

## 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)

<ol style="list-style-type: none"> <li>1. Assistive Technologies</li> <li>2. Blogs and Online Diaries</li> <li>3. OpenCourseWare and Open Educational Resources</li> <li>4. Digital Books</li> <li>5. Social Networking Technology</li> <li>6. Intelligent Agents</li> <li>7. Wikis and Wikibooks</li> <li>8. Online Games and Simulations (Massive Multiplayer Gaming)</li> </ol>	<ol style="list-style-type: none"> <li>9. Shared Online Video (YouTube, TeacherTube)</li> <li>10. Peer-to-Peer Collaboration</li> <li>11. Reusable Content Objects and Portals</li> <li>12. Videostreaming, IP Videoconferencing</li> <li>13. Virtual Worlds/Reality</li> <li>14. Wearable Computing</li> <li>15. Wireless Tech: Tablet PCs, Handheld Devices</li> <li>16. Digital Portfolios</li> </ol>
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### 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>

The image shows a desktop browser window displaying the 'Live Happy Practitioner Directory' website. To the right of the browser are two mobile phones. The phone on the left shows a list of practitioners, including 'Cindy Hoop, PhD' and 'John Freeman, MA, LPAT'. The phone on the right shows a detailed profile for 'Spencer Depue, Assistant Professor' with a bio and a photo.

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

The image features a newspaper clipping on the left with the headline 'For social networks, it's game on' and a photo of a person playing a game. To the right is a screenshot of the Farmville game interface, showing a virtual farm with various animals and buildings.

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

This block contains a collage of images. On the left is a hand holding a tablet displaying a stylized 'u' logo. In the center is a man in a suit pointing at a screen. On the right is a classroom scene with students at desks. Below these are several smaller images of e-readers and related digital content.

### 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)

The image shows a screenshot of a digital textbook project interface. It features a central graphic of a book with the title 'Digital Textbook' and various icons representing different educational tools like a dictionary, email, forums, and games. The interface is colorful and interactive.

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

This block is a collage of video lecture thumbnails. It includes several small video player windows showing different speakers and topics. A prominent slide from a TED talk is visible in the bottom right corner, featuring the TED logo and a speaker.

### 9. Live Videostreaming Streaming Class Video for Remote Students (e.g., Tegrity, Univ of Central Florida)

The image shows a screenshot of a live videostreaming interface. The main window displays a classroom scene with students in graduation gowns. Below the video is a playback control bar with a progress indicator at 00:00:55 and various control buttons like play, pause, and volume.



### 10. The Explosion of Synchronous Conferencing, Webcams, and Webinars (Elluminate, Dimdim, 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 02, 2009, 01:00 PM

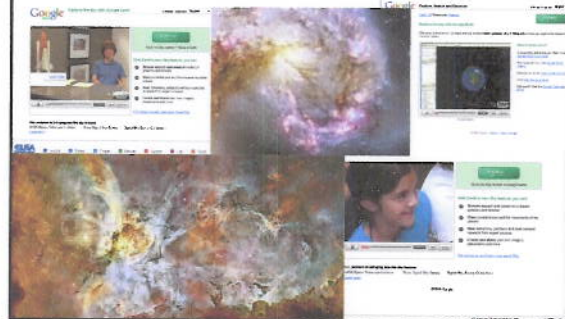
### 14. OpenCourseWare (OCW)

### 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)



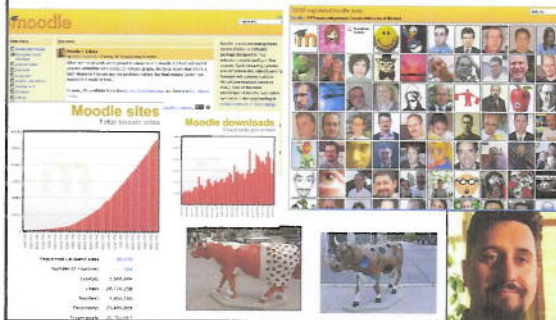
### 18. Open Educational Resources (OER) Post Courses in YouTube and iTunes (e.g., Berkeley)



### 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


**TECHNOLOGY**

**Sony Shows Off Paper-Thin, Bendable Video Display**

Feb 12, 2007

Associated Press

2-MIN. STORY    PHOTO GALLERY



TOYO — In the race for ever-smaller displays for TVs, cell phones and other gear, Sony has now unveiled one of the thinnest — a color display that bends like paper while showing full-color video.

