# Connecting with Health Science Students and Faculty to Facilitate the Design of a Mobile Library Website

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**ABSTRACT** Observing increasing usage of smartphones by students and faculty of the University of Mississippi Medical Center, librarians at Rowland Medical Library decided to explore student and faculty interest in a mobile website for the library. Focus groups were held to examine interest in a site, essential resources to include on a site, and format of the site itself. The study found significant interest in the development of a mobile library website; additionally, participants believed it essential that the site be simple and easy to use and that only certain library resources should be included on the site.

**KEYWORDS:** health science libraries, mobile apps, mobile patrons, mobile website, smartphones

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## *INTRODUCTION*

Rowland Medical Library (RML) is the health sciences library of the University of Mississippi Medical Center (UMMC) in Jackson, MS and serves the schools of Medicine, Nursing, Dentistry, Health-Related Professions, and Graduate Studies, as well as the University hospitals. In spring 2011, RML offered a workshop on using both subscription-based and free mobile apps. The workshop was well attended, and subsequently, librarians observed frequent use of smartphones by students. The library had a traditional website for information and electronic access but no site configured for mobile users. These factors created a desire to explore the following questions:

1. Were students and faculty interested in having access to library resources via a mobile website?

2. What information and resources were considered essential to include on a mobile site?

3. What format was preferred for the site itself?

## *LITERATURE REVIEW*

According to a 2012 Pew Internet Report, 46% of American adults own smartphones, with even higher percentages for those of an age typically found in undergraduate and graduate degree programs, 67% for ages 18-24, and 71% for ages 25-34.[1] The percentage of smartphone owners increased in all demographic groups surveyed between 2011 and 2012[1] and most think that this trend of increasing mobile usage will continue. In fact, Meeker estimates that by 2015, the number of people accessing the Internet with a mobile device will exceed those using a desktop.[2]

To remain relevant with an increasingly "mobile minded" population, many libraries are examining the use of separate websites configured specifically for mobile users.  Three topics emerged in the literature of library mobile websites: (1) the technical considerations in building a mobile website; (2) how to decide what to include on the website; and (3) what users want in a mobile website. Ryan[3] and Haefele[4] both discuss technical aspects of developing a mobile site, with Haefele maintaining that content should be kept simple because users do not use mobile phones for research. Deciding what to include is an important part of the site development process since mobile sites are generally subsets of regular sites. Cutshall et al.[5] and Critchlow et al.[6] both discuss creating a mobile site based on a scan of other library sites although Cutshall et al. also considered usage statistics and the availability of mobile versions of the library's resources. Only one article focused on directly asking users what they desired on a mobile site. Seeholzer and Salem used focus groups to examine student expectations of a proposed Kent State University Library mobile website.[7] The study discovered specific links to provide and also that students wanted a link to the full site, a site no more than a few links deep, and no more than 10 links on a page. The authors were surprised to find that students wanted to conduct research on their phones, to receive text messages about their library account, and the ability to ask questions through phone, chat, and text.[7] No articles were found which examined what users of an academic health sciences library would like on a mobile website. This study seeks to fill that gap and is loosely based on the study done by Seeholzer and Salem.

