Benchmarking Web 2.0 Use

at the University of Oklahoma – Tulsa Campus

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Final Report to the
Amigos Fellowship Program
Benchmarking Web 2.0 Technology Use
at the University of Oklahoma – Tulsa Campus

Overview of Project

At the University of Oklahoma-Tulsa Library, we suspect that a majority of our potential patron base does not use the library's electronic resources regularly, and many may not even be aware that they are available. Previous education efforts have centered on introducing users to the library web site, how to access it, and how to use the resources that they find there. With the emergence of Web 2.0 technologies (often referred to as social media or social software, including social networking sites, tags, instant messaging, blogs, and wikis), the library has a new opportunity to invite our patrons to engage more directly with us. Because the library is interested in deploying social media toward this end, we wanted to determine how our patrons—the faculty, staff, and students of OU-Tulsa—are using Web 2.0. Anecdotal reports suggest little interest and less use. However, knowing who is (and who isn't) using these technologies, rather than relying on our assumptions, should greatly improve our ability to serve our patrons.

Objectives

The chief purposes of this project were

- to help the library identify those segments of the campus population that are using social media,
- to determine to what degree they are using it,
- to identify interest in the use of library services that rely on social media,
- to identify ways of introducing appropriate social media as research tools to users on campus.

Defining Web 2.0

The media company O'Reilly and Associates first coined the term "Web 2.0" as a way to define a turning point in the life of the Internet. Whereas "Web 1.0" was characterized by one-way transmission of information from content providers to users,

new technologies now allow users not only to add value to existing provider content, but also to provide content themselves without barriers, permission, or programming skills. In addition to adding content, users can easily interact with other users to form communities through the online equivalent of social transactions (O'Reilly, 2005).

Social networking online takes place with the help of applications that are collectively called "social media." However, in addition to the purely social functions of these applications, people also use social media to facilitate their work. Hospital librarian Michele Kraft in her *Krafty Librarian* blog provides examples of libraries that use Web 2.0. For example, the Jenkins Law Library's home page includes a blog of library information as its central element; the Cleveland Clinic Health Sciences Libraries offer an external wiki for employees to use while off campus; Ebling Library provides 24,000 RSS feeds to health sciences journals for their patrons; the Health Sciences Library at SUNY-Stony Brook uses Delicious tags to point users to resources; and the Duke University Library helps its patrons use Connotea to collect citations and link to full text (Kraft, 2009).

Conference Report

I attended the Internet Librarian 2008 conference in Monterey, California, October 20-22, 2008, in order to learn about new kinds of social media, as well as how other libraries are using them for their patrons. This year's conference theme was *Beyond 2.0: User-focused Tools & Practices*, and concentrated on Web 2.0 tools and practices, web services, social media, and new platforms of social computing as means to enable libraries to interact with their patrons and communities in new ways.

Keynote speaker Howard Rheingold, author of the book *Smart Mobs*, discussed the Internet as both a participatory vehicle and a means of collective action. The participatory aspects of Web 2.0 come from the human propensity to form in groups, act cooperatively, and influence social forms. One of the positive implications of the participatory web is that it democratizes cultural change, taking it out of the hands of the "cultural elite." Anyone with a connection—wifi, cell phone, Internet—can participate in and even precipitate significant culture change. The new "technologies of cooperation" are easy to use, theoretically open to all, enable connections, are amenable to self-instruction, and leverage self-interest. They facilitate collective action through their low

cost and wide distribution. Rheingold discussed some of the problems that this kind of collective action has tackled, such as the crowdsourcing solutions provided by Amazon Mechanical Turk and Seti@Home, or the management of open software initiatives.

Internet researcher danah boyd's keynote address centered on the social aspects of social media, or how human behavior moves from face-to-face interaction into the virtual world. She pointed out that human beings cannot avoid being social, no matter where they are. For example, we all experience significant social interaction in the workplace. Because we cannot simply turn off our social functioning, our interactions follow us onto the Internet, where we are currently working out social norms that did not exist online until we invented them. She introduced the idea of *social proprioception*. We all have a sense of where all our body parts are without actively being aware of them, and know something about the identities and activities of our colleagues in the workplace even when we're not directly talking to them. They pass us in the hallway, we overhear conversations, we can read social cues by their tone of voice and manner of dress. Social media helps us to develop a sense of knowing in a peripheral way what is happening all around us online, and helps simulate a social environment in an electronic medium. We use tools such as micro-blogging (as on Twitter), status updates (as on Facebook), and blog comments to get a social sense of our online environment. Because our physical identities are invisible online, social media allows us to dress up our virtual identities so that we can know how to relate to each other.

Web 2.0 Use at the Conference

One valuable aspect of the conference was being able to see people comfortably using social media as a matter of course, as part of their normal day to day business. Many of the conference attendees actively recorded their participation through Twitter on their phones and PDAs. Conference attendees twittered and texted throughout the various presentations, not as a way of ignoring the presenters or merely passing the time, but to send out news of the presentations to their online followers. Other participants brought their laptops to use not only to Twitter but to blog in real time about the conference content. Some participants took photos or short videos of the presentation or the audience and uploaded this material on the spot. The meeting rooms were set up to allow for this activity. In the back of each presentation room, tables were set up with electrical outlets

and wifi nodes so that laptop users could comfortably set up their equipment, and these tables were generally full during the presentations. Many of the presenters showed their blogs or Twitter feeds as part of their presentation, and some even showed the comments about the presentation that conference bloggers were making in real time. There was active use of web documents as presentation material. Presenters used Google Docs, Zoho, and Slideshare to show presentation content and also gave the attendees the urls of the content for future reference.

The use of social media was not limited to conference hours. For example, one group of librarians ate dinner one evening in a restaurant discovered on Chowhound, a site devoted to user-contributed reviews of restaurants all over the U.S. One of the librarians then blogged the experience and posted photos of the meal on her Flickr account.

Research on Web 2.0 Use on the OU-Tulsa Campus

A research study was conducted to determine who was using social media on the OU-Tulsa campus, to what extent they were using it, and what attitudes and intentions campus users held toward the use of social media. The study included a survey asking about the extent of and interest in social media use on campus, focus groups concerning attitudes and intentions of campus users regarding social media, and interviews with social media users.

Survey

A survey was sent out to the population of the OU-Tulsa campus, which reached approximately 2100 faculty, staff, and students on campus. The survey questions were developed during the Summer 2008 semester, and an online survey using survey software was prepared. Fifteen different kinds of social media were chosen after an examination of current scholarly literature on Web 2.0 as well as from anecdotal reports gathered informally during library reference transactions with patrons. The survey included questions regarding the level of use of the fifteen kinds of social media, the usefulness of social media for research, and interest in training opportunities, and also included questions about respondents' campus role (whether they were faculty, staff, students, or medical residents); library use; and familiarity with library resources.

A pilot survey was administered during the Summer 2008 semester to about 10 participants to test the questions and to uncover any unanticipated problems with either the questions or the deployment method.

The survey was administered in the Fall 2008 semester during a two-week period via an email sent to the entire campus population through the campus-wide email system. The email contained a link to the web survey. After seven days, a reminder email containing a link to the survey was sent using the all-campus email address. At the end of the 2-week survey period, the survey closed, and survey results were analyzed.

Survey results

A total of 149 responses were received. Of those, 27 were faculty, 77 were students, 44 were staff, and 1 was a medical resident. While the non-response rate is relatively high, the number of respondents provides sufficient statistical power for subsequent tests.

Familiarity with social media applications

Respondents were asked what specific pieces of social software they used in any context (such as work, school, or research.)

