouTube
Can Training in Second Life Teach Doctors to Save Real Lives? Discover, by Melissa Lefsky published online July 16, 2009

38. Video Chat Collaboration
U. of La Verne Welcomes the World, One Fulbright Lecturer at a Time, Karin Fischer, Chronicle of HE, October 18, 2009

Jack W. Meck, a professor at the U. of La Verne, video-chats with Marcos A. Pedlowski, a Brazil-based scholar with whom he did a study of community participation in municipal planning. They met through Mr. Pedlowski's participation in a Fulbright visiting-lecturer program.
39. YouTube EDU

40. Language Translation

Research???

Demographical data:
more than 97% were male

Gender of Wikibookians

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td></td>
<td>97%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Findings - Education

<table>
<thead>
<tr>
<th>Degrees</th>
<th>Previous study (80 participants)</th>
<th>Current study (167 participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower than high school</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>High school</td>
<td>29%</td>
<td>23%</td>
</tr>
<tr>
<td>Two-year college</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
<td>Four-year college</td>
<td>23%</td>
<td>26%</td>
</tr>
<tr>
<td>Master's or graduate</td>
<td>16%</td>
<td>21%</td>
</tr>
<tr>
<td>level degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctoral or post</td>
<td>11%</td>
<td>16%</td>
</tr>
<tr>
<td>graduate degree</td>
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</tbody>
</table>

Findings - Experience

- How long have you been contributing to or editing in Wikibooks?

<table>
<thead>
<tr>
<th>Duration</th>
<th>0 (just starting) / month or less</th>
<th>1 to 6 months</th>
<th>7 to 12 months</th>
<th>1-2 years</th>
<th>2-3 years</th>
<th>More than 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>4.19%</td>
<td>28.34%</td>
<td>14.17%</td>
<td>29.34%</td>
<td>13.77%</td>
<td>4.19%</td>
</tr>
</tbody>
</table>
Findings from Surveys (cont.)

• Collaboration: 99% of Wikibookian Experts and 80% of Wikibook Novices agreed Wikibooks promotes online collaboration.

![Chart showing agreement levels for collaboration among Wikibook users]

Instructional Issues

a. Status (part-time or full-time), backgrounds, expectations
b. Student control over posting
c. Coordinating peer interaction
d. The degree of scaffolding/structure
e. Timing of collaboration, feedback, interaction
f. Coordinating schedules across institutions
g. What is learning? How assess it?
h. Instructor control and risk taking
i. Reusability of wikibook
j. Meta-reflection about wikibook principles
k. Motivational techniques

20 Tensions of Cross-Institutional Wikibooks and Suggestions

Sample Tensions
1. Experimentation vs. impact
2. Global ed imp. vs. time
3. New benefits of tech and wikis vs. frustrations
4. Open ended vs. guided learning
5. Inclusive projects vs. realities of schedules
6. Intrinsically valuable vs. external rewards

Ideas and Suggestions
• Modeling, archive prior work
• Plan, check calendars
• Test Technologies, ask students what they use
• More participants, more open-ended
• Check schedules, get written commitments
• Experiment with rewards; more participants > interaction

Findings - Community

• How is someone typically apprenticed into the Wikibooks environment

![Chart showing how users are apprenticed into the Wikibooks community]

Findings - Community

• What is your view of Wikibooks

![Chart showing views of Wikibooks]

Future research

• Asynchronous apprenticeship
• In-depth ethnographical understanding of the lived experience of a Wikibookian
• Communicate with Wikimedia foundation; suggest improvements of tools; keep monitoring changes at site
YouTube Growth

Randy Pausch's last lecture

- April 2008: ~2 millions
- October 2008: ~7.5 millions
- April 2009: ~9.5 millions
- January 2008: ~79 million viewers watched more than 3 billion user-posted videos on YouTube

(Yen, 2008)

Purpose of this Study

The purpose of this survey research was to understand to what extent adult users share, watch, create, comment on, and subscribe to YouTube videos.

Social Aspects of YouTube

<table>
<thead>
<tr>
<th>Total use</th>
<th></th>
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<tbody>
<tr>
<td>Shared a video with others</td>
<td>77%</td>
</tr>
<tr>
<td>Added a video to your favorite</td>
<td>46%</td>
</tr>
<tr>
<td>Commented on a video</td>
<td>35%</td>
</tr>
<tr>
<td>Posted a video response</td>
<td>22%</td>
</tr>
<tr>
<td>Created a video</td>
<td>8%</td>
</tr>
<tr>
<td>Subscribed to a channel</td>
<td>17%</td>
</tr>
<tr>
<td>Flagged a video as inappropriate</td>
<td>6%</td>
</tr>
</tbody>
</table>

When are you most likely to watch YouTube?

- 6 am to 12 noon: 10.72%
- 12 noon to 6 pm: 20.46%
- 6 pm to 12 pm (midnight): 59.19%
- 12 pm to 6 am: 4.97%
- Never: 4.87%

Figure 3: Percent of Minutes for Watching Each Type

[Graph showing the percentage of time spent watching different types of YouTube content.]
Discussion

Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: http://worldisopen.com/