Sony Corp. (SNE) unveiled the new 2.5-inch display Friday in a hand-demonstrated device that is 2.5 millimeters, or 0.1 inch, thin. The device shows color images in a 16:9 aspect ratio and a resolution of 300,000 pixels.

• Click here for FOXNews.com's Business and Innovation Center.

• Click here for FOXNews.com's Personal Technology Center.

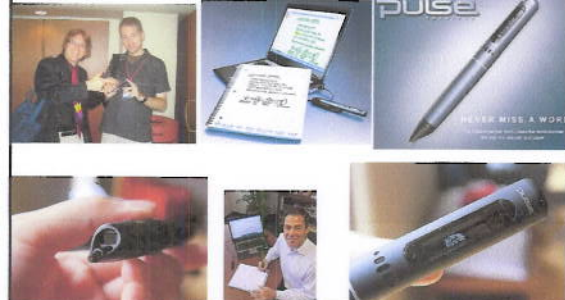
Although this panel isn't getting thinner, a display that is as thin as a credit card might be a breakthrough.

Size 400 | Click left to view all story photos using the technology.

### 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?)



**Herold.com**

**Designers on quest to build \$12 computer**

**India says it is developing a \$10 laptop**

No specs yet, it would be used for educational purposes.

**COMPUTERWORLD**

### 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**

**Israeli Entrepreneur Plans a Free Global University That Will Be Online Only**




**Technology Review**

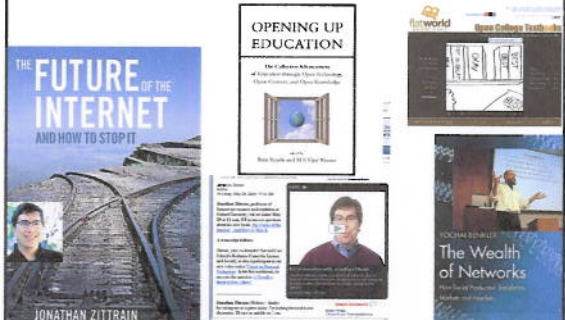
**Israeli starts 1st tuition-free online university**

### 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



**THE FUTURE OF THE INTERNET AND HOW TO STOP IT**

**OPENING UP EDUCATION**

**THE WEALTH OF NETWORKS**

### 28. Scribd: Documents on Web

<http://www.scribd.com/>; 21 million unique visitors per month, May 2008

The image shows a screenshot of the Scribd website with navigation options like 'Publish Yourself Online', 'Upload Documents', and 'Explore Our Library'. Below the screenshot is a photograph of two men standing in front of a wall with the Scribd logo and colorful balloons.

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

A collage of several screenshots from virtual worlds. It includes avatars in a virtual classroom, a virtual office, and various social interactions within a 3D environment.

### 29. Microblogging (Twitter, Hotseat)

Chronicle of HE, Jeffrey Young, November 22, 2009

A collage of images related to microblogging. It features a large group of people at a conference, a man speaking at a podium, and a close-up of a laptop screen showing a social media interface.

### 30. Social Networking Facebook

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

The image contains a screenshot of a Facebook profile and a bar chart titled 'SOCIAL NETWORKING'. The chart compares the number of users for various social networking sites.

Social Networking Site	Number of Users (Millions)
Facebook.com	82.2 million
MySpace.com	64.2 million
Twitter.com	20.8 million
LinkedIn.com	17.4 million
Classmates.com	13.9 million
Delicious.com	12.1 million
MySpace.com (Mobile)	11.4 million
Windows Live Profile	10.3 million

Below the chart is a pie chart titled 'Growth of social networking sites' comparing August '08 and August '09.

### 31. Podcast Shows

(subscribe to ShakespeareCast.com)

The image shows a screenshot of the ShakespeareCast.com website on the left and a 'Big Contact Feed Player' window on the right. The player lists various Shakespeare plays and scenes available for streaming or download.

### 32. Online Language Learning

Livemocha (29 languages, 160 hours of lessons, over 2 million users, FREE!)

A collage of screenshots from the Livemocha website. It shows the main interface for learning languages like Italian and Spanish, including lesson options and user statistics.