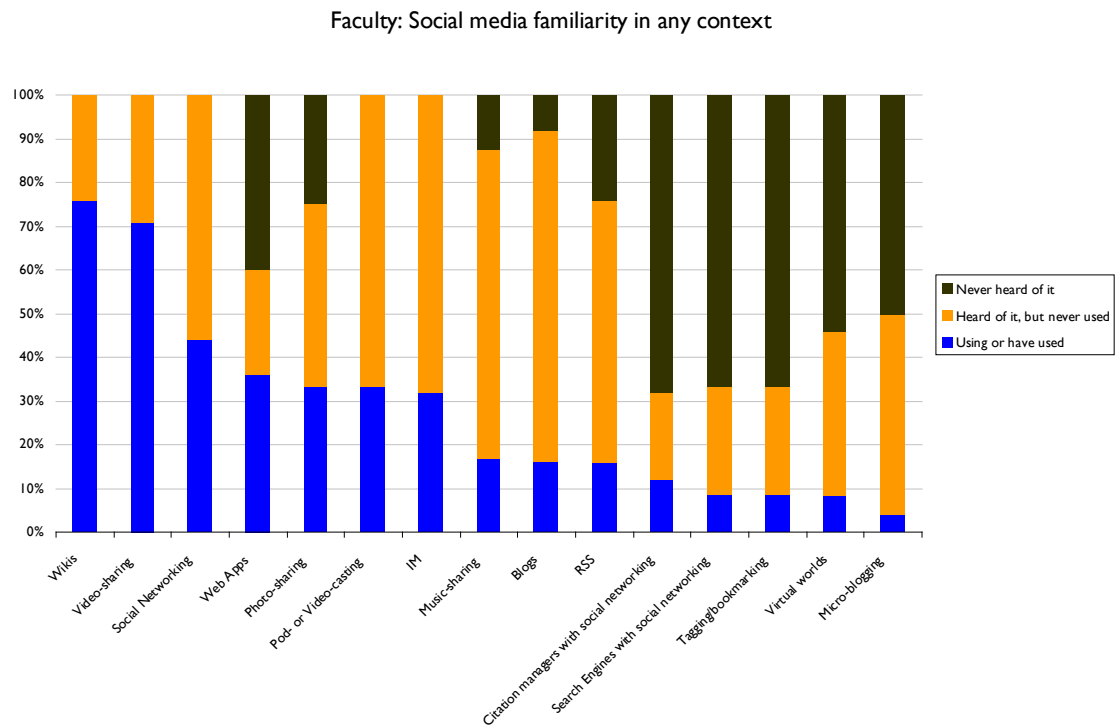All Respondents: Social media familiarity in any context
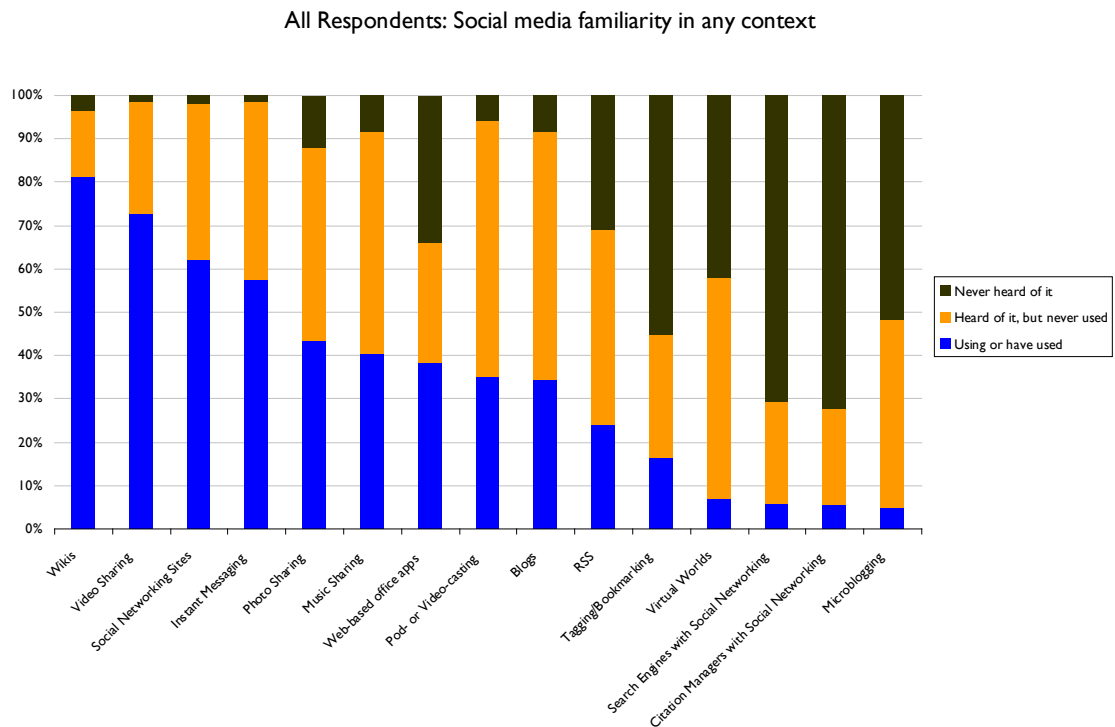
The three applications that respondents said they were familiar with in any context are (in descending order) were

    1. Wikis

    2. Video-sharing

    3. Social networking sites

The least familiar applications were

    13. Search engines with social networking

    14. Citation managers with social networking

    15. Micro-blogging

Faculty: Social media familiarity in any context
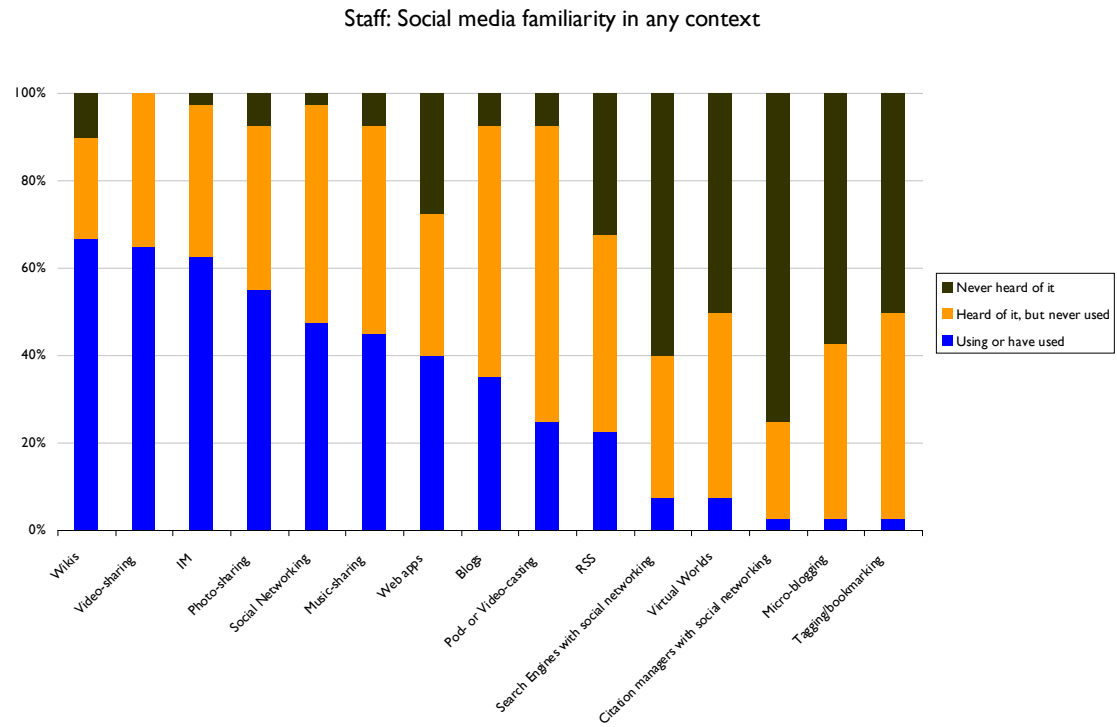

The three applications that faculty said they were familiar with in any context are (in descending order) were:

    1. Wikis

    2. Video sharing

    3. Social networking sites

The least familiar applications for faculty were:

    13. Tagging/bookmarking

    14. Virtual worlds

15. Micro-blogging

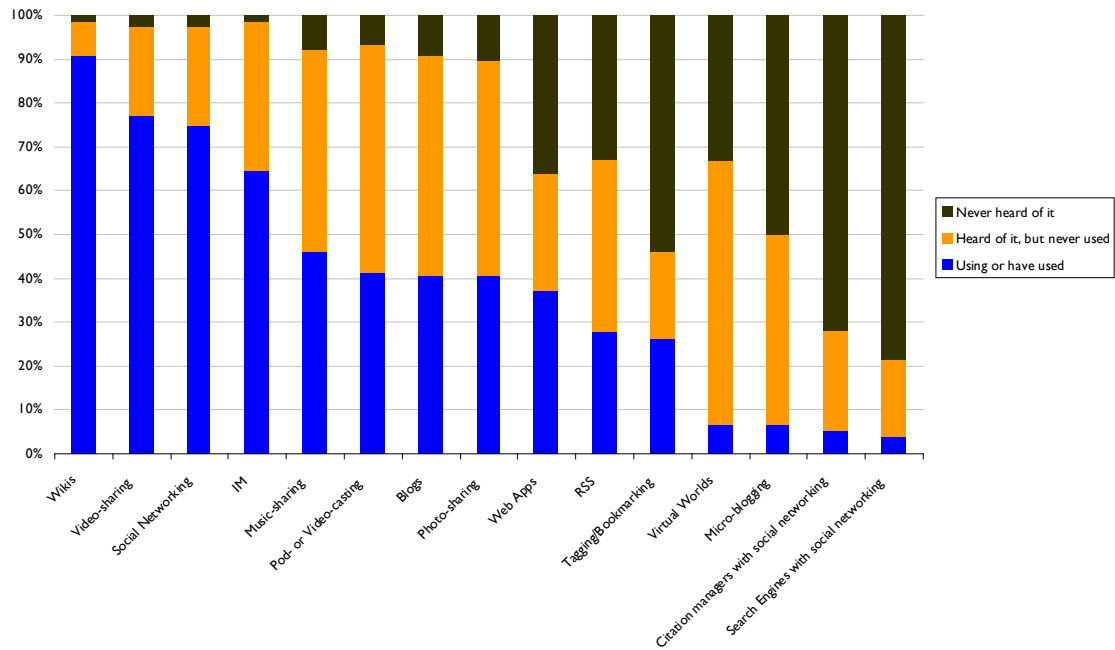Staff: Social media familiarity in any context

The three applications that staff said they were familiar with in any context are (in descending order) were:

1. Wikis
2. Video-sharing
3. Instant messaging

The least familiar applications were:

13. Citation managers with social networking
14. Micro-blogging
15. Tagging/bookmarking

Students: Social media familiarity in any context

The three applications that students said they were familiar with in any context are (in descending order) were:

1. Wikis
2. Video sharing
3. Social networking sites

The least familiar applications for students were

13. Micro-blogging
14. Citation managers with social networking
15. Search engines with social networking

Summary: Most familiar applications for respondents			
All	*Faculty*	*Staff*	*Students*
Wikis	Wikis	Wikis	Wikis
Video-sharing	Video sharing	Video-sharing	Video sharing
Social networking sites	Social networking sites	Instant messaging	Social networking sites
The least familiar applications			
All	*Faculty*	*Staff*	*Students*
Search engines with social networking	Tagging/book-marking	Citation managers with social networking	Micro-blogging
Citation managers with social networking	Virtual worlds	Micro-blogging	Citation managers with social networking
Micro-blogging	Micro-blogging	Tagging/book-marking	Search engines with social networking

Use of selected social media

The survey questions having to do with social media familiarity did not address the kind of use, i.e. whether the application was being used as an information source or whether the user contributed content. Therefore the survey included questions on some common social media and whether the user interacted with the application.

