Social Computing in Education

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The Chinese University of Hong Kong
Wealthiest People

Facebook in 2004.02

2008 at 23 and $1.5 billion later...

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<table>
<thead>
<tr>
<th>Alexa as of Nov. 2008</th>
<th><strong>USA</strong></th>
<th><strong>CHINA</strong></th>
<th><strong>Global</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Google</td>
<td>Baidu</td>
<td>Yahoo</td>
</tr>
<tr>
<td>2</td>
<td>Yahoo</td>
<td>QQ</td>
<td>Google</td>
</tr>
<tr>
<td>3</td>
<td>Myspace</td>
<td>Sina</td>
<td>YouTube</td>
</tr>
<tr>
<td>4</td>
<td>YouTube</td>
<td>Google.cn</td>
<td>Windows Live</td>
</tr>
<tr>
<td>5</td>
<td>Facebook</td>
<td>Taobao</td>
<td>Facebook</td>
</tr>
<tr>
<td>6</td>
<td>Windows Live</td>
<td>163</td>
<td>MSN</td>
</tr>
<tr>
<td>7</td>
<td>MSN</td>
<td>Yahoo</td>
<td>Myspace</td>
</tr>
<tr>
<td>8</td>
<td>Wikipedia</td>
<td>Google</td>
<td>Wikipedia</td>
</tr>
<tr>
<td>9</td>
<td>EBay</td>
<td>Sohu</td>
<td>Blogger</td>
</tr>
<tr>
<td>10</td>
<td>AOL</td>
<td>Youku</td>
<td>Yahoo.jp</td>
</tr>
</tbody>
</table>

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Tuesday, 10 March 2009
Road Map

- The Web 2.0 Revolution...
- Social Computing Education 2.0
- m-Learning
- Future Research and Challenges
- Final Remarks
Web 2.0

- Web as a medium vs. **Web as a platform**
- Read-Only Web vs. **Read-and-Write Web**
- Static vs. **Dynamic**
- Restrictive vs. **Freedom & Empowerment**
- Technology-centric vs. **User-centric**
- Limited vs. **Rich User Experience**
- Individualistic vs. **Group/Collective Behavior**
- Consumer vs. **Producer**
- Transactional vs. **Relational**
- Top-down vs. **Bottom-up**
- People-to-Machine vs. **People-to-People**
- Search & browse vs. **Publish & Subscribe**
- Closed application vs. **Service-oriented Services**
- Functionality vs. **Utility**
- Data vs. **Value**
Web 2.0 Revolution

- **Glocalization** - think globally and act locally!
- **Weblication** - Web is the application!
- **3 Cs**
  - Connectivity
  - Collaboration
  - Communities

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Categories of Educational Activities

- Media sharing
- Media manipulation
- Conversational arenas
- Online games and virtual worlds
- Social networking
- Blogging
- Social bookmarking
- Recommender systems
- Collaborative editing
- Wikis
- Syndication
# Media Sharing

<table>
<thead>
<tr>
<th>General</th>
<th>Educational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uploading and downloading media files for audience or exchange</td>
<td>Sites have emerged that welcome creative digital material organized by educators</td>
</tr>
</tbody>
</table>

**Zentation**: Share video and powerpoint

**NoteCentric**: Share university class notes

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Media Manipulation

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<tbody>
<tr>
<td>Use web-accessible tools to design and edit digital media files</td>
<td>Provide graphical representations education materials</td>
</tr>
</tbody>
</table>

**Thumbstacks**: Allow presentations to be built and played online

**Googlelittrips**: Link literature to places or maps
# Conversational Arenas

<table>
<thead>
<tr>
<th>General</th>
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</tr>
</thead>
<tbody>
<tr>
<td>One-to-one or one-to-many conversations between internet users</td>
<td>Support educational conversations by a variety of tools</td>
</tr>
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</table>

**Think:** Teachers and students create learning projects, participate in a website competition...

**Chatmaker:** Users can create chat rooms for personal websites, blogs, newsgroups...

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# Online Games and Virtual Worlds

<table>
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<tbody>
<tr>
<td>Rule-governed games or themed environments that invite live interaction with other users</td>
<td>Develop multi-player online games for educational purpose</td>
</tr>
</tbody>
</table>