### 33. The Cloud (e.g., Google Sites, Google Docs)

**Cloud Computing**  
everything and the kitchen sink

**Google sites**  
Thinking of creating a website?  
Google Sites is a free and easy way to create and share websites. [Learn More](#)

**Create**  
with just a page or two

**Control**  
with just a few clicks

**Control**  
with just a few clicks

### 34. Scanning and Printing Google to Reincarnate Digital Books

Sept 17, 2009, By **MICHAEL LIEDTKE** AP Technology Writer

**abc NEWS** Technology & Science

**Google to Reincarnate Digital Books as Paperbacks**  
Google Gave New Life to 2 Million Digital Books by Allowing Them to Retain

By **MICHAEL LIEDTKE** AP Technology Writer  
ABC News video: [Call September 17, 2009 \(AP\)](#)

### 35. Book/Personality Websites (e.g., Brain Rules, John Medina)

<http://www.brainrules.net/>

**brain rules** 128 Principles for Learning and Teaching  
JOHN W. MEDINA

The brain is an amazing thing. Think of all the things it's doing for you right now. The fact

### 36. YouTube as Class

**YouTube** Learning From YouTube Class 100

**YouTube** LPTV Archive Research Project

**YouTube** Class Statement 2

**YouTube** Jeffrey Paul Video

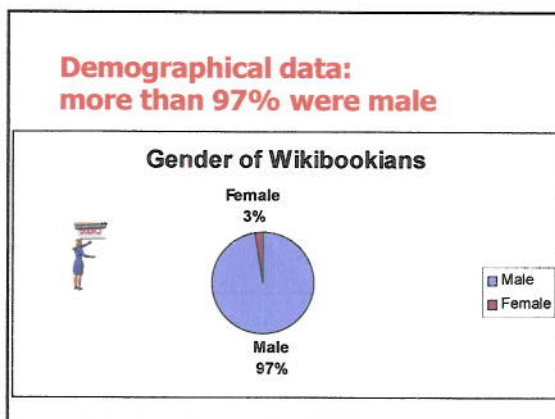
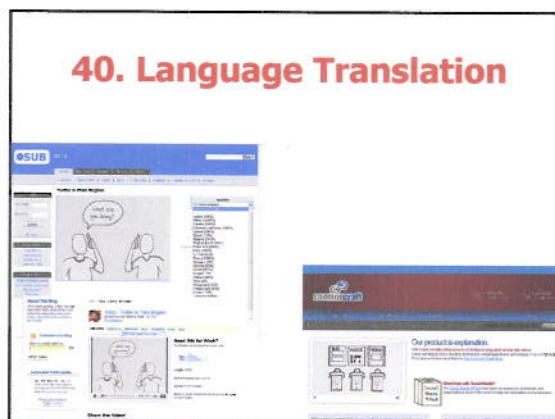
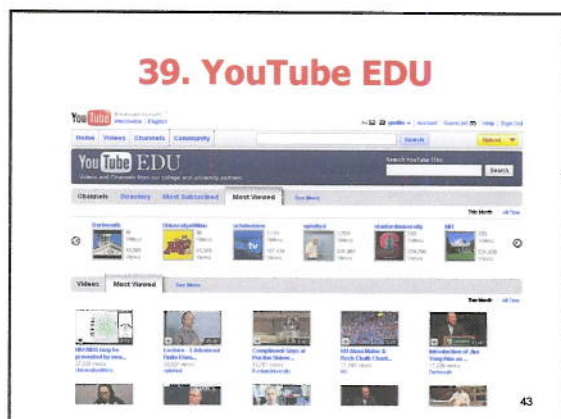
### 37. Medical Simulations in YouTube Can Training in Second Life Teach Doctors to Save Real Lives? Discover, by Melissa Lafsky published online July 16, 2009

**YouTube** Second Life - Heart Murmur Sim

35,795 views

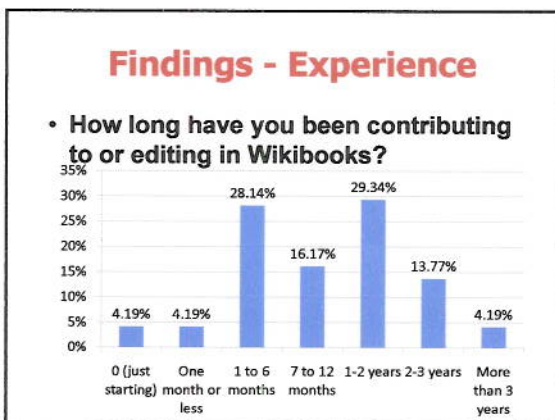
### 38. Video Chat Collaboration U. of La Verne Welcomes the World, One Fulbright Lecturer at a Time, Karin Fischer, Chronicle of HE, October 18, 2009