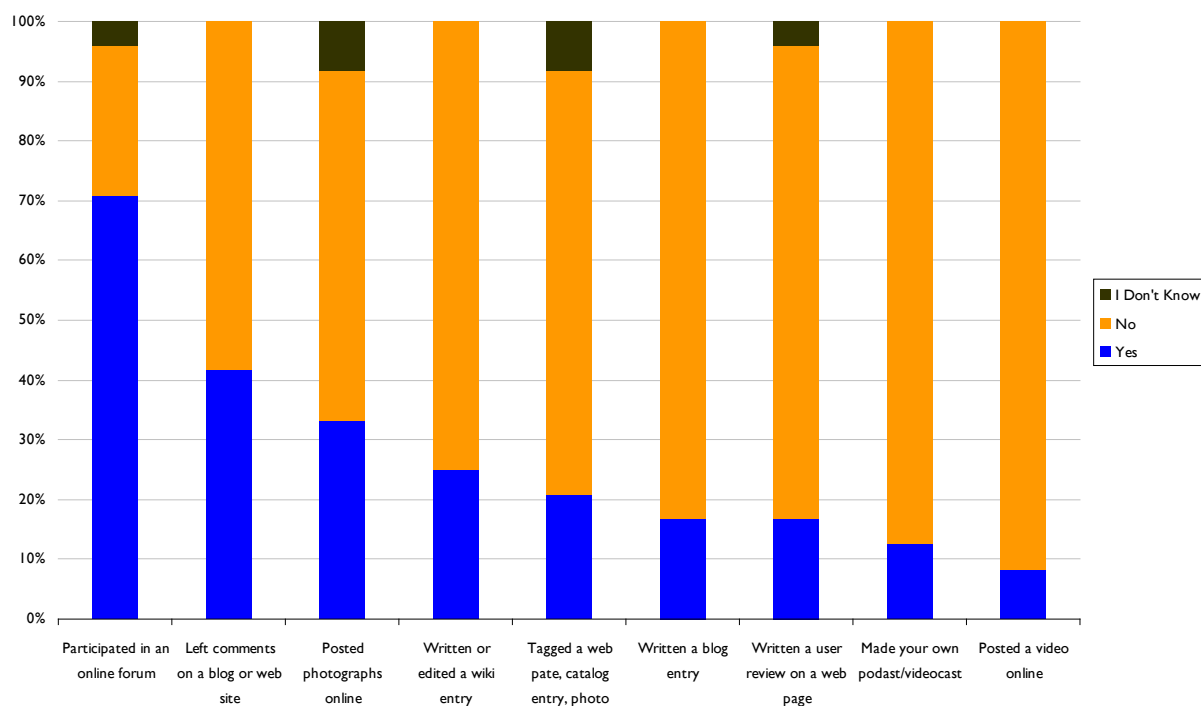All respondents: Use of selected social media
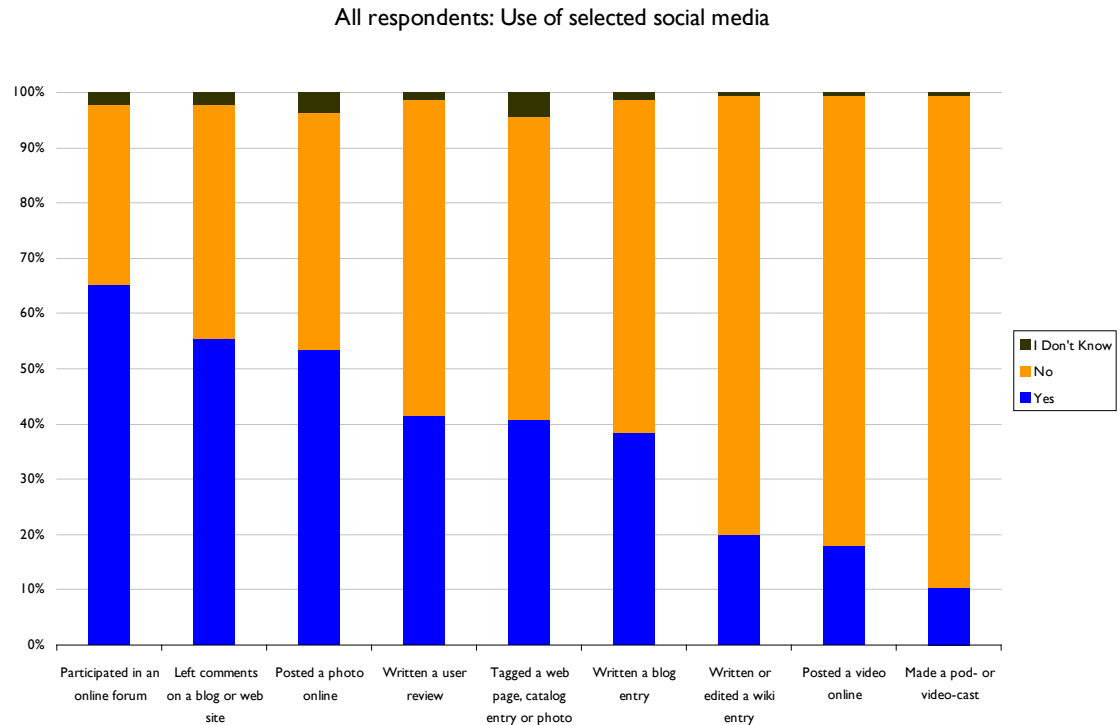
Respondents were asked about their use of selected social media. Respondents reported that they most often engaged in the following social media activities:

1. Participated in an online forum

2. Left comments on a blog or web site

3. Posted a photo online

Respondents reported that they least often engaged in the following activities:

7. Written or edited a wiki entry

8. Posted a video online

9. Made a podcast or videocast
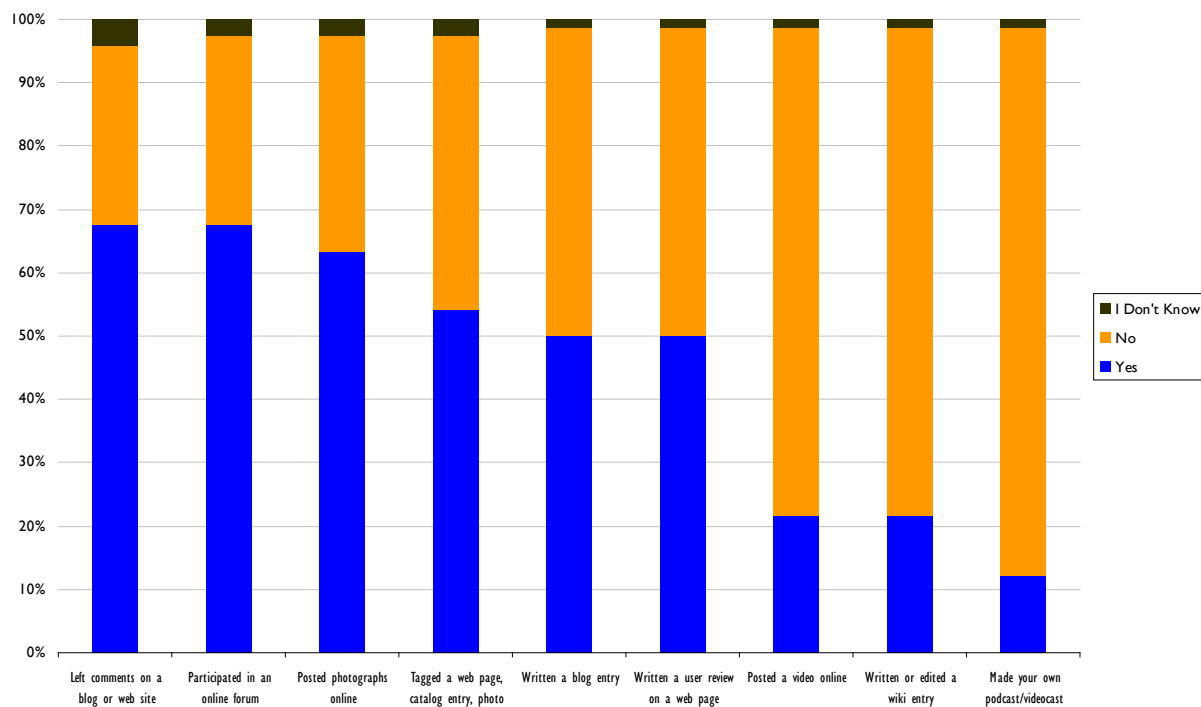
Faculty: Use of selected social media use

Faculty reported that they most often engaged in the following social media activities:

1. Participated in an online forum

2. Left comments on a blog or web site

3. Posted a photo online

Respondents reported that they engaged least in the following activities:

7. Written a user review on a web page

8. Made a podcast/videocast

9. Posted a video online
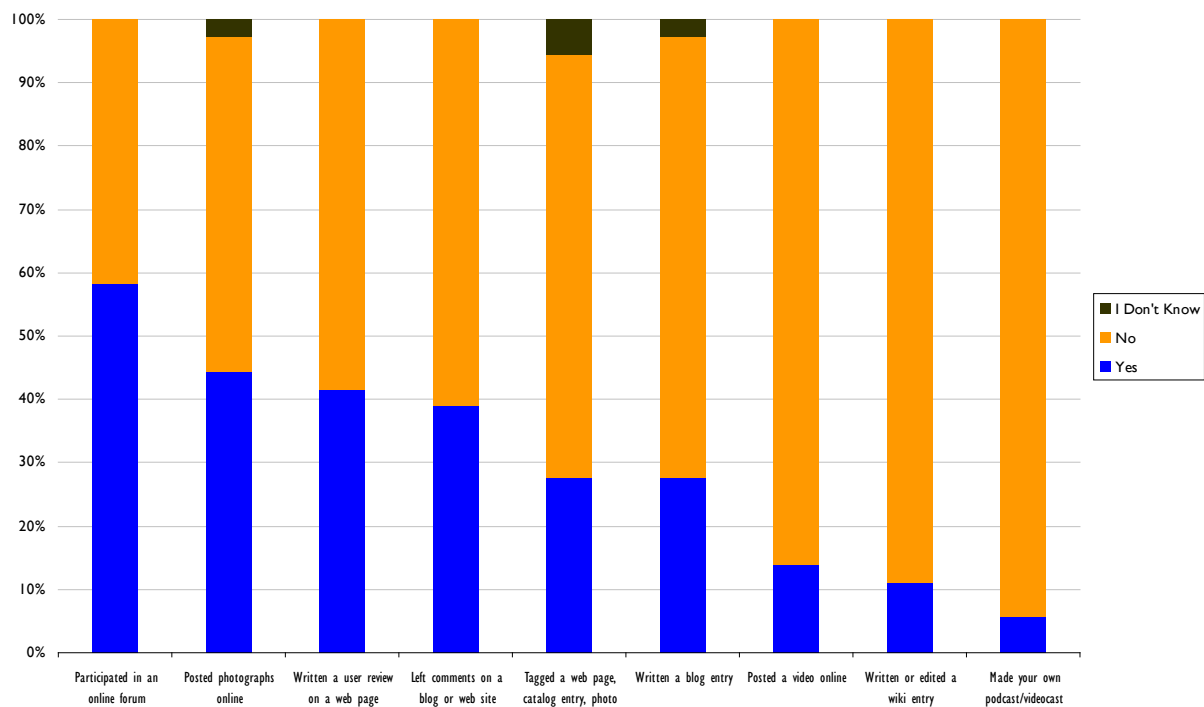
Students: Use of selected social media

Students reported that they most often engaged in the following social media activities:

1. Left comments on a blog or web site

2. Participated in an online forum

3. Posted a photograph online

Students reported that they engaged least in the following activities:

7. Posted a video online

8. Written or edited a wiki entry

9. Made a podcast/videocast

Staff: Use of selected social media

Staff reported that they most often engaged in the following social media activities:

       1. Participated in an online forum

       2. Posted photographs online

       3. Written a user review on a web page

Respondents reported that they engaged least in the following activities:

       7. Posted a video online

       8. Written or edited a wiki entry

       9. Made a podcast/videocast

Summary: Most used selected social media			
All	*Faculty*	*Staff*	*Students*
Participated in an online forum	Participated in an online forum	Participated in an online forum	Left comments on a blog or web site
Left comments on a blog or web site	Left comments on a blog or web site	Posted photographs online	Participated in an online forum
Posted a photo online	Posted a photo online	Written a user review on a web page	Posted a photograph online
Least used selected social media			
All	*Faculty*	*Staff*	*Students*
Written or edited a wiki entry	Written a user review on a web page	Posted a video online	Posted a video online
Posted a video online	Made a podcast/videocast	Written or edited a wiki entry	Written or edited a wiki entry
Made a podcast or videocast	Posted a video online	Made a podcast/videocast	Made a podcast/videocast

Usefulness for research
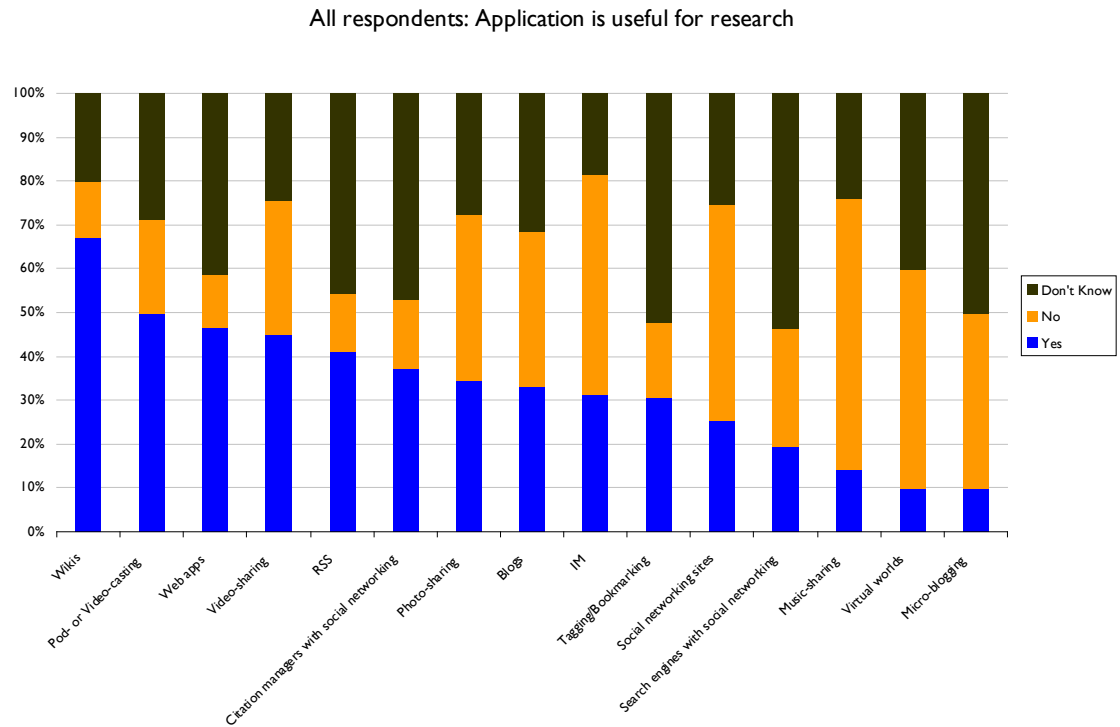
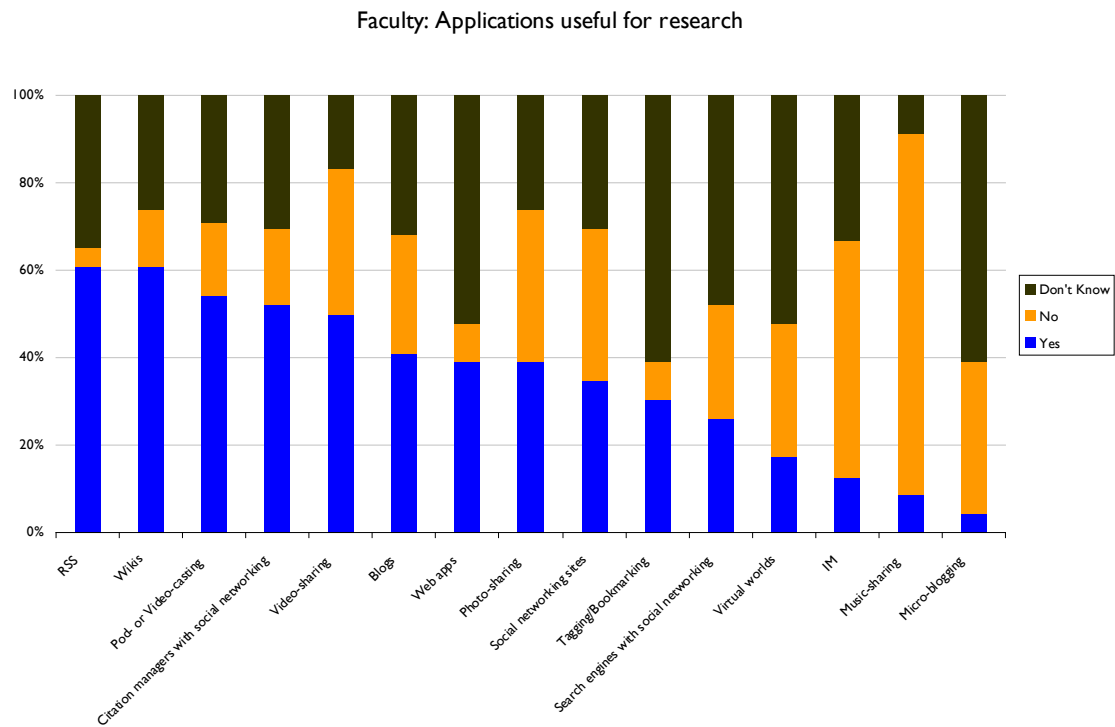All respondents: Application is useful for research

Users were asked whether or not they considered particular Web 2.0 applications useful for their research. The top three applications for all respondents were:

1. Wikis
2. Pod or video-casting
3. Web applications such as Google Docs

The three applications considered the least useful were:

13. Music-sharing
14. Virtual worlds
15. Micro-blogging

Faculty: Applications useful for research

Faculty who answered the question whether or not they considered particular Web 2.0 applications useful for their research gave their top three answers as:

1. RSS
2. Wikis
3. Pod- or video-casting

The three applications that faculty considered the least useful were

13. IM
14. Music-sharing
15. Micro-blogging

Students: Applications useful for research

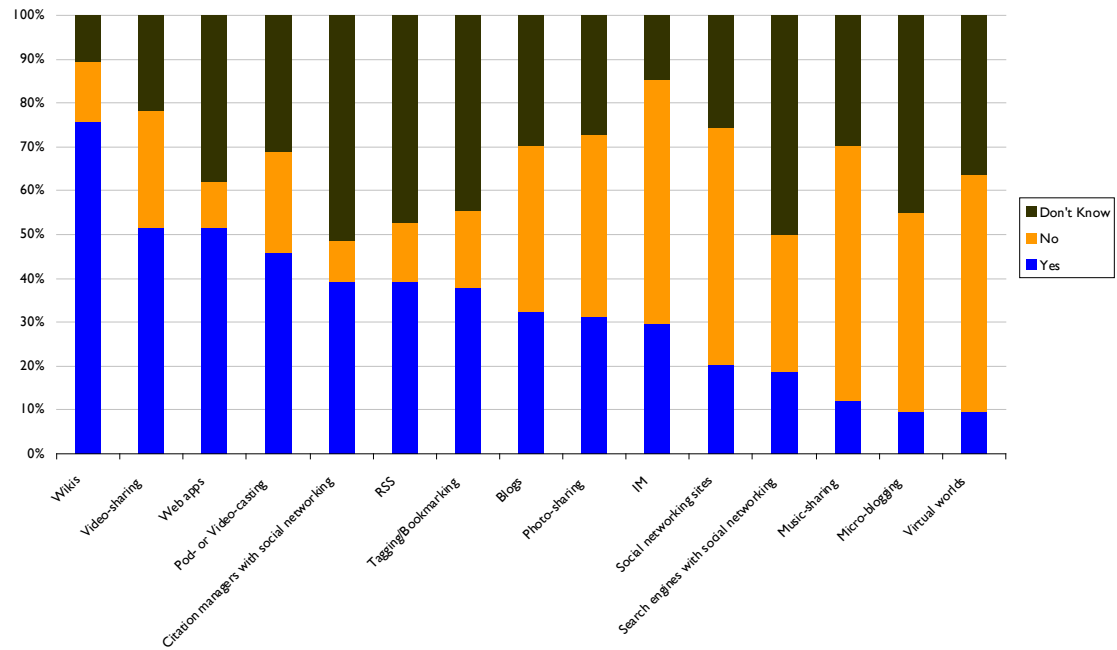Students who answered the question whether or not they considered particular Web 2.0 applications useful for their research gave their top three answers as:

1. Wikis
2. Video-sharing
3. Web applications such as Google Docs

The three applications that students considered the least useful were:

13. Music-sharing
14. Micro-blogging
15. Virtual worlds

Staff: Applications useful for research
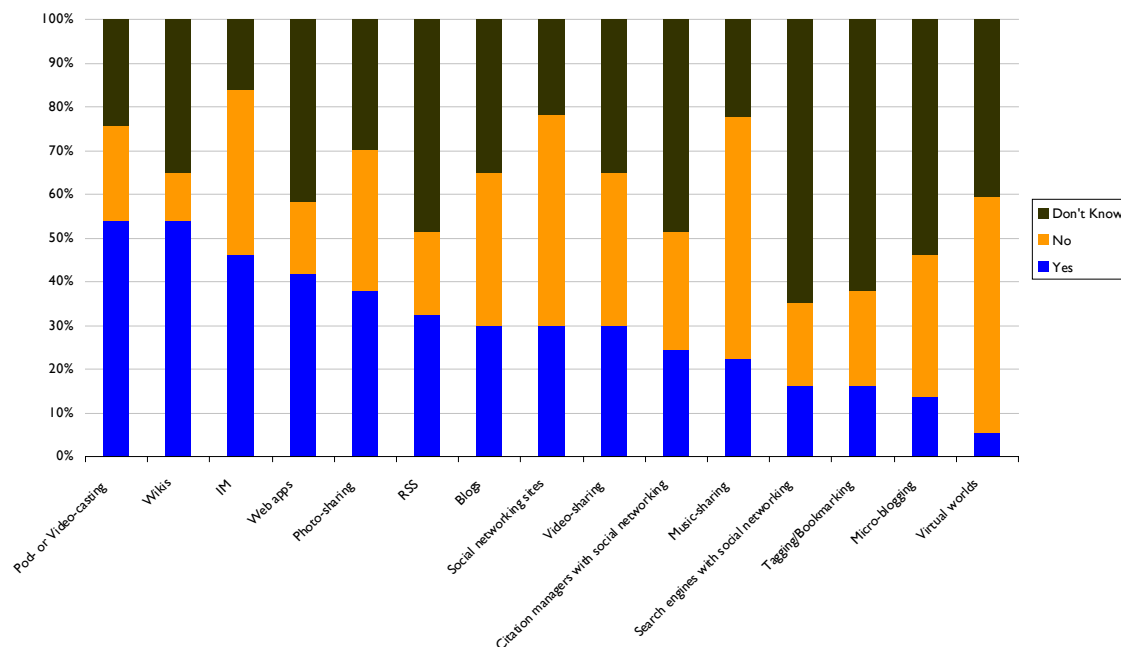

Staff who answered the question whether or not they considered particular Web 2.0 applications useful for their research gave their top three answers as:

1. Pod-/Video-casting
2. Wikis
3. IM

The three applications that staff considered the least useful were:

13. Tagging/Bookmarking
14. Micro-blogging
15. Virtual worlds

Summary: Most useful for research			
All	_Faculty_	_Staff_	_Students_
Wikis	RSS	Pod or Video-casting	Wikis
Pod or Video-casting	Wikis	Wikis	Video-Sharing
Web applications such as Google Docs	Pod- or Video-casting	Web applications such as Google Docs	Web applications such as Google Docs
The least useful for research			
All	_Faculty_	_Staff_	_Students_
Music-sharing	IM	Tagging/Book-marking	Music-Sharing
Virtual worlds	Music-Sharing	Micro-Blogging	Micro-Blogging
Micro-blogging	Micro-blogging	Virtual worlds	Virtual worlds

Training

All respondents: Interested in training for applications
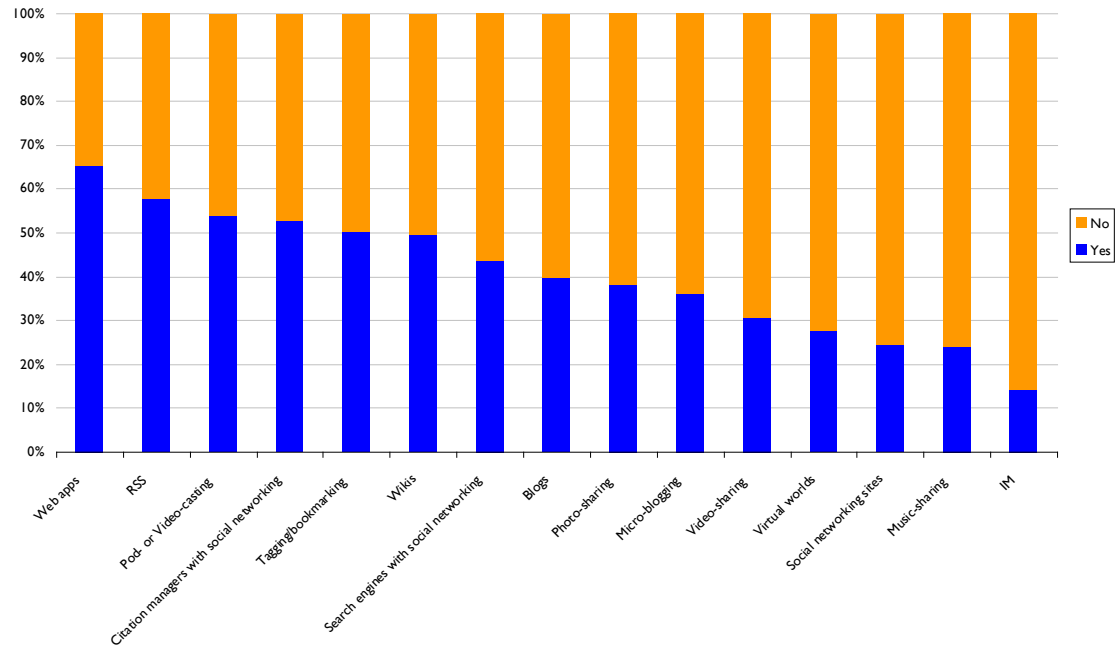
Users were asked whether or not they would be interested in training for Web 2.0 applications. The top three applications for which all respondents were interested in training were:

1. Web applications such as Google Docs
2. RSS
3. Pod- or video-casting

The three applications for which users least wanted training were:

13. Social networking sites

14. Music-sharing

15. IM

Faculty: Interested in training for applications
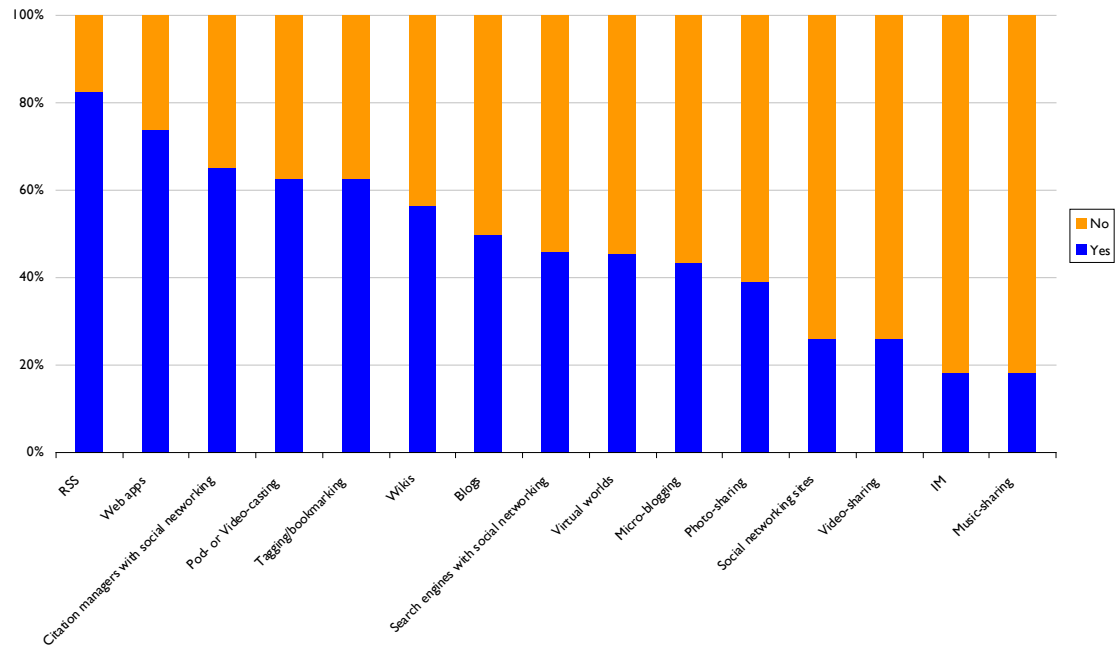
Faculty who answered the question whether or not they wanted training on particular Web 2.0 applications gave their top three answers as:

1. RSS
2. Web applications such as Google Docs
3. Citation managers with social networking

The three applications for which faculty least wanted training were:

13. Video-sharing

14. IM

15. Music-sharing

Staff: Interested in training for applications

Staff who answered the question whether or not they wanted training on particular Web 2.0 applications gave their top three answers as:

1. Web applications such as Google Docs
2. Wikis
3. Tagging/bookmarking

The three applications for which staff least wanted training were:

13. Music-sharing

14. IM

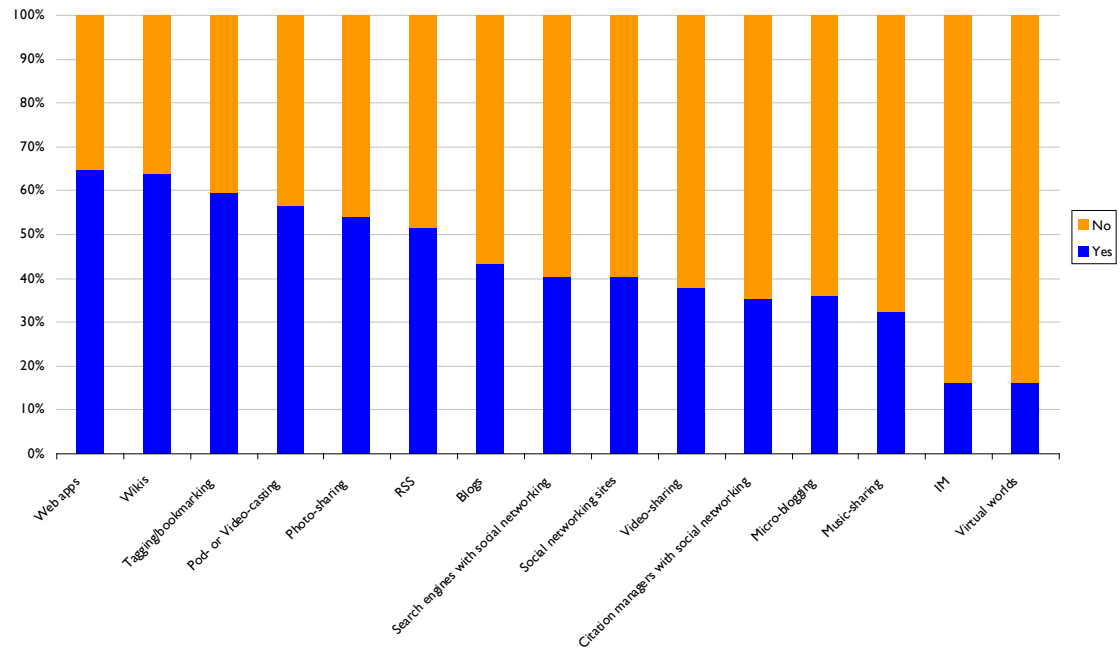15. Virtual worlds

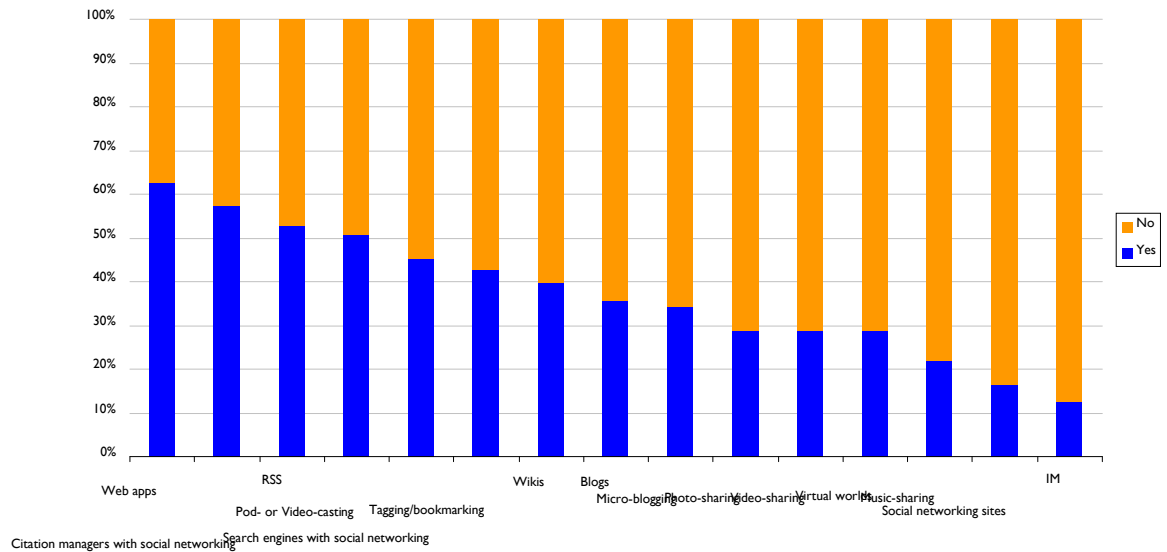Students: Interested in training for applications

Students who answered the question whether or not they wanted training on particular Web 2.0 applications gave their top three answers as:

1. Web applications such as Google Docs
2. Citation managers with social networking
3. RSS feeds

The three applications for which students least wanted training were:

13. Music-sharing

14. Social networking sites

15. IM

Summary: Interested in training			
All	*Faculty*	*Staff*	*Students*
Web applications such as Google Docs	RSS	Web applications such as Google Docs	Web applications such as Google Docs
RSS	Web Applications such as Google Docs	Wikis	Citation managers with social networking
Pod- or Video-casting	Citation managers with social networking	Tagging/Book-marking	RSS feeds
Least interested in training			
All	*Faculty*	*Staff*	*Students*
Social networking sites	Video-sharing	Music-sharing	Music-sharing
Music-sharing	IM	IM	Social networking sites
IM	Music-sharing	Virtual worlds	IM

Survey observations

The survey results seem to indicate that familiarity with social media is not the same thing as using social media for anything more than an information source. For example, over 80% of all survey respondents reported that they used wikis, but only 20% reported that they had actually written or edited a wiki entry.

Focus Groups

Three focus groups were held to discover attitudes and intentions about the use of social software in a library setting. Three graduate students from the Center of Applied Research on the OU-Tulsa campus assisted in leading the first two focus groups. A librarian and two library colleagues led the third focus group. Results were recorded as written notes. Participants for two of the three focus groups were recruited through a request at the end of the online survey. Members of the third focus group were recruited via campus-wide email. Incentive payments of $20 per participant and refreshments were offered to focus group participants.

Results

The three focus groups included twenty-nine participants. Many participants said that they maintained their own blogs, used instant messaging, used wikis (not limited to Wikipedia) and YouTube often, were heavy Facebook and MySpace users, and made use of Google Docs and Skype.

Nearly all participants reported using social networking applications a great deal in various contexts, but many did not have names or labels for these kinds of applications (whether it was Web 2.0, social media, or something else.) Participants thought that there might be a generation gap in the use of Web 2.0 applications. Several expressed the opinion that younger users did so with relative ease and without making any special differentiation between these applications and other uses of the Internet, whereas older participants were seen as being not quite as comfortable with Web 2.0 applications. Some older participants, however, reported heavy social media use and did not think this generalization was accurate.

Some participants indicated concern about posting their own work publicly, and expressed fear that their ideas might be used by others without permission, or that they might suffer loss of credibility among their peers. Also many participants were concerned about privacy issues and would not post personal information, images, or opinions on the web at all, or did so only using a pseudonym.

One similarity among participants in all three focus groups is that they report using many of these applications non-interactively. For users, Web 2.0 only had a communication function and did not serve as production method. For example, they often watched videos on YouTube but did not respond to them online in any way and did not create new web content in response to what they had seen. In essence they were using Web 2.0 applications in the same way that they had used Web 1.0 applications, in one direction only. This use of social media appeared to be common especially when it came time to start a research project. Participants freely used Wikipedia as well as YouTube to introduce themselves to an unfamiliar topic, but would generate no new web content in response.

Another theme that emerged from the discussion was dissatisfaction with the distance learning opportunities in which many of the participants engaged at OU-Tulsa.

