



Innovative Uses of Social Media in Information Literacy Education, Library Outreach, and User Engagement: An International Perspective

Ms. Qing Li, IEEE

Qing Li is the IEEE Client Services/University Partnership Manager for Greater China. She is mainly responsible for customer outreach, awareness and training programs for the IEEE Xplore Digital Library and other subscription products. Qing also manages the University Partnership Program, developing stronger relationships with student leaders, librarians, and faculty in China. Prior to joining the IEEE, Qing received her MPhil in MIS at Syracuse University, USA and her Masters in Information Management and Bachelor of Science at Peking University, China. She is a member of ASEE and SLA.

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Abstract

Social media tools have been pervasively adopted as an effective way for library marketing and outreach. This paper presents best practices of innovative uses of social media (e.g. WeChat and QQ) in library instruction education and user engagement based on first-hand experiences of the IEEE Client Services team in China. Use cases to be shared include making social media official accounts functional for maximum outreach, conducting real-time information literacy trainings via social media, establishing target user groups by subject and engaging faculty and students 24x7, building a self-sustaining learning community and facilitating embedded learning in users' daily lives, and working with student groups to design and implement interactive games (e.g. large-scale in-person library scavenger hunt "Library Break") with the assistance of social media.

Positive relationships are revealed between the use of social media and the levels of both library activity turnout and user engagement. Interesting findings and metrics in designing and implementing different types of events using social media are also discussed. This paper not only brings an international perspective to US tales of using social media, but also provides practical suggestions to academic librarians who are interested in seeking innovative ways of end user outreach, education, and engagement. As the engineering community is the main audience in the use cases, this paper also contributes to engineering education.

Background

The Internet greatly facilitates individuals' ability to access library resources, retrieve key information, and solve problems on their own. Academic libraries face various crises including a downward drift in the number of physical library visitors for research and reference questions, low turnout to library instructional activities, low awareness of library services, and lack of effective communication between librarians and end users. College students are less dependent on the traditional library and library services, and less actively involve librarians in their research [1].

Meanwhile, the rise of social media creates a new world for libraries. Social media has been widely adopted as a powerful tool by academic libraries, particularly for library outreach, information dissemination, and reference service enhancement. Although various social media tools (e.g. Facebook, Twitter, Flickr, Youtube, etc)

have been extensively examined in the past decade, more innovative uses of social media in real-time information literacy teaching, large-scale library education, and self-motivated user engagement remain to be further explored. Different from most previous studies, this paper attempts to explore the use of social media in mutual communication between library instructor and users, library instructional activities, learning community building, and interactive game designing. The use of social media is also related to its audience and cultural background. This paper aims to bring an international perspective by sharing the actual uses of two social media tools used daily in the Chinese libraries and engineering communities.

Literature Review

A survey among 110 libraries in multiple countries shows social media tools are adopted for different purposes, e.g. Facebook and Twitter are most frequently used for library news posting, blogs for book recommendation, YouTube for library tours and Flickr for library exhibitions [2]. Most US libraries and related units establish official Facebook pages perceived by patrons as a useful and engaging medium to learn about library services and resources [3]. While Facebook and Twitter are more used in the US libraries, WeChat and Weibo are predominantly utilized by Chinese libraries. For example, Jinan University Library implements its official WeChat account (similar to Facebook page) as a service platform where the host (the library) can actively push information and offer service to its subscribers [4].

Outreach is a key element of librarian core responsibilities, ranging from promoting library materials, connecting the library to extensive communities, and reaching out to specific target audiences [5]. Social media vehicles such as Facebook greatly extend the range of traditional library outreach and enhance library services by connecting with people and building relationships, particularly in developing programs accommodating the diversity of users [2].

Another important application of social media in libraries is to offer library services, particularly virtual reference service. The nature of social media as an instant messaging tool makes it perfect for one-on-one communications and to offer rapid response to reference questions. WeChat further offers API to easily connect with existing databases and servers and allows users to conduct complex tasks. In a recent study of social media applications in Chinese libraries, 84.6% of the top 39 (“985 project”) Chinese universities have created WeChat libraries [6]. These official WeChat accounts mainly focus on circulation service, OPAC search portal, reference service, and library resources promotion. With the Peking University Library WeChat official account users can reserve, borrow, and return books, review video courses, search the library catalog, take a virtual library orientation, and play interactive games to learn library resources and services.

