Interactions between English-Speaking and Chinese-Speaking Users and Librarians on Social Networking Sites

Samuel Kai-Wah Chu

Division of Information and Technology Studies, Faculty of Education, The University of Hong Kong, Pokfulam Road, Hong Kong E-mail: samchu@hkucc.hku.hk

http://web.edu.hku.hk/staff/academic/samchu

Hong Huang

School of Information, University of South Florida, 4202 E. Fowler Ave, Tampa, Florida, 33620-7800.

E-mail: honghuang@usf.edu

http://honghuang.myweb.usf.edu/research.htm

How Social Networking Tools can Help Attract Library Users

- 1. Background
- Literature Review
- 3. Research Methodology
- 4. Findings & Results
- 5. Discussion
- 6. Conclusion

- An increasing number of libraries have been adopting SNS in the recent years.
 - In a 2009 survey, researchers found that only a few academic libraries adopted SNS (Xu, Ouyang, & Chu, 2009)
 - Two years later, a literature review concluded that Facebook and Twitter had become popular Web 2.0 applications in libraries (Mahmood and Richardson, 2011)

 Users are unenthusiastic about the use of SNSs to enhance and encourage interaction for educational purposes.

(Coyle & Vaughn, 2008)

 Students tend to assume that SNSs are used mainly for communicating with friends and do not use Facebook to contact university personnel.

(Pempek, Yermolayeva, & Calvert, 2009)

Thus, they do not expect to interact with faculty through SNSs.

(Chu, Meulemans, & Nalani, 2008; Joinson, 2008; Lampe, Ellison, & Steinfield, 2008)

Jacobson (2011) observed in her study that there were only a few responses from users on numerous libraries' fan pages on Facebook, while Stuart's (2010) study found that library Twitter accounts had few followers.

Background Limitations of Existing Researches

 Current research regarding libraries' use of social networking tools focuses mainly on the actual application of the tools and the attitudes of librarians or users

(Chu & Du, 2012)

 Many studies are restricted to one tool, either Facebook or Twitter

(Jacobson, 2011)

Literature Review

- SNSs are useful marketing tools that enable users/institutions' profiles to be visible to wider audiences.
- SNSs offer flexible privileges and access controls for user accounts, which allow different layers of user connection and networking.
- SNSs are used not just for self-presentation, but also for social networking and content sharing

(Ellison & Boyd, 2013).

Different users may prefer different SNSs, depending on the technical characteristics of the SNS



Facebook enables individuals or organizations to profile for self- promotion and online socializing, with post interactions from both users and their "friends"s

(Hughes, Bowe, Batey, & Lee, 2012)



Twitter is used more for short messages for quicker information sharing and dissemination

(Kwak, Lee, Park, & Moon, 2010)

Librarians make use of SNSs to:

- Connect with their users easily and be "part of their communities"
- Promote Library Services and Events
- Connect patrons with important information sources [Twitter]
- Engage College students [Facebook]

(O'Dell, 2010; De Rosa et al. 2007; Charnigo & Barnett-Ellis, 2007; Milstein, 2009; Mack, Behler, Roberts, & Rimland, 2007)

There is an increased use of SNSs by libraries, however, user engagements still appears to be low.

Factors that may hinder interactions between SNS users and Libraries

- Privacy concerns of users
- •Infrequency of information updates

(Chu et al., 2008; De Rosa et al., 2007)

In measuring the effectiveness of library SNSs, it is important to consider the number of people who follow the SNS page or the number of replies to an SNS post.