**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.



### Findings – Education

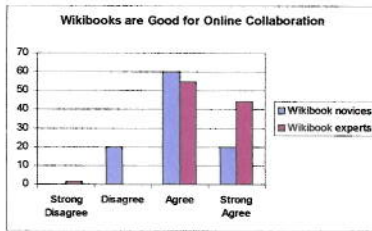
Degrees	Previous study (80 participants)	Current study (167 participants)
Lower than high school	10%	5%
High school	29%	23%
Two-year college	11%	10%
Four-year college	23%	26%
Master's or graduate level degree	16%	21%
Doctoral or post graduate degree	11%	16%





### Findings from Surveys (cont.)

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



### Instructional Issues

- Status (part-time or full-time), backgrounds, expectations
- Student control over posting
- Coordinating peer interaction
- The degree of scaffolding/structure
- Timing of collab, feedback, interaction
- Coordinating schedules across institutions
- What is learning? How assess it?
- Instructor control and risk taking
- Reusability of wikibook
- Meta-reflection about wikibook principles
- Motivational techniques



### 20 Tensions of Cross-Institutional Wikibooks and Suggestions

#### Sample Tensions

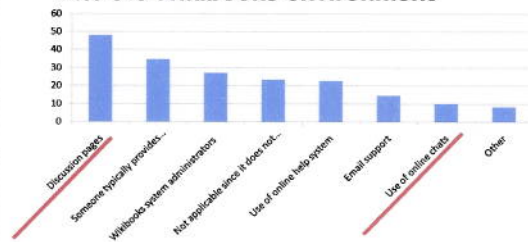
- Experimentation vs. impact
- Global ed impt vs. time
- New benefits of tech and wikis vs. frustrations
- Open ended vs. guided learning
- Inclusive projects vs. realities of schedules
- Intrinsically valuable vs. external rewards