However, successful social media requires more than creating and populating a social

media account. Success cannot be simply measured based on the number of comments and likes [5]. Xu and his colleagues propose six quality criteria to evaluate the interaction and content delivered by WeChat libraries that include the volume of information, information content quality, concordance rate, frequency, self-service, and basic features [7]. To make social media presence more relevant and useful, it is important to consider the target audience, and think about what they really care about before posting [5]. However, information on social media is mainly disseminated by librarians, not between users and librarians. Critics also arise with the use of social media for library outreach purpose. Research shows users are unwilling to connect and interact with librarians through Facebook [8]. Some students express concerns about personal privacy when libraries use Facebook or other social media as outreach tools [9]. More research is needed to explore the use of social media in libraries for an interactive user experience and trustworthy, effective interaction.

The main purpose of academic library is to serve faculty and students, and assist research and learning. A recent ACRL study on over 70 US educational institutions proves the value of library instruction in student learning and success [10]. Social networking tools such as Facebook may have the ability to promote active learning and collaboration [11]. Academic librarians have been using various social media tools in library instruction and information literacy training for over a decade. For example, UCSD librarians create Wiki course guides to complement one-shot instruction session. Both blog and wiki are embedded in chemistry course teaching for assignment submission and group interaction [12]. YouTube videos are created and used in traditional classroom instructions and online and distance education classes. Short instructional videos in modular format can be easily embedded into both synchronous and asynchronous learning environments [13]. Koury and Jardine further examine the use of various cloud computing applications (e.g. Google Apps, Flickr, YouTube, Zotero) in library instruction and teaching, including content sharing, information organizing and storage, tutorial creation, and collaboration [14]. Students are more engaged when social media tools they are familiar with (e.g. Facebook, Twitter, Youtube, blogs, wikis) are incorporated into library instructions and websites [15].

However, the majority of prior studies using social media in library instruction focus on creating ready-to-watch web pages or tutorials and using social media to facilitate course assignment and group interaction. Very few studies have examined the use of social media tools in real time information literacy teaching. In an earlier paper, the author shares innovative practices of utilizing social media tools in teaching information literacy courses in real time, and makes comparisons among similar courses delivered on regular online presentation platform (e.g. WebEx) and social media tools (e.g. WeChat and QQ). The findings reveal social media greatly increases attendance rate, attendee engagement, as well as attendees' intentions of active learning [16].

Method

The IEEE Client Services Team is a globally distributed group consisting of 12 professionals specializing in library and information science. Although not associated with any specific library, we consider ourselves “IEEE Librarians” as our main responsibilities are to support the IEEE *Xplore* digital subscription business via extensive customer outreach, awareness, and training programs. We also generate and support diverse community/volunteer-based activities that involve IEEE members, authors, student branches, faculty, researchers, and librarians. The cases in this paper are either implemented or co-organized/facilitated by the IEEE Client Services team in China with close collaboration of different parties. Our main audience for outreach, engagement, and information literacy teaching is the engineering community which includes engineering faculty, students and researchers in the IEEE fields of technical interest. The social media tools utilized by the IEEE Client Service team in China include WeChat and Tencent QQ.

WeChat is the most used messaging tool in China. Similar to WhatsApp, WeChat provides instant text messaging, voice messaging, and group video conferencing and photograph sharing. WeChat also provides official accounts “which enables them to push feeds to subscribers, interact with subscribers, and provide them with services” [17]. A WeChat official account is similar to a Facebook page, but more powerful as it provides three types of accounts: service account, subscription account, and enterprise account. Service accounts allow the host to build a service platform where subscribers can perform complex tasks such as registration or payment. It can also connect with the third party programs or plug-ins [17].

Tencent QQ is another instant messaging application widely used in China, working like the former ICQ. Other than instant messaging, it provides services including file sharing, video calls/conferences, online games and blogging. Both WeChat and QQ allow users to set up special groups for chatting and conferencing [18].