Ram (2011)

- Data: High level of awareness of Facebook and Twitter as SNSs, but low level of awareness of SNSs within university library
- This suggests that low user engagement might be related to the inadequate promotion of library SNSs

Metrics used to indicate level of user engagement and user interest in certain SNS posts:

- Counting total number of followers, individual responses or "likes" [Facebook]; or number of retweets [Twitter]
 - To quantify and understand the community information sharing patterns via SNSs

(Forkosh-Baruch & Hershkovitz, 2012; Hoffman and Fodor, 2010; Jacobson, 2011; Stuart, 2010)

In online social networks, information flow can be n-ways (Xu et al., 2009), generating different types of interactions (Dalkir, 2011)

The four types of interactions:

- •one-to-many information/knowledge sharing (Harinarayana & Raju, 2010)
- •one-to-many information dissemination (Ram et al., 2011)
- one-to-one *communication* (Romero, 2011)
- many-to-one information gathering (O'Dell, 2010)

Information / Knowledge Sharing

Librarians can create knowledge and share it with communities by utilizing their information resources and professionals

(MacAdam, 1998)

Libraries provide organized resources through social networking platforms, thereby stimulating user participation and achieving the dynamic of effective information/knowledge sharing

(Harinarayana & Raju, 2010)

Information Dissemination

The dissemination of information to users is a critical function of Web 2.0 technology. Most information disseminated through SNSs concerns events or programs in the library

(Aharony, 2012; Ezeani and Igwesi 2012)

 Concise text mitigates the impact of information overload, making SNSs effective means of information dissemination

(Kim & Abbas, 2010).

Communication

- One of the most important areas in measuring the effectiveness of SNSs
- The low level of required self-disclosure makes users feel more comfortable when launching conversations with acquaintances

(McElvain & Smyth, 2006)

 Because of their concise format and informal tones, most SNSs are likely to induce interactions between users (Romero, 2011)

(Romero, 2011)

Information Gathering

 SNSs are effective information-gathering tools that have been utilized in social science research to gather professional knowledge and responses from those who participate

(Ahn, 2011; Poynter, 2010)

 libraries to reach out to communities and foster understanding of SNS functions in libraries through characterizing the interaction between librarians and users in SNSs

(O'Dell, 2010)

Literature Review SNS interactions in local cultural and online communications

Cultural differences affect individuals in:

- Their motivation of using SNSs
- •The information they contributed to the community
- The information they shared
- The manner of communication

(Madupu & Cooley, 2010; Karl, Peluchette, & Schlaegel, 2010; Shu & Chuang, 2011; Chu & Choi, 2011)

Literature Review SNS interactions in local cultural and online communications

SNS culture often emphasizes self-presentation and social interaction by providing tools that encourage everyone to disclose personal information and engage in social interactions such as photo tagging and commenting (Boyd & Ellison, 2007).

Extensive research has been conducted on how local cultures may influence users who are technologically proficient to adjust their behavior (Champan & Lahav, 2008; Li, 2010)

Literature Review SNS interactions in local cultural and online communications

Culture affects typical social networking behaviors such as user goals, typical patterns of self-expression, and common interaction behaviors in online communities (Chapman & Lahav, 2008; Li, 2010).

These differences may further affect one's perception of, and willingness to participate in, a virtual community (Siau, Erickson, & Nah, 2010).

Research Methodology

Research Methodology Research Questions

RQ1:

What are the interaction types in library SNS posts?

RQ2:

What are the differences between Facebook, Twitter, and Weibo regarding user interaction in public and academic libraries?

RQ3:

What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?

Research Methodology

 Mixed-method approach, combining both quantitative and qualitative data to answer research questions

(Creswell, 2003)

Study Sample: 40 academic and public libraries in English-Speaking countries and the Greater China region

Sampling: Criteria

For academic libraries

- ☐ English-speaking countries: QS higher education top-100 ranking
- □ Chinese-speaking regions: QS Asian university rankings

For public libraries

recognized as large libraries (e.g., national libraries, state libraries or municipal libraries)

SNSs studied

Facebook: > 1.15 billion active users by 2013 (Facebook, 2013)

Twitter: 500 million active users (Coyne et al., 2013)

Sina Weibo: > 300 million of China's microblog users in February, 2012 (Zhao et al. 2013)

Data collection

Posts from the social networking sites of the 40 libraries were captured (January-May 2011)

• including contents posted both by libraries or users

Ten posts were sampled on the first of each month and every third day thereafter (e.g. the 1st, 4th, 7th, 10th, etc.), following the strategy of systematic sampling created by Weightman and Williamson (2005).