Students on our campus frequently participate in courses in which a professor at one of the other OU campus (Norman or Oklahoma City) holds class with live students at their end, while Tulsa students attend via a video connection. Participants expressed frustration with the fact that the students at the other end, who had the professor in the classroom with them, had an advantage over students in Tulsa, who had only the video screen to interact with. In two of the focus groups, participants said that it was especially in these distance learning contexts that they wanted more sense of human presence, which might be provided by social media. Examples were given of instances in which leveraging social media led to more positive class experiences, such as having photos or avatars of the other students in the class available to all class members. However, in a third group, participants claimed that having to learn to use social media as an adjunct to the online classroom (either through video or through a course management system) would be a burden. These participants stated that they had little or no interest in learning details of their classmates' personal lives through social media, even if the effort was intended to improve their online classroom experience. There was a sense among participants that social media was something else that they would have to learn to use and that the time commitment they demanded was not reasonable.

Several participants in two of the focus groups voiced the opinion that the library could serve as a social networking technology hub of campus, especially for distance learning students. Participants suggested several ways in which the library could serve as such as hub, including offering a central point for hosting blogs for campus users and providing ways to share research or campus news. In fact, a few participants even suggested that they did not necessarily need the help with their research, but would welcome the library as a coordinator of at least some kinds of social media activity. These tools could be used for research purposes, such as group projects for online classes.

User Studies

Three users were individually interviewed on their use of social media. Users were selected by a question at the beginning of each focus group requesting user study volunteers. Four focus group participants volunteered. Of those four, three participants indicated that they used several social media applications regularly and one participant

indicated only light social media use, none on a regular basis. Therefore, the three active users of social media were chosen for the user studies.

Each subject was interviewed separately by the primary investigator. The original intent of the interviews was to observe and record the subjects' behavior as they used both social software and library resources. However, this was eliminated for two reasons. First, one subject expressed privacy and confidentiality concerns about online behaviors, and did not wish to be observed using some social media applications. Second, while all subjects demonstrated the use of some of the Web 2.0 applications they used, they preferred to spend most of the interview time in a question and answer session between the interviewer and the subject. The questions covered intentions and attitudes as the subjects used social media and library resources.

All three subjects were moderate to heavy users of social media, and each reported efforts to keep work-related and personal use of social media separate. The only applications that all subjects reported never using were micro-blogging applications such as Twitter and social-networking citation managers such as Connotea or CiteULike. Two of the applications (photo-sharing, virtual worlds) were used only for personal use by subjects. Several of the applications (social networking sites such as Facebook, MySpace, or Linked-In, YouTube, instant messaging, podcasts, and blogs) were used strictly on a personal basis by one or two subjects but also for work-related use by at least one other subject.

Frequency of use of these applications ranged from heavy to moderate. Heavy use of Facebook was reported by one subject as a means of connecting to friends and colleagues, including students at OU-Tulsa in the subject's academic program. Linked-In was another social networking site that was used occasionally to update a subject's credentials.

Concern was expressed about security and privacy issues in using social media. One subject said that undesirable contacts had been made through blog postings, until the subject turned off comment capability in a work-related blog. Microsoft SharePoint was used by one subject as an alternative to social media, allowing the subject to interact with workplace colleagues and add content to an internal network without having to worry about security issues. There were also concerns that publication of work on the Internet

might affect workplace advancement. For example, if a document is disseminated on the Internet before it is published in a conventional academic publication, this "pre-publication" might have repercussions in future tenure and promotion decisions. One subject, who used Wikipedia heavily as a reader but not as a contributor, noted the intention to add and edit Wikipedia entries relating to the subject's research interests once the research had been completed and published elsewhere first.

Much social media use was limited to reading or viewing the application rather than contributing to it. One subject had in the past contributed to a discipline-specific question and answer online forum, but no longer did so. Although all subjects maintained their own blogs, they updated them infrequently. Apart from activity on social networking sites (ranging from very heavy to light use) many Web 2.0 applications were seen as reference or entertainment resources. These include Wikipedia, videos, and the blogs of others.

All subjects mentioned that the time commitment for using social media was a problem in one way or another. One subject noted that chatting through instant messaging in particular did take up a large amount of time that could have been spent on what might be considered more productive activities. Another subject said that day-to-day workload and career pressures made it difficult to pursue social media activities, even when there was interest in doing so.

Web 2.0 applications were seen as a means of disseminating already existing information sources to others. There was interest in many of these applications only insofar as they applied to the subject's main area of research interest, or as topics of current interest that the subject disseminated to students (as part of a class assignment), friends, or colleagues. One subject introduced students to social media applications deliberately as part of coursework, but did not think that students were necessarily embracing these applications. Two of the subjects disseminated information regularly to friends, students, and colleagues, and appeared to consider the chief value of some social media to be the media's ability to get information from an existing source out to many people as quickly as possible. The most common application for this purpose was Facebook, and one subject invested a lot of effort in using Facebook, YouTube, and IM for this purpose.

The cell phone was seen by one subject as an important aid to social media use. This subject used cell phone applications such as instant messaging heavily in order to communicate with friends.

One subject was a heavy user of a virtual world application and spent significant amounts of time in a non-work context engaging in a virtual world. The subject pointed out that the virtual world included features similar to those of many social media applications such as instant messaging and chat and the ability to respond to other users of the virtual world. Because most of the activity in this particular virtual world was group oriented, the features tended to increase the ability of participants to project their own selves (or at least the persona that they were projecting in that environment); to get a sense of the personas of other players; and to facilitate group action, usually in pursuit of a collective activity, such as "raiding" or engaging in virtual trade.

Problems

It was discovered from the focus groups that the term "Web 2.0," which we used in our recruiting materials, was not well-known among our population. We suspected that potential survey takers might have been hesitant to take a survey about something that they could not identify or were unfamiliar with.

Also, although we provided examples of the individual social media applications for the survey, we did not offer further explanation. This might have made a difference in survey responses. For example, Web 2.0 versions of citation managers, such as CiteULike and Connotea, were listed. These applications include a large social media component. However, it is possible that respondents might have assumed that this group of applications included EndNote, a bibliographic citation manager that does not have a strong social media component, and answered questions with EndNote in mind rather than the other applications. It was clear in the focus groups that our terminology might have been confusing. For example, most focus group participants were not familiar with the term "RSS feed" although they might have had subscriptions in a feed reader to a blog. So survey respondents might not have indicated the use of RSS feeds even when they did use them.

The survey did not define the roles of "faculty," "staff," "student," and "resident." While this is not particularly problematic for faculty, staff, or residents, it might be so for

staff. There was no way for respondents to identify themselves as staff with scholarly or research duties, or with some other kind of duty, such as managerial, clerical, or operational.

The fast pace of development in social media may also mean that participants could now have a different answer to some survey questions than they did when they took the survey. For example, Twitter has become widely publicized in the last several months. Respondents who may never have heard of micro-blogging six months ago may now be familiar with such applications and may even be using them regularly. Similarly, according to a March 28, 2009 report in a popular technology blog, *ReadWriteWeb*, Facebook users over the age of 35 have doubled in the previous sixty days (Lardinois, 2009). There is a possibility that users who reported that they did not use social networking sites when they took the survey may now be doing so.

Conclusions

The projects objectives were:

1. to help the library identify segments of the campus population using social media
2. to determine to what degree they are using it
3. to identify interest in the use of library services that rely on social media
4. to identify ways to introduce appropriate social media as research tools to users on campus.

The survey accomplished the first two objectives. A sufficient number of valid responses were received to be able to make generalizations about the use of social media by individuals on the OU-Tulsa campus. It is clear that people on campus are using social media in their day to day lives, both for work and for personal purposes, but it appears that many of these people are using social media as an additional source of information. Also, while some social media applications are familiar to many people and are frequently used (such as social networking sites and wikis), other potentially useful applications (such as RSS feeds) are not.

The third objective, to identify interest in the use of library services that rely on social media, was accomplished. The survey identified applications of interest to the users. The library can invest time and energy in developing these for campus use.

The fourth objective, to identify ways of introducing appropriate social media as research tools to users on campus, was partially accomplished. For example, the survey identified wikis as a familiar and frequently used application that the library could promote for campus use, and the focus groups confirmed that people were familiar with wikis and encountered no serious barriers in using them as information sources. However, other applications that could be considered useful for research, such as RSS feeds, were shown to be unfamiliar to most users. Even though they are potentially appropriate for campus research use, they might not be met with a high level of interest from campus users.

One of the most consistent findings of this study is that users on this campus do not maximize use of Web 2.0 applications to their full capacity. Users will employ social media in a non-work related context to forge social bonds (as in Facebook and MySpace) but do not use it to connect with colleagues in work-related situations, or to take advantage of the social media aspects of web-based applications to collaborate online. Rather, users appear to be using social media in work contexts as static sources of information. There appear to be several reasons for this, including users' concern for privacy and confidentiality, a perception that many social media applications require a large time commitment, and reluctance to add yet another thing to learn or do.

Recommendations

The library should build on existing successes. Social media applications already in widespread use, such as wikis, are already supported by the library's current training initiatives, and such initiatives should continue or be expanded.

The library can model the use of social media that is already being used, such as blogs and wikis, and can introduce other applications such as IM reference, as well as beginning to support the use of less familiar social media, such as RSS. It may be possible for the library to begin offering server space for social media. This would give students, faculty, study groups, and special campus projects a place to set up their own wikis, blogs, and podcasts. The library could configure such spaces so that users do not have the overhead of having to master the technology when their main concern is collaboration.