**Vue:** Provide a virtual educational and research institute

**Schome:** An education system to support people in learning throughout their lives

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Online Games: Second Life

Second Life is an online, 3D virtual world imagined and created by its Residents.
## Social Networking

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Websites that structure social interaction between members who form subgroups of ‘friends’</td>
<td>Typically include education-oriented friendship groups</td>
</tr>
</tbody>
</table>

### Examples:

#### General

Schoolnetglobal: Provides a child-oriented design and security service for cross-site collaboration

#### Educational

Learnhub: Teachers can create learning communities.

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# Blogging

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</tr>
</thead>
<tbody>
<tr>
<td>An on-line journal or diary in which a user can post text and digital material while others can view and comment</td>
<td>Blog sites exist especially for students and teachers</td>
</tr>
</tbody>
</table>

**Edublogs:** Blogging for teachers and students

**Nature:** Encourages scientific authors to blog around their findings

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## Wikis

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Web-based services allow users unrestricted access to create, edit and link pages</td>
<td>Sites that allow students and teachers to establish their own wiki with an educational slant</td>
</tr>
</tbody>
</table>

**Pbwiki**: students and teacher can create their own wiki

**Wikiversity**: devoted to learning resources, learning projects, and research for use in all levels, types, and styles of education

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# Social Bookmarking

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<th>Educational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow users to submit their bookmarked web pages to a central site where they can be tagged and found by others</td>
<td>Bookmarks sharing systems designed for research and education users</td>
</tr>
</tbody>
</table>

- **BibSonomy**: A system for sharing bookmarks and list of literature
- **Citeulike**: A website for the collecting and sharing research publications

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# Recommender Systems

<table>
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<th>General</th>
<th>Educational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Websites aggregate and tag user preferences to make novel recommendations</td>
<td>Recommender systems designed for research and education users</td>
</tr>
</tbody>
</table>

**Ratemyteachers**: An (infamous) example of recommendation technology in education involves user evaluation of teachers.

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Collaborative Editing

<table>
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<tr>
<th>General</th>
<th>Educational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web tools used collaboratively to design, construct and distribute digital product</td>
<td>Text, spreadsheets and other documents can be stored centrally and permit collaborative editing</td>
</tr>
</tbody>
</table>

**Thinknature**: Websites incorporate more visual tools for collaborative pages

**Bubbl.us**: Some emphasizing mind-maps for brainstorming
## Syndication

<table>
<thead>
<tr>
<th>General</th>
<th>Educational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users can ‘subscribe’ to RSS feed enable websites so that they are automatically notified of any changes or updates in content via aggregator.</td>
<td>Websites from which students can take advantage of syndicated content.</td>
</tr>
</tbody>
</table>

### Podcastschool
A website contains podcasts for school students.

### Stanford
A website contains syndicated material sponsored by Stanford.

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Evolution of Learning and Training

distance learning
d-Learning

electronic learning
e-Learning

mobile learning
m-Learning

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Categories of Learning

- contact learning (face-to-face)
- flexible learning
- e-Learning
  - online learning
  - mobile learning
- distance learning
- paper-based distance learning
e-Learning

- A subset of technology-based training and encompasses all learning activities conducted on the internet.

- Can be “live” (also known as “synchronous”) learning, meaning students communicate with peers and instructors in real-time, or it can be completely self-paced, which is known as “asynchronous” learning.

- Covers a set of applications and processes, including:
  - Computer-based training
  - Web-based learning
  - Virtual classroom
  - Digital collaboration
UNIVERSITIES.COM: The most extensive collection of distance learning

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What is m-Learning?

<table>
<thead>
<tr>
<th>New Learning Paradigms</th>
<th>Mobile Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual/Learner centered</td>
<td>Personalized Services</td>
</tr>
<tr>
<td>Collaborative learning</td>
<td>Networked/Wireless</td>
</tr>
<tr>
<td>Situated learning</td>
<td>Mobile awareness</td>
</tr>
<tr>
<td>Contextual learning</td>
<td>Context awareness</td>
</tr>
<tr>
<td>Ubiquitous learning</td>
<td>Ubiquitous</td>
</tr>
<tr>
<td>Life long</td>
<td>Durable</td>
</tr>
</tbody>
</table>
What is m-Learning?