number of user responses to each post was registered: comments or shares (like, retweet or forward)

Total posts harvested: 1753

Table 2. Interaction types, subcategories, information flow types, and examples

Interaction Type	Definition	Information Flow	Subcategories with definitions for each subcoding	Example	References	
			Individual experience: Tacit knowledge sharing of personal experience	XXX's "XXX" is an elaborate pop-up book about global warming.		
Information /knowledge sharing	Directing users to resources such as those online, public resources, books, etc.	one-to-many	Library in-house resources: information (and/or explicit knowledge) sharing regarding library resources	Take an inside tour of how we preserve the records of life during the Civil War from the XXX.	Ayu & Abrizah, 2011; Harinarayana & raju, 2010; MacAdam, 1998 Nicholas et al., 2011; Kim & Ju, 2008	
			Library online resources(free and fee-based): information (and/or explicit knowledge) sharing regarding library online resources	Link of the Day: The Museum of Online Museums, "covering a vast array of interests and obsessions"		
Information dissemination	Up-to-date news and announcements	one-to-many	Event: information dissemination about event Facility: information dissemination about facility	Conference and CPD www.xxx.xxx There has been a power cut this afternoon affecting the XXX library.	Aharony 2012; Cahill, 2009; Ezeani and Igwesi, 2012; Kim and Abbas, 2010; Rametal 2011; Research	
from	from libraries		Service: information dissemination for library service	The second period of Library disruption due to upgrade work will take place tomorrow.	Information Network, 2010	
	Aimed at	viduals, versations happen ween viians and rs or among	Rapport building: communications are related to greeting, thankful or other emotional expressions	Congratulations to all students for getting through the examination period!		
Communication	individuals, conversations that happen between librarians and users or among		Exploratory: communications initiate discussions among users by asking open-ended questions or stating critical ideas	The New XX Exhibition Gallery is off to a fantastic start receiving its 1000th visitor on Saturday. Have you been yet? What do you think?	Boyd & Ellison, 2007; Burton & Soboleya, 2011; Chen et al., 2011 Ito et al., 2008; McElya & Smyth, 2006; Romen 2011	
	users		Informative: communications provide or suggest information useful for particular users	Use internal search engine on our school home page, enter the advanced search interface.		
Information	Harvesting information		Questionnaire: collecting questionnaires	Tell us what you think about Library 24/7. University Library: Library 24/7 Feedback Questionnaire.	Ahn, 2011; Casey &	
gathering	from individual users (e.g., for improving library services)	many-to-one	Voting (Poll): collecting votes	It's here! New XX trial interface : We'd love to know what you think!	Savastinuk, 2006; O'Dell, 2010; Poynter, 2010	

Interaction Type	Definition	Information Flow	Subcategories with definitions for each subcoding	Example
Information /knowledge sharing	Directing users to resources such as those online, public resources, books, etc.	one-to-many	Individual experience: Tacit knowledge sharing of personal experience	XXX's "XXX" is an elaborate pop-up book about global warming.
			Library in-house resources: information (and/or explicit knowledge) sharing regarding library resources	Take an inside tour of how we preserve the records of life during the Civil War from the XXX.
			Library online resources(free and fee-based): information (and/or explicit knowledge) sharing regarding library online resources	Link of the Day: The Museum of Online Museums, "covering a vast array of interests and obsessions"
Information dissemination	Up-to-date news and announcements from libraries	one-to-many	Event: information dissemination about event	Conference and CPD www.xxx.xxx
			Facility: information dissemination about facility	There has been a power cut this afternoon affecting the XXX library.
			Service: information dissemination for library service	The second period of Library disruption due to upgrade work will take place tomorrow.