Because the professional literature indicates that social media have value in scholarly and research settings, the library should develop ways to expand the use of social media among campus users. In particular, the library should raise awareness of the "social" aspects of these applications. It should encourage campus users to use Web 2.0 tools for production, rather than as reference sources, demonstrating the advantage of social media as ways to collaborate with colleagues and students both on and off campus. Some of the privacy and confidentiality concerns that users have when using social media in personal contexts may be less problematic in work-related contexts, where the primary objective is not necessarily to form social bonds but to collaborate meaningfully across time and distance. Also some campus internet activity takes place in protected areas such as classroom management systems or intranets, which are not accessible to the internet at large. This consideration could mitigate some privacy and confidentiality concerns. The point of using social media in such a context would be to introduce a sense of social proprioception among users, for example among students involved in distance learning who may feel alienated by interacting with electronic media.

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Appendices

Appendix I.

Survey questions

Web 2.0 Application Use on the OU-Tulsa Campus

1. Which of the following BEST describes your role at the University of Oklahoma - Tulsa?
    Student
    Staff
    Faculty
    Resident

2. How comfortable are you with using on-line resources for your academic needs?

Very comfortable
Comfortable
Somewhat comfortable
Not comfortable

3. Have you ever physically visited the OU-Tulsa Library?

Yes
No

4. Have you visited the OU-Tulsa Library web site this semester (http://tulsa.ou.edu/library)?

Yes
No

5. Have you used any of the OU-Tulsa Library's electronic resources?

Yes
No
Don't Know

In this section of the survey, we ask questions about specific Web 2.0 applications, whether or not you have actually used them.

6. Please indicate your use of web-based social software in any context, whether for personal, work, or school use.

Choose one answer from the drop down list.

Blogs (e.g., Google Blogs, Blogger, Wordpress).
Using or have used
Heard of it, but never used it
Never heard of it

Citation managers with social networking (e.g., CiteULike, Connotea).
Using or have used
Heard of it, but never used it
Never heard of it

Instant Messaging (e.g., AOL, MSN, Meebo).
Using or have used
Heard of it, but never used it
Never heard of it

Micro-blogging (e.g., Twitter).
Using or have used
Heard of it, but never used it
Never heard of it

Music-sharing (e.g., Napster, Odeo, Pandora).
Using or have used
Heard of it, but never used it
Never heard of it

Photo-sharing (e.g., Flickr).
Using or have used
Heard of it, but never used it
Never heard of it

Podcasting/Video podcasting.
Using or have used
Heard of it, but never used it
Never heard of it

RSS readers (e.g., Google Reader, Bloglines).
Using or have used
Heard of it, but never used it
Never heard of it

Search engines with social networking (e.g., Rollyo, Squidoo, Wink).
Using or have used
Heard of it, but never used it
Never heard of it

Social networking sites (e.g., Facebook, MySpace, LinkedIn).
Using or have used
Heard of it, but never used it
Never heard of it

Tagging & bookmarking (e.g., Delicious, StumbleUpon, Digg, Reddit, Magnolia).
Using or have used
Heard of it, but never used it
Never heard of it

Video-sharing (e.g., YouTube).
Using or have used
Heard of it, but never used it
Never heard of it

Virtual worlds (e.g., Second Life, World of Warcraft).
Using or have used
Heard of it, but never used it
Never heard of it

Web-based office applications (e.g., Google Docs, Zoho).
Using or have used
Heard of it, but never used it
Never heard of it

Wikis (Wikipedia, Wetpaint, PBWiki).
Using or have used
Heard of it, but never used it
Never heard of it

7. Do you think you might find any of these applications useful to your research needs?

Choose one answer from the dropdown list.

Blogs (e.g., Google Blogs, Blogger, Wordpress).
Yes
No
Don't Know

Citation managers with social networking (e.g., CiteULike, Connotea).
Yes
No
Don't Know

Instant Messaging (e.g., AOL, MSN, Meebo).
Yes

No
Don't Know

Micro-blogging (e.g., Twitter).
Yes
No
Don't Know

Music-sharing (e.g., Napster, Odeo, Pandora).
Yes
No
Don't Know

Photo-sharing (e.g., Flickr).
Yes
No
Don't Know

Podcasting/Video podcasting.
Yes
No
Don't Know

RSS readers (e.g., Google Reader, Bloglines).
Yes
No
Don't Know

Search engines with social networking (e.g., Rollyo, Squidoo, Wink).
Yes
No
Don't Know

Social networking sites (e.g., Facebook, MySpace, LinkedIn).
Yes
No
Don't Know

Tagging & bookmarking (e.g., Delicious, StumbleUpon, Digg, Reddit, Magnolia).
Yes
No
Don't Know

Video-sharing (e.g., YouTube).
Yes
No

Don't Know

Virtual worlds (e.g., Second Life, World of Warcraft).
Yes
No
Don't Know

Web-based office applications (e.g., Google Docs, Zoho).
Yes
No
Don't Know

Wikis (Wikipedia, Wetpaint, PBWiki).
Yes
No
Don't Know

8. Would you be interested in attending a training session on the following?

Choose one answer from the dropdown list.

Blogs (e.g., Google Blogs, Blogger, Wordpress).
No
Yes
Citation managers with social networking (e.g., CiteULike, Connotea).
No
Yes

Instant Messaging (e.g., AOL, MSN, Meebo).
No
Yes

Micro-blogging (e.g., Twitter).
No
Yes

Music-sharing (e.g., Napster, Odeo, Pandora).
No
Yes

Photo-sharing (e.g., Flickr).
No
Yes

Podcasting/Video podcasting.
No

Yes

RSS readers (e.g., Google Reader, Bloglines).
No
Yes

Search engines with social networking (e.g., Rollyo, Squidoo, Wink).
No
Yes

Social networking sites(e.g., Facebook, MySpace, LinkedIn).
No
Yes

Tagging & bookmarking (e.g., Delicious, StumbleUpon, Digg, Reddit, Magnolia).
No
Yes

Video-sharing (e.g., YouTube).
No
Yes

Virtual worlds (e.g., Second Life, World of Warcraft).
No
Yes

Web-based office applications (e.g., Google Docs, Zoho).
No
Yes

Wikis (Wikipedia, Wetpaint, PBWiki).
No
Yes

9. Have you engaged in any of the following?

Choose one answer from the dropdown list.

Left comments on a blog or web site.
No
Yes
Don't Know

Made your own podcast/videocast.
No
Yes

Don't Know

Participated in an online forum.
No
Yes
Don't Know

Posted a video online.
No
Yes
Don't Know

Posted photographs online.
No
Yes
Don't Know

Tagged a web page, catalog entry, photo.
No
Yes
Don't Know

Written a blog entry.
No
Yes
Don't Know

Written a user review on a web page.
No
Yes
Don't Know

Written or edited a wiki entry.
No
Yes
Don't Know

Appendix II.

Focus Group questions

Outline of proposed discussion follows:

1) Consent form discussion
2) Explanation of purpose and process
3) Ice breaker. Brief introductions by both facilitator and participants
4) Questions about library use in general, especially online resources
    i) Do you have any particular opinion about the OU-Tulsa Library? About the website? About any library services you can access online?
5) Questions about internet use in general
    i) Attitudes toward internet use – do you find internet resources helpful or frustrating?
    ii) Do you consider yourself to be early or late adopters of technology?
    iii) Do you enjoy social networking online?
    iv) How much time do you spend on social networking?
    v) How do you deal with Web 2.0 requests for personal information?
    vi) What kind of internet use for personal and recreational versus professional and school-related functions?
    vii) What application in particular have you found particularly useful? Particularly frustrating?
    viii) What would be the ideal internet application, regardless of context?
    ix) What prevents you from using these applications?
6) Questions about the library and Web 2.0 applications
    i) Can you envision any internet applications that might be particularly useful when you use the library?
    ii) What do you think about the library's presence in social networking contexts?
7) Questions based on survey results (to be determined).

Appendix III.

User study questions

Observer: We are interested in your use of certain internet applications as they related to your work and your use of the OU-Tulsa Library.

Type of application	Example	What we want to observe
Social networking software	Facebook, MySpace, or LinkedIn	Do you use social networking software to connect with colleagues or to do any work related to your schoolwork? (i.e. search for articles, find useful resources) If so, can you show me and example?
Tagging and bookmarking software,	Delicious, StumbleUpon, Digg, Reddit, Magnolia	How do you go about saving information that you find on the internet? Can you show me how you do this?
Alternative search engines	Rollyo, Squidoo, Wink	What search engines do you use to find information? Can you show me how you do this?
Web-based office applications	Google Docs or Zoho	Do you ever use any web-based applications for your work? Can you show me an example?
Citation managers,	CitULike or Connotea	Do you use a social citation manager? If so, can you show me how you do this?
Wikis	Wikipedia, Wetpaint or PBWiki	Do you ever use wikis? Can you show me an example?
Virtual worlds	Second Life or World of Warcraft	Do you participate in virtual worlds? If so, do you ever use them for any reason other than social participation, such as a work or school related activity? If so, can you show me an example?
Photo-sharing software	Flickr, Picasa	Do you save work-related images on the web? If so, can you show me an example?
Video-sharing software	YouTube	Do you ever watch work-related videos on the web? If so, can you show me an example?
Music-sharing software,	Napster, Odeo, Pandora	Do you ever use music sharing in a work or library context?
messaging,	AOL or Meebo, phone messagine	Do you ever use instant messaging or phone messaging for work or school? If so, can you provide an example?
RSS readers,	Bloglines Wordpress, or Blogger	Do you monitor RSS feeds for a work or school-related purpose? Can you show me an example?

Podcasting		Do you create or listen to podcasts or video podcasts for a work or school-related purpose? Can you show me an example?
Blogs		Do you contribute to or read blogs for a work or school-related purpose? Can you show an example?
Recreational applications	Geni, GoodReads, LibraryThing	Do you consult any other application on the internet for a work- or school-related purpose? Can you show me?