Our Best Practices

Large-scale outreach: make social media presence functional

Library outreach programs tend to connect library to the community it serves, promote library services and engage patrons in library initiated activities [19]. Various social media tools such as Facebook, Twitter, and WeChat have been used daily by librarians for outreach purpose. However, quality is more important than quantity. Using social media for library outreach does not refer to “use a Facebook page or Twitter account to assault followers with a constant stream of messages” (p. 21) [5].

Beyond providing quality content at social media accounts, it is also important to make the social media presence functional. Many Chinese libraries set up their

WeChat accounts as service platforms and allow students to borrow and return books and search OPAC catalog. The IEEE *Xplore* WeChat official account was established in September 2015 and has over 12000 followers so far. The purpose of this account is not only to disseminate key information, but also to serve as a functional hub for authors and users who are interested in IEEE resources and publishing with the IEEE. It has five function modules- publication selections, submission guidelines and tips, IEEE *Xplore* training materials, online courses, and interactive games. Subscribers can search for upcoming conferences, journal special issue call-for-papers, view training videos, attend online courses hosted by social media groups, and also participate in the online IEEE *Xplore* search competition.

The IEEE *Xplore* WeChat official account also plays an important role in event registration and attendee engagement. For example, on-site registration and check-in for large events (e.g. authorship workshop, celebrity talk) are usually challenging with a couple of hundreds attendees showing up at the registration desk at the same time. We change the process of advance and on-site registration via WeChat. Attendees are asked to scan a QR code to either register on site by recording their contact information, or confirm their presence after advance online registration. All the information will be automatically recorded and exported into an excel spreadsheet later. Library instructional materials will be available at the WeChat official account for downloading. These functions greatly increase the popularity of social media accounts and maximize library outreach impact.

Effective interaction with target group

Although information dissemination and services offered by social media official accounts are important, the way of communication is one-way broadcasting, instead of two-way interaction. Effective communication at social media should consider the target audience and deliver appropriate messages to the right group [5]. In exploring effective connection with target audiences and initiating meaningful interaction, we have started setting up special groups on social media (WeChat and QQ) since late 2016. Multiple special user groups with different purposes are running actively so far. The size of target groups ranges from 10 members to over 2000 members. Some user groups exist for a short time to offer instant assistance, e.g. IEEE *Xplore* subscription trial user group. Some user groups are set up for a dedicated purpose and gradually evolve into a community, e.g. IEEE *Xplore* Online Course user group, and InnovationQ Plus Patent Search user group. Some user groups are established permanently, such as the IEEE General Discussion user group, which has grown to over 2000 members.

As stated earlier in this paper, one of the criticisms against using social media in library outreach is the privacy violation concern raised by students. However, there is little personal privacy concern in our practices. Attendees can simply join a target group by scanning a QR code without becoming a “friend” with the instructor or

anyone. All the discussions and interactions are limited to that group. Group members can stay in this virtual space for learning or communication purposes, without releasing personal information.

Real-time information literacy course delivery at social media

As stated earlier, little research has been conducted in using social media for library instructional activities. The IEEE Client Service team in China has offered information literacy courses since late 2016 via social media (WeChat and QQ). The comparison of real-time course delivery between social media and WebEx platform was published in an earlier paper [16]. The information literacy courses offered at WeChat and QQ include Searching IEEE *Xplore* Effectively, IEEE Paper Submission Guidelines & Process, Technical Paper Writing, and Boosting Your Career with IEEE. Each course consists of a 45-min presentation with 15-min Q&A.

We choose two social media tools for online training as they both have their pros and cons. WeChat works like WhatsApp where the course is delivered as a series of audio clips (up to 60 seconds per clip). These clips are archived automatically for future review. Attendees who miss the courses can always replay the recording and ask questions in the group. WeChat does not support live demonstration. PowerPoint slides need to be converted as separate images and sent out individually during the course. QQ supports both live presentation and demonstration. QQ courses are delivered in real time like regular online courses. As QQ courses are not recorded, attendees have to show up when the course starts.