Interaction Type	Definition	Information Flow	Subcategories with definitions for each subcoding	Example	
	Aimed at individuals, conversations that happen between librarians and users or among users	one-to-one	Rapport building: communications are related to greeting, thankful or other emotional expressions	Congratulations to all students for getting through the examination period!	
Communication			Exploratory: communications initiate discussions among users by asking open-ended questions or stating critical ideas	The New XX Exhibition Gallery is off to a fantastic start receiving its 1000^{th} visitor on Saturday. Have you been yet? What do you think?	
			Informative: communications provide or suggest information useful for particular users	Use internal search engine on our school home page, enter the advanced search interface.	
	Harvesting information from individual users		Questionnaire: collecting L questionnaires L	Tell us what you think about Library 24/7. University Library: Library 24/7 Feedback Questionnaire.	
Information gathering	(e.g., for improving library services)	many-to-one	Voting (Poll): collecting votes	It's here! New XX trial interface - We'd love to know what you think!	

Region	Library	Library type	SNS type	No. of Subscribers
English speaking countries	Durham University Library (http://www.dur.ac.uk/library)	Academic	Facebook	1853ª
English-speaking countries	Stanford University Library (http://library.stanford.edu)	Academic	Facebook	3026
	University of Texas at Austin Libraries (http://www.lib.utexas.edu)	Academic	Facebook	1113
	University of Warwick Library (http://www2.warwick.ac.uk/services/library)	Academic	Facebook	2851
	University of Washington Libraries (http://www.lib.washington.edu)	Academic	Facebook	2077
	Calgary Public Library (http://calgarypubliclibrary.com)	Public	Facebook	3169
	Columbus Metropolitan Library (http://www.columbuslibrary.org)	Public	Facebook	22036
	Toronto Public Library (http://www.torontopubliclibrary.ca)	Public	Facebook	10918
	New York Public Library (http://www.nypl.org)	Public	Facebook	42100
	British Library (http://www.bl.uk)	Public	Facebook	37435
	Cambridge University Library (http://www.lib.cam.ac.uk)	Academic	Twitter	3165
	Harvard University Library (http://lib.harvard.edu)	Academic	Twitter	3665
	MIT Libraries (http://libraries.mit.edu)	Academic	Twitter	3706
	University of British Columbia Library (http://www.library.ubc.ca)	Academic	Twitter	1482
	University of Texas at Austin Libraries (http://www.lib.utexas.edu)	Academic	Twitter	2234
	University of Washington Libraries (http://www.lib.washington.edu)	Academic	Twitter	1190
	Kansas City Library (http://www.kclibrary.org)	Public	Twitter	5890
	Los Angeles Public Library (http://www.lapl.org)	Public	Twitter	2448
	Toronto Public Library (http://www.torontopubliclibrary.ca)	Public	Twitter	8395
	New York Public Library (http://www.nypl.org)	Public	Twitter	164427

Region	Library	Library type	SNS type	No. of Subscribers
The Greater China region	National Chung Hsing University Library (http://www.lib.nchu.edu.tw)	Academic	Facebook	1536
The Greater China region	Hong Kong Baptist University Library (http://library.hkbu.edu.hk)	Academic	Facebook	1096
	National Taiwan University Library (http://www.lib.ntu.edu.tw)	Academic	Facebook	9693
	National Tsing Hua University Library (http://www.lib.nthu.edu.tw)	Academic	Facebook	3384
	Shih Chien University Library (http://www.lib.usc.edu.tw)	Academic	Facebook	3617
	National Taichung Library (http://www.nlpi.edu.tw)	Public	Facebook	1589
	Tainan Public Library (http://www.tnml.tn.edu.tw)	Public	Facebook	3020
	Taipei Public Library (http://www.tpml.edu.tw)	Public	Facebook	3846
	Beijing Normal University Library (http://www.lib.bnu.edu.cn)	Academic	Weibo	1929
	Jinan University Library (http://lib.jnu.edu.cn)	Academic	Weibo	3826
	Nanjing University Library (http://lib.nju.edu.cn)	Academic	Weibo	2050
	Tsinghua University Library (http://www.lib.tsinghua.edu.cn)	Academic	Weibo	7925
	Xiamen University Library (http://library.xmu.edu.cn)	Academic	Weibo	4852
	Chongqing University Library (http://lib.cqu.edu.cn)	Academic	Weibo	3233
	Hangzhou Public Library (http://www.hzlib.net)	Public	Weibo	10938
	Shanghai Public Library (http://www.library.sh.cn)	Public	Weibo	3553
	City of Shenzhen Public Library (http://www.szlib.gov.cn)	Public	Weibo	2040
	Capital Library of China (http://www.clcn.net.cn)	Public	Weibo	4200
	Shunde Public Library (http://www.sdlib.com.cn)	Public	Weibo	2770

