A Discussion of Technology Trends and Research Gaps in Higher Education

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

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. Videostreaming, 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 Brophy 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 (Elluminate, Dimdim, WebEx, Adobe Connect Pro)

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

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

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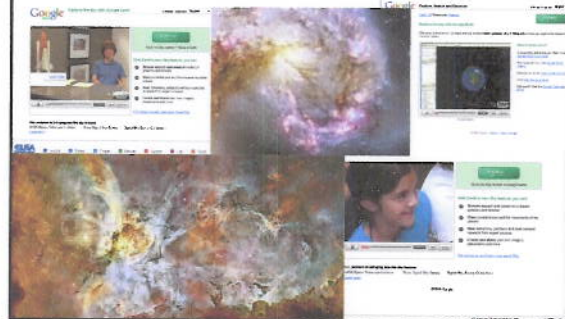Human Brain Dissected Today in a Live Webcast, Chronicle of Higher Education, December 02, 2009, 01:00 PM

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: 78,472 members, 21,690 learning materials, January 3, 2010
Connexions: 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)
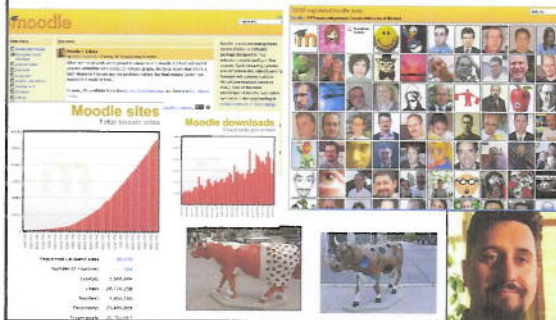
21. Text Messaging. "This Generation: Always Connected: 18 and Under: Texting, Surfing, Studying? NY Times, October 13, 2009, PERRI KLASS, M.D

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)

Neeru Paharia is behind Peer2Peer University, Fast Company, September 2009, How Web-Savvy Edupunks Are Transforming American Higher Education
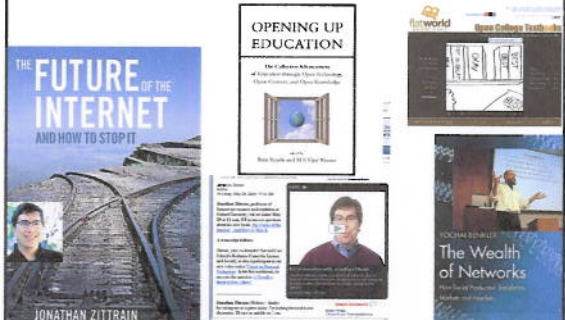
26. Open Teaching
(Tom Reeves Evaluation Course at Georgia; David Wiley's Web 2.0 courses at BYU; Connectivism from George Siemens and Stephen Downes, 24 enrolled, 2,000+ sitting in)

27. Participatory E-Books

28. Scribd: Documents on Web
http://www.scribd.com/; 21 million unique visitors per month, May 2008

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 LIEDTKE 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 Lafsky 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. Meek, a professor at the U. of La Verne, video-chats with Marcos A. Pedlowski, a Brazilian 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

43

40. Language Translation

Research???

Demographical data: more than 97% were male

Gender of Wikibookians

Female
3%

Male
97%

- Male
- Female
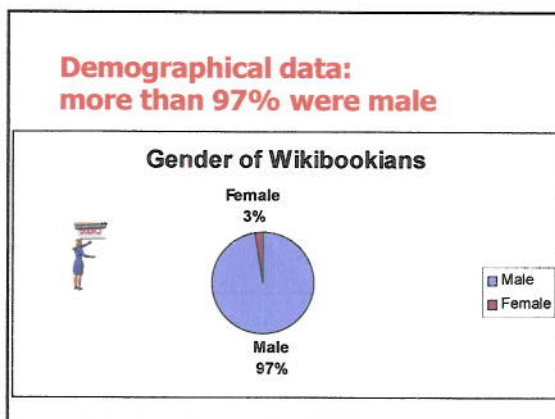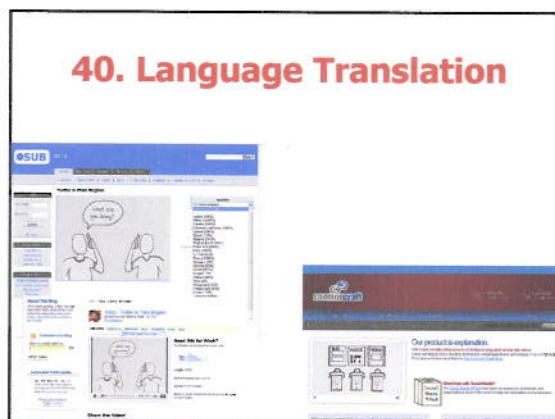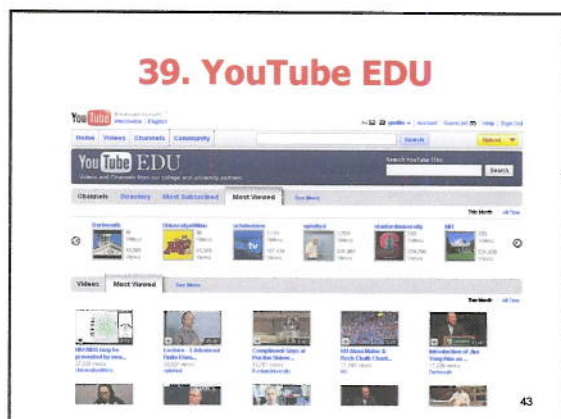
Findings – Education