To target the right audiences, we choose not to broadcast course recordings at official accounts. Instead, one special user group is established respectively at WeChat and QQ every semester. Only people who are interested in attending these courses join the groups by scanning a customized QR code. For example, WeChat 2017 Spring User Group has 453 members and QQ 2017 Spring User Group has 415 members. Different from the other traditional online presentation platforms such as WebEx, discussion and interaction can start from the day the user group is established, continue throughout the course, and remain active after the course ends. These user groups will not be dismissed after all the courses are completed for that semester. Although members can freely choose to leave the group, many user groups remain active for general discussion.

Five courses with the same content were taught via three tools from March 2017 to June 2017. According to the course metrics shown on Table 1, social media courses (WeChat and QQ) work more effectively than traditional online courses (WebEx). The number of attendees per session reaches 305 for WeChat and 36 for QQ, while the number of attendees per WebEx session is 19. As attendees are able to actively interact with the instructor before, during and after the course, active engagement is observed throughout the lifecycle of social media user groups. The number of

questions during the course Q&A is 6 and 9, at WeChat and QQ respectively, compared to 2 at WebEx. The number of questions asked outside of the course is 35 and 15 at WeChat and QQ within a four-month period, respectively. A follow up online survey shows that many attendees felt more comfortable attending courses, asking questions and interacting with instructors in a channel they already use daily. As WeChat courses are automatically recorded as group archives, learning can occur anytime and anywhere. The iterative circles of learning further generate in-depth discussion and initiate new ideas.

	WeChat	QQ	WebEx
N of Attendees per Session	305	36	19
N of Questions During Course Q&A per Session	6	9	2
N of Questions Outside of the Course	35	15	4(received through email)

Building a self-sustaining learning community at social media

The Pew Research Center report shows the majority of library users think of themselves as lifelong learners [20]. Many of them have participated in various kinds of personal learning activities or systematically take courses or trainings to improve their skills. The ACRL report reveals that the library's use of social media promotes awareness and builds academic community among students [10].

In our social media implementations in China, social media not only serves as a tool to drive personal leaning, but also plays an important role in facilitating group learning, and building a self-sustaining learning community. As real-time course delivery requires special user groups be established every semester, some user groups are gradually evolving into self-sustaining communities. Peer-to-peer assistance activities are observed in multiple groups. For example, when the instructor is not available or cannot respond to questions in a timely manner, other members will start offering suggestions based on their personal experiences. Questions include how to identify key articles, conduct a literature review, submit a paper and respond to peer review comments. An attendee said in a survey: *"WeChat and QQ make me feel being part of a learning group. I am not alone. Everyone in the group faces similar challenges. I can ask questions any time and get help from the teacher and other students."* [16]

In a recent interesting discussion, a student complained about the difficulty of finding a good research topic and asked for advice on how to start the first paper. At least ten group members responded immediately with their personal experiences, including reading more professional papers, conducting a systematic literature review, tracking the expert in the field, imitating the writing style of classic technical papers,

communicating with advisors frequently, allocating writing time, and starting with small writing, among other contributions. The power of social media is not just to broadcast the message we want to deliver, but to generate in-depth discussion based on users' real needs and internally motivate them.

Meanwhile, many social interactions are also observed in the social media groups. Members give self-introduction and try to make friends with others who are at similar stages and experience similar challenges.

Using social media for an interactive library game and maximum user engagement

Most current social media applications in library activities focus on information dissemination, patron outreach, and virtual reference services. One of the key reasons for librarians to utilize social media is that we follow users, and interact with and serve them in their spaces. But can we lure them into the library space by social media? What types of events can effectively engage users? Library instructional games are found useful to engage students, enhance information literacy skills, and increase positive attitudes toward the library and its staff [10]. The IEEE team in China also emphasizes the role of interactive games in user engagement and has explored various ways of using social media to design interactive games and online competitions.