Differences between the number of SNS subscribers

A Mann-Whitney U test indicated a significant difference between the number of SNS subscribers for public libraries in English-speaking countries and that in the Greater China region (n = 17, z = 2.21, p < 0.05).

The number of SNS subscribers in public libraries in English-speaking countries (M rank = 104, n = 9) was greater than that in the Greater China region (M rank = 49, n = 8).

A Mann-Whitney U test also found that public libraries in English-speaking countries had significantly different numbers of subscribers of SNS tools (n = 20, z = 3.23, p < 0.01) from those in academic libraries: public libraries in English-speaking countries had more SNS user subscriptions (M rank =137, n = 9) than academic libraries (M rank =73, n = 11).

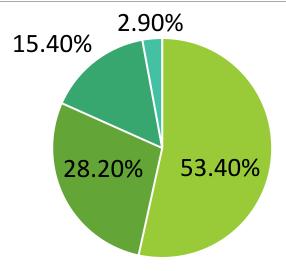
10 libraries participated in semi-structured interviews through telephone

- librarians shared their experiences and perceptions about the use of SNSs
- •interviews were audio-taped and transcribed
- •Qualitative analysis was done using NVivo 8.0
- Other quantitative analysis was done with the STATA program

Findings

https://www.youtube.com/watch?v=_Tq__HYqyew

How Librarians interact with users through SNSs



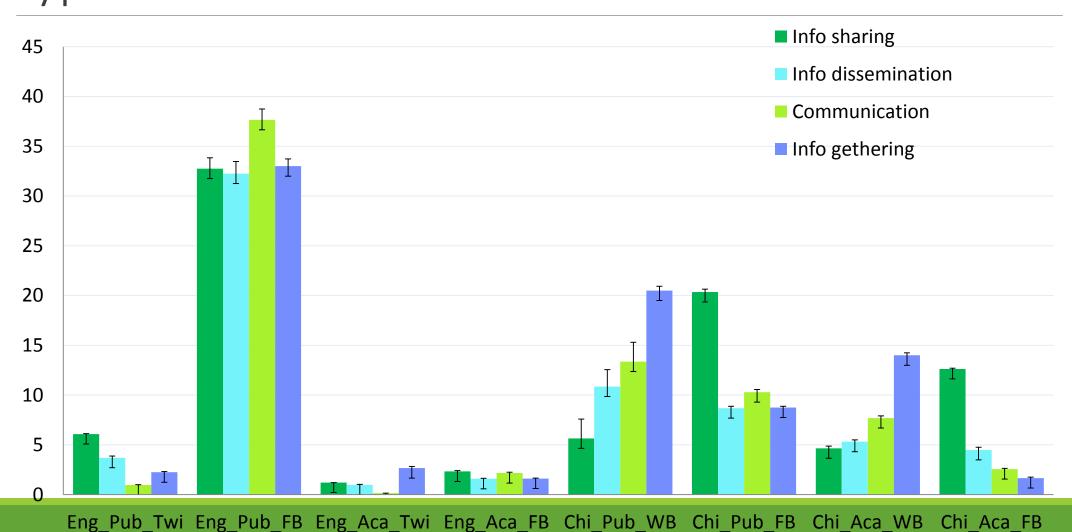
- Information Dissemination
- Communication