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

Findings - Experience

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

35%
30%
25%
20%
15%
10%
5%
0%

4.19% 4.19% 28.14% 16.17% 29.34% 13.77% 4.19%

0 (just starting) One month or less 1 to 6 months 7 to 12 months 1-2 years 2-3 years More than 3 years
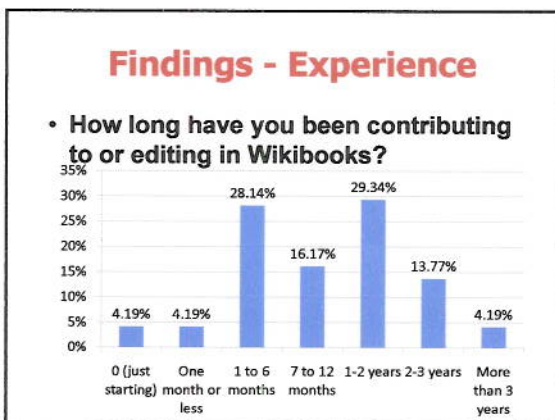
Findings from Surveys (cont.)

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

Wikibooks are Good for Online Collaboration
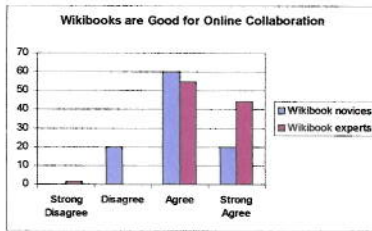
Instructional Issues

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 collab, 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 impt 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