#### 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

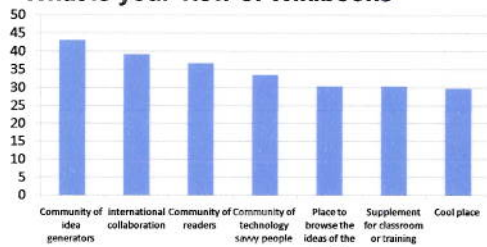
### Findings - Community

- **How is someone typically apprenticed into the Wikibooks environment**



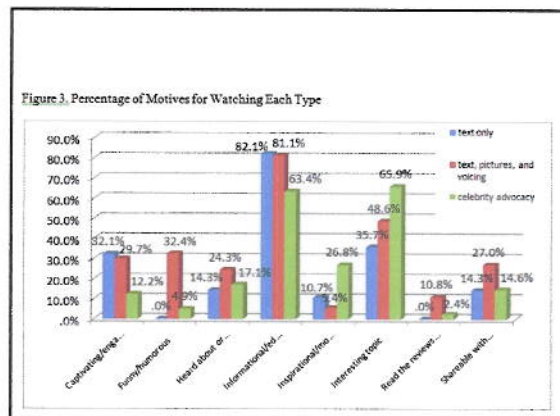
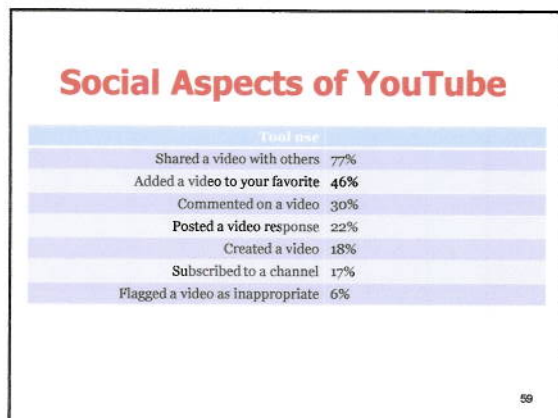
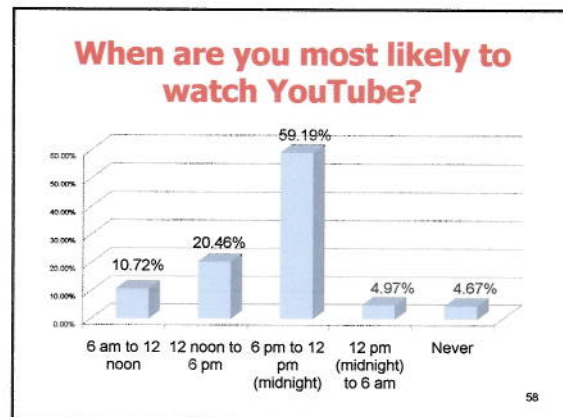
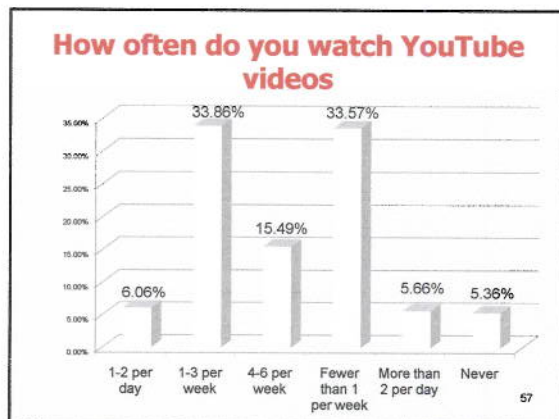
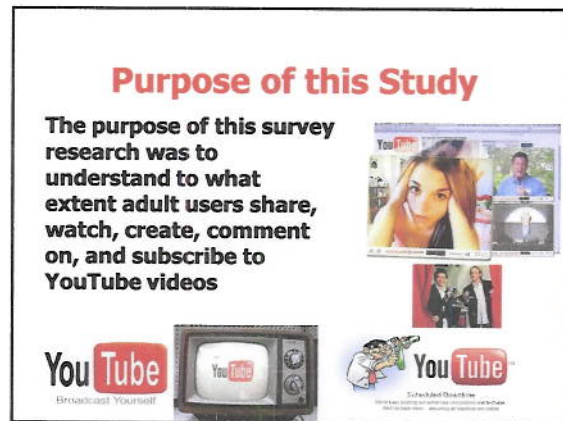
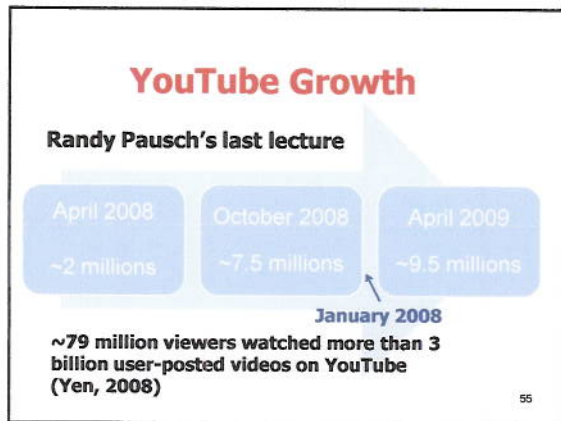
### Findings - Community

- **What is your view of Wikibooks**

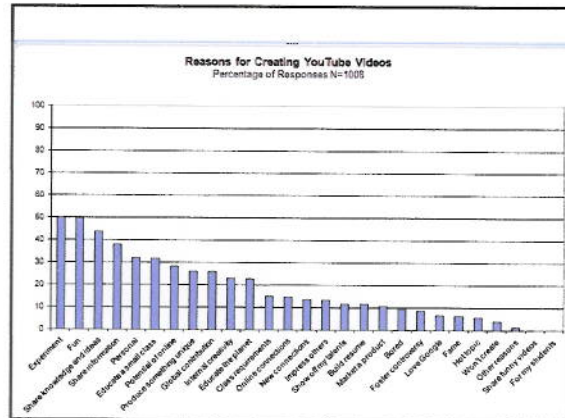
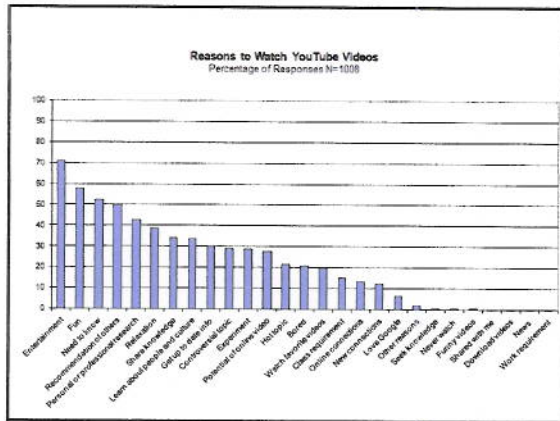


### Future research

- **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**







## Discussion

Slides at: [TrainingShare.com](http://TrainingShare.com)  
 Papers: [PublicationShare.com](http://PublicationShare.com)  
 Book: <http://worldisopen.com/>