- Information/Knowledge Sharing
- Information Gathering

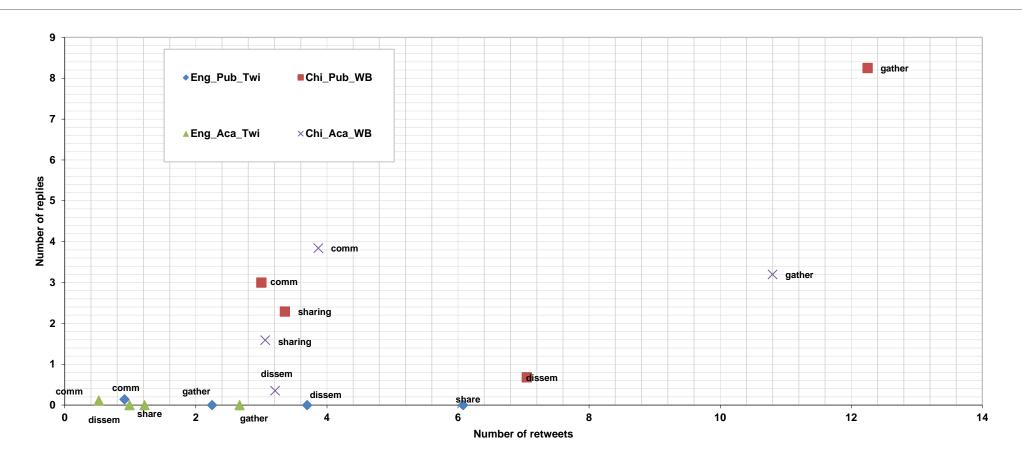
Frequencies of interaction types on libraries' SNSs in two regions

Region	Library type	SNS	Information/ knowledge sharing	Information dissemination	Communication	Information gathering	No. of posts
English-speaking	Public	Twitter	124 (49.8) ^a	187 (75.1) b	36 (14.5)	4 (1.6)	249
countries		Facebook	124 (58.8)	156 (73.9)	38 (18)	15 (7.1)	211
	Academic	Twitter	130 (45)	196 (67.8)	52 (18)	12 (4.2)	289
		Facebook	81 (35.4)	173 (75.6)	30 (13.1)	16 (7)	229
Greater China	Public	Weibo	80 (34.3)	110 (47.2)	86 (36.9)	4 (1.7)	233
		Facebook	28 (26.4)	74 (69.8)	14 (13.2)	4 (3.8)	106
	Academic	Weibo	51 (22)	126 (54.3)	75 (32.3)	5 (2.2)	232
		Facebook	19 (9.3)	185 (90.7)	18 (8.8)	3 (1.5)	204
Total			637 (28.2)	1207 (53.4)	349 (15.4)	65 (2.9)	1753

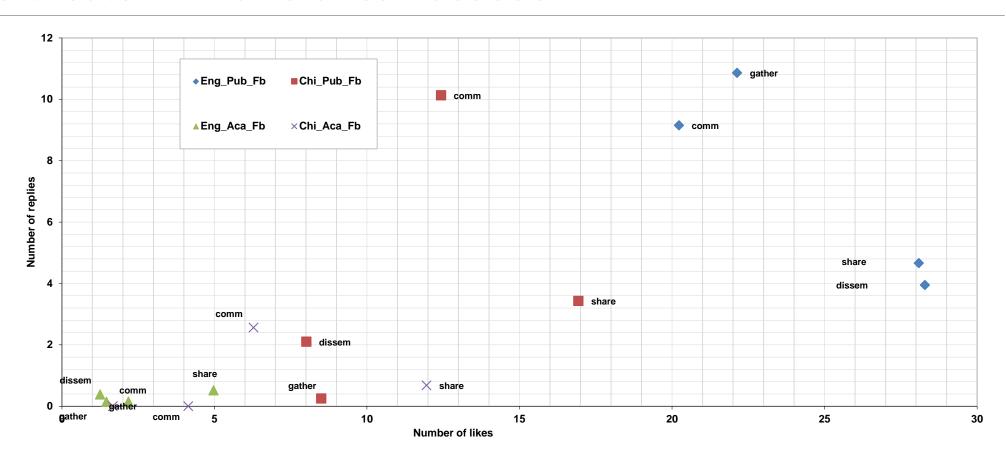
Mean overall responses for four interaction types grouped by region, library type, and SNS type