The author believes that the best library activities should be planned and led by end-users themselves. The ACRL 2017 report encourages collaborative instructional activities and suggests libraries working with other campus units such as writing center and tutoring services to promote student learning [10]. As an international engineering membership society, IEEE has established thousands of student groups in top schools around the world. For example, the Peking University IEEE Student Branch has played a major role in the collaboration with Peking University Library. The Peking University IEEE Student Branch is a volunteer-driven group consisting of student members and volunteers mostly from the School of Information and Engineering Science. The IEEE Student Branch has been closely working with the Peking University Library via the IEEE University Partnership Program (UPP) since 2009. In the last four years, the IEEE Student Branch has successfully planned and implemented the "Library Break" game with the support of the library. The "Library Break" game is similar to scavenger hunt. Participants need to follow a story line and try to solve the puzzles embedded in the different rooms of the Peking University Library. In designing these puzzles, multiple sources can be used including online databases (e.g. IEEE *Xplore* digital library), print books (e.g. clues hidden in the book itself), videos and posters, and so on. Participants not only play for fun, but also get to know library resources and setup in the process of looking for clues. Every year the "Library Break" game attracts around 1000 players, including both faculty and students. Before the official game, which usually lasts for two days in the physical library, the IEEE Student Branch launches the game at its social media (WeChat) official account with a key story line which participants are required to read carefully.

Both advance registration and group assignments are done at social media. While playing the game in the physical library, participants need to log into the WeChat account to check if they solved the puzzles correctly. No library staff or student volunteers are needed for this step. All the answers are pre-entered into the WeChat account for automatic checking. Participants can also look for help and get a clue for the next pass/puzzle at the WeChat account. All the promotions and announcements about the “Library Break” game are conducted on social media, which in turn increase the awareness and popularity of the library.

Conclusion

Among librarians’ core responsibilities are to understand what platforms our patrons use, ask questions from patrons’ perspectives, and provide what patrons really need. Although social media serves a bridge between librarians and end users, much work is needed to explore innovative uses of social media in users’ real research workflows and daily lives. This paper shares best practices of utilizing social media in large-scale outreach, target group interaction, information literacy course delivery, interactive game designing, and learning community building.

To make social media presence more effective, this paper suggests making an official account functional. Offering practical services to facilitate research process and allowing subscribers to perform tasks (e.g. information seeking, paper submission, etc.) can increase the popularity of library social media accounts and maximize library impact. Besides large-scale outreach through official accounts, this paper emphasizes that the key to effective communication is to target appropriate audiences and initiate mutual interaction. The author shares practices where special target groups on social media are established for different purposes (e.g. online courses, general discussion, and paper submission). This approach generates two-direction communication between the instructor and audiences without little concern about personal privacy violation.

The use of social media in real time course delivery fills the current literature gap to some extent. Teaching and learning occur naturally in tools attendees use daily, and a learning community emerges accordingly. Social media breaks the boundary of the traditional information literacy course. Attendees can interact with the instructor and peers before, during and after the course. The metrics reveal the positive relationship between the use of social media and course turnout, and as well as attendee engagement.

The ACRL report states the library’s research and study space fosters social and academic community among students [10]. While in our cases, social media creates an online research and study space (e.g. multiple target groups) which evolves personal learning into group learning and fosters the emergence of self-sustaining learning communities. Self-directed learning and peer-to-peer assistance are

frequently observed in user groups without the involvement of the host/instructor.

Social media tools are also innovatively adopted in interactive library game design, promotion, and implementation. The Peking University “Library Break” successfully integrates social media as a key element of an in-person game in the physical library. However, the success of library outreach and engagement is not just a selection of communication tools, but relies on people. The author wants to call attention to the role of professional societies in the library-related activities. There are various student volunteers and student groups established by different societies. The young generation is the master of social media. We should let students (at least partially) take control of library outreach and engagement programs, instead of planning for them. The Peking University Library Break game is an example and a good start. We will continue exploring innovative ways working with students in social media applications.

Our best practices have practical implications for academic libraries and other institutions to implement similar social media tools such as Facebook, Twitter, and so on. It also brings an international perspective for US academic libraries and information professionals. However, the social media tools WeChat and QQ are mainly adopted in China. It is crucial to identify the right social networking channel in different regions. We hope to expand our experiments into other social media tools such as Facebook and Twitter in the future.

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