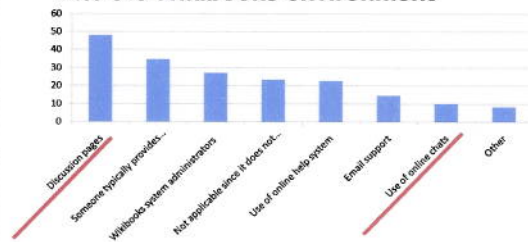### Ideas and Suggestions

- 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

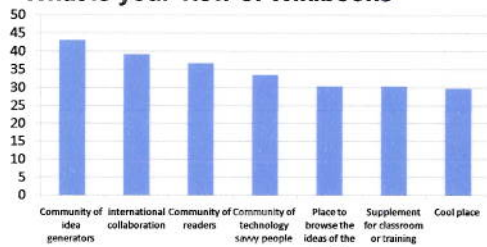## Findings - Community

- How is someone typically apprenticed into the Wikibooks environment

---

Findings - Community

- What is your view of Wikibooks
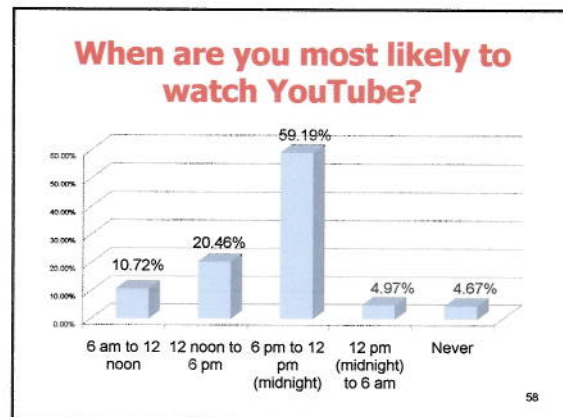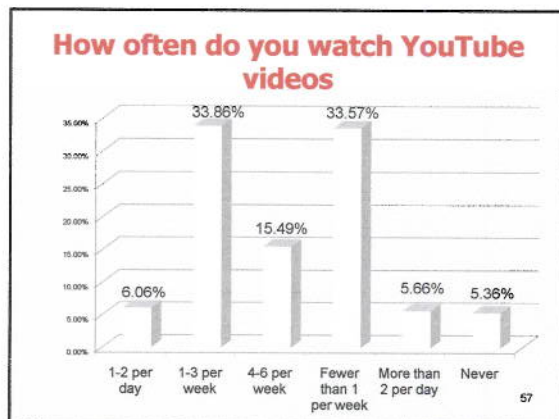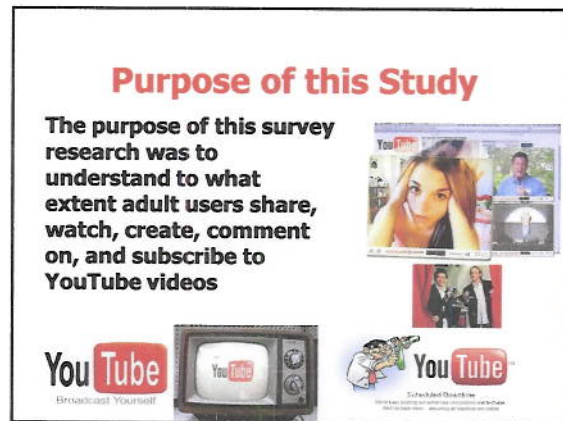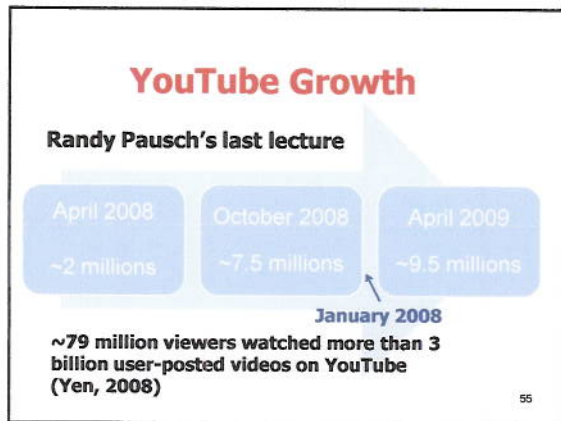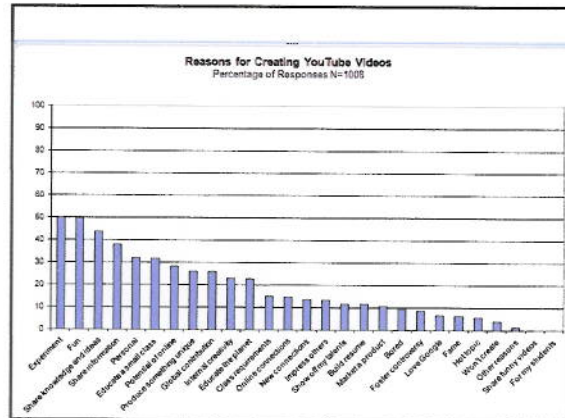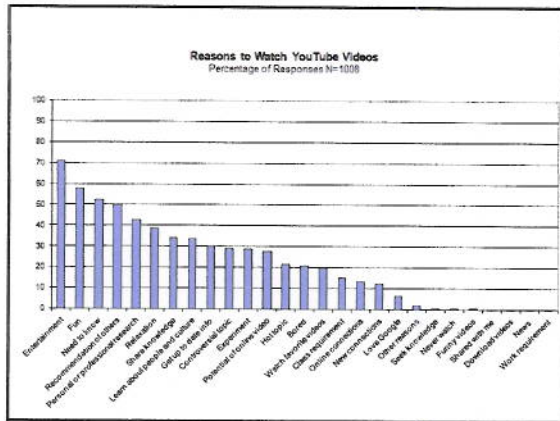

Future research

- 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

9

YouTube Growth

Randy Pausch's last lecture

April 2008	October 2008	April 2009
~2 millions	~7.5 millions	~9.5 millions

January 2008

~79 million viewers watched more than 3 billion user-posted videos on YouTube (Yen, 2008)

55

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

---

How often do you watch YouTube videos

6.06% — 1-2 per day
33.86% — 1-3 per week
15.49% — 4-6 per week
33.57% — Fewer than 1 per week
5.66% — More than 2 per day
5.36% — Never

57

When are you most likely to watch YouTube?

10.72% — 6 am to 12 noon
20.46% — 12 noon to 6 pm
59.19% — 6 pm to 12 pm (midnight)
4.97% — 12 pm (midnight) to 6 am
4.67% — Never

58

Social Aspects of YouTube

Tool use	
Shared a video with others	77%
Added a video to your favorite	46%
Commented on a video	30%
Posted a video response	22%
Created a video	18%
Subscribed to a channel	17%
Flagged a video as inappropriate	6%

59

Figure 3. Percentage of Motives for Watching Each Type

10

Reasons to Watch YouTube Videos
Percentage of Responses N=1008

Reasons for Creating YouTube Videos
Percentage of Responses N=1008

Discussion

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