Scatter plot for the average number of retweets and the average number of replies in English-speaking libraries' Twitter and the Greater China libraries' Weibo



Scatter plot for the average number of "likes" and the average number of replies in English-speaking libraries' Facebook and the Greater China libraries' Facebook



Discussion

HTTPS://WWW.YOUTUBE.COM/WATCH?V=G6S1KX6IX-G

- In this study, SNSs were used primarily as channels for disseminating news and announcements about things currently happening in the library
 - This concurs with SNS usage identified by other studies (e.g., Wilkinson & Thelwall, 2012), where news and announcements predominated
- •This is because SNSs are more technically suited to news information and enable information to spread quickly and easily to the community.

- information/knowledge sharing interaction type was also commonly used between librarians and users in library SNSs
- Librarians facilitate knowledge sharing in communities

(Kim & Abbas, 2010)

Libraries play a important role in knowledge communities

(MacAdam, 1998)

 Information/Knowledge sharing posts tend to generate the most responses compared to others.

- Librarians also used SNSs for personal communication by conducting one-to-one conversations on various topics during their workday
 - To obtain collective opinions on improving library services
 - Proportion was less than that of the two previous interaction types
- Information gathering constituted a small proportion of SNS posts from our data sets
 - Can draw user's to and stimulate a library user's interest in libraryrelated activities (Solomon, 2011)

Different potential audiences in each SNS type

- Facebook: A younger demographic
- Twitter: A broader demographic which includes professions

Librarians can create selective SNS posts to reach out and recruit users.





What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

For libraries in English-speaking countries

- Facebook: High number of responses in all four interaction types
 - May be due to the large number of followers
- Twitter: more replies related to information/knowledge sharing
- User engagement was limited to these two SNSs
- Librarians tend to use Facebook more than Twitter to collect polls or votes

What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

- Communication interaction type generated more replies than "likes" / retweets
 - one-to-one communication with its personal message enhances user engagement (Kivran-Swaine & Naaman, 2011)
 - Costly when number of replies and interactions becomes too large, and/or when the conversation between librarians and users deepens.
 - Libraries can adjust resource deployment according to community properties

What are the differences between Facebook, Twitter, and Weibo regarding user interactions in public and academic libraries?

- Twitter was less effective than Facebook in producing engagement.
- One-to-many conversations in Facebook allow information/knowledge sharing and dissemination posts to generate more "likes" than replies.
 - Users are enabled to show emotional support and engagement to the community without much deep communication

What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?

- Librarians in Mainland China adopt an SNS tool called Weibo
 - Widely used on both the web interface and on mobile devices
 - Text input limit of 140 words
- Information gathering generated good user responses
- Fewer replies for information gathering in Chinese academic libraries than in public libraries
 - Use of SNS polls and questionnaires may have increased the likelihood of replies

What are the differences between English-speaking countries and the Greater China region concerning the types of libraries that use SNSs to interact with users?

- A good "buy-in" can be expected by librarians in tech-related polls
 - users of Chinese SNSs like to play computer games and share IT related solutions with other users (Chapman and Lahav, 2008)
- Less "likes" were used by users in the Greater China region than their English-speaking counterparts
 - •For cultural reasons, people in the Greater China region do not easily express their emotions explicitly (Tam et al., 2012)

Conclusion

- How libraries can use SNSs to engage users
- 4 types of library-user interactions
 - Limited to disseminating announcements and information
 - Can consider diverse ways to interact and engage with users.
- Cross-cultural differences in user online engagement
 - Libraries can select direct or indirect communication strategies to accommodate user engagement

Thank you!

THAT'S IT!

Interactions Between English-Speaking and Chinese-Speaking Users and Librarians on Social Networking Sites

JOURNAL OF THE ASSOCIATION FOR INFORMATION SCIENCE AND TECHNOLOGY, **(**):**-**, 2014

© 2014 ASIS&T • Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/asi.23251

http://web.edu.hku.hk/staff/academic/samchu

Q&A