- Refers to the use of mobile and handheld devices in teaching and learning
- Mobile implies movement and mobility--to learn “on the go”
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Why m-Learning?

• Enhance learner’s success
  • Real world skills
• Access learning materials from anywhere and anytime
• Just-in-time learning--reference tool for quick access to data in the field
• Interact with others
• Collaborate learning

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m-Learning Devices

- PDAs
- Tablet PCs
- Mobile phones
- Wearable computers
- Laptop computers
- E-book readers
- Hybrid devices
iPhone in Medicine

Medical resources developed for the iPhone can be used by students and practitioners

http://jeffreyleow.wordpress.com/2008/06/10/iphone-in-medical-education/

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Limitation of m-Learning Devices

- Small scree size and limited storage capabilities
- Batteries require regular charging
- Lack of common platform
- More easily lost or stolen
- Much less robust than desktops
- Get outdated very quickly
- Security and privacy issues
- Limited bandwidth problems
- Difficulties to upgrade
Tensions and Areas for Further Research

- Teaching vs. learning
- Walled garden vs. open arena
- Private learning vs. collaborative learning
- Digital native vs. digital immigrant
- Social networking vs. anti-social networking
- Rip-mix-burn vs. cut-tweak-paste
- Transitory marks vs. persistent marks
- Print literacy vs. digital literacy
- Serial processing vs. parallel processing
### Which tools does your institution currently use, and which do you think will be used within five years?

<table>
<thead>
<tr>
<th>Tool</th>
<th>Use now</th>
<th>Within five years</th>
<th>Don’t know/Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blogs</td>
<td>44</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Wikis</td>
<td>41</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Mashups</td>
<td>10</td>
<td>25</td>
<td>66</td>
</tr>
<tr>
<td>Video podcasts</td>
<td></td>
<td>53</td>
<td>32</td>
</tr>
<tr>
<td>Online courses</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Social networks</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Text messaging/notifications</td>
<td>56</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td>Collaboration software</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Document management</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>RFID/sensor networks</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Mobile broadband</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>13</td>
<td>6</td>
<td>81</td>
</tr>
</tbody>
</table>
New Challenges

- **Quality** and **reliability** of information and resources
- Responsibility and awareness of **security** and **privacy** issues
- **Ethical** questions, e.g. [http://www.ratemyprofessors.com/](http://www.ratemyprofessors.com/), and cyberbullying
- Need for **new skills** both for learners and teachers
In what ways do new technologies pose the greatest challenges and risks to colleges and universities? Select up to three.

(%) of respondents

Potential increase in student plagiarism

Potential increase in student plagiarism
VeriGuide

- **Similarity text** detection system
- Developed at CUHK
- Promote and uphold academic honesty, integrity, and quality
- Support **English**, **Traditional** and **Simplified Chinese**
- Handle `.doc`, `.txt`, `.pdf`, `.html`, etc. file formats
- Generate detailed **originality report** including readability
Conclusions

- New availability of resources for learning
- New learner empowerment and networks
- New participation in learning processes
Conclusions

• **New availability of resources for learning**

  • Easy access to **free** information resources (dictionaries, encyclopaedia)

  • **New variety** of sources and resources

  • Education providers pressured to open up their resources to show their **quality**
Conclusions

• **New learner empowerment and networks**

• New empowerment in *choosing* the learning provider

• New means to *express* and show one’s skills

• Collaborative communities, new support for *informal* learning
Conclusion

• **New participation in learning processes**

  • Digital natives expect to use participative approaches

  • Learning tool developers are already integrating and developing participative tools to their products
Acknowledgments

• Prof. Jimmy Lee
• Mr. Patrick Lau
• Mr. Lam Cho Fung
• Mr. Simon Mok
• Mr. Ivan Yau
• Ms. Jessie Li (special thanks)

FREE 10-20-30 Trial

• 10 files submitted in a batch
• 20 originality reports
• 30 days of fully functional activated VeriGuide
• Use “ECS2009”