*METHODOLOGY*

Four focus groups with a total of 24 participants were held at RML between January 17 and March 26, 2012. Initially, recruitment was attempted through flyers, blog posts, and social media, but response was sparse (despite the offer of a $5.00 library coffee card) and resulted in only one group with three participants. Administrators of all UMMC schools were contacted for assistance, and three additional groups representing the School of Medicine, the Graduate School, and the School of Nursing were arranged. Participants filled out a short, six-item questionnaire to record faculty/student status, school affiliation, year of study (students only), use of the RML website, and possession, type, and use of a smartphone (see Appendix A). For the purposes of this study, smartphones were defined as any phone capable of accessing the Internet. Groups were then provided with printouts of the library's resources page and prompted with a series of questions to initiate discussions about what specific information and resources they considered essential on a health sciences library mobile website (see Appendix B). After working through the question prompts, three existing mobile websites from other academic institutions were presented and explored to evaluate participants' format preference (see Appendix C). Although the example sites were shown on a projection screen, students were encouraged to connect to the websites on their own phones in order to test functionality. Potential question prompts and sample websites were pilot tested in a December 2011 focus group comprised of RML librarians. Sessions were recorded and transcribed by the researchers and then transcripts were coded and analyzed in order to identify themes and patterns in participants' responses.
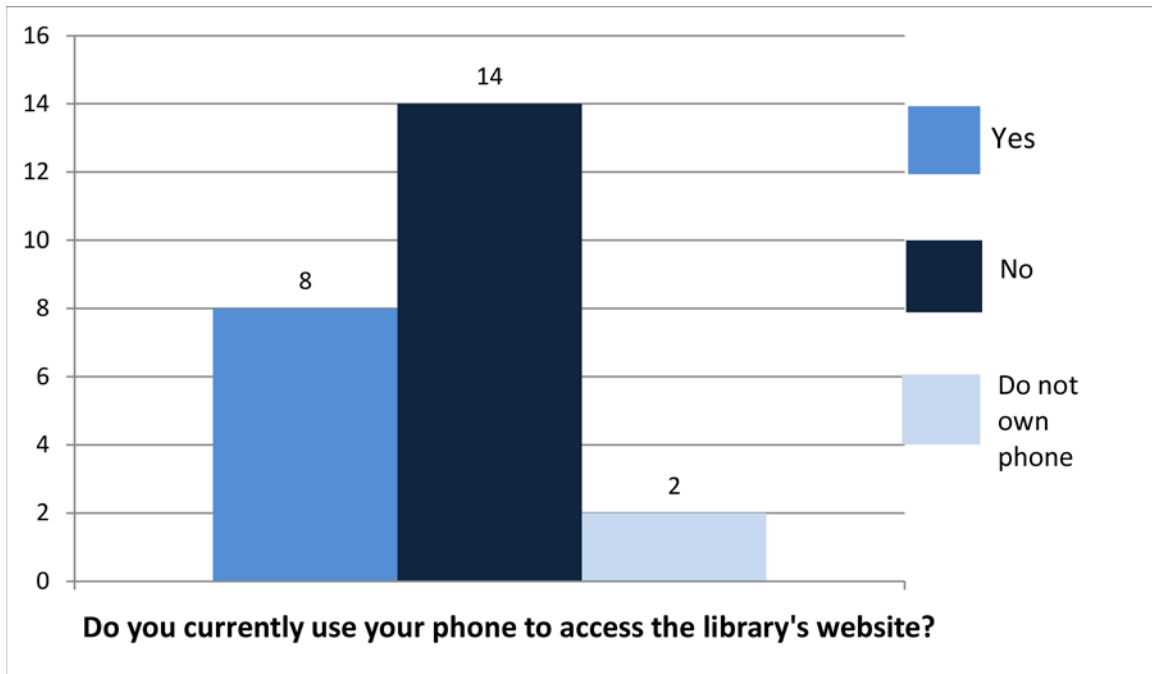
### *DISCUSSION*

*Initial Survey*

Responses to the questionnaires revealed that there was similar participation from the School of
Medicine (n=9) and the School of Graduate Studies (n=10), fewer students from the School of
Nursing (n=4), and no participants from the School of Dentistry or the School of Health Related
Professions. Three participants were faculty members; the remaining 21 were students. Twenty-
two of the 24 students and faculty surveyed owned a smartphone, with 16 owning iPhones/iPod
Touches and six possessing Android models. Although more than half of the participants used the
library's website at least several times a week (see Figure 1), only about one-third of them have
used their smartphone to access the library's website (see Figure 2). Twenty-one of the 22
participants who own a smartphone said that a mobile library website would increase the
likelihood that they would access the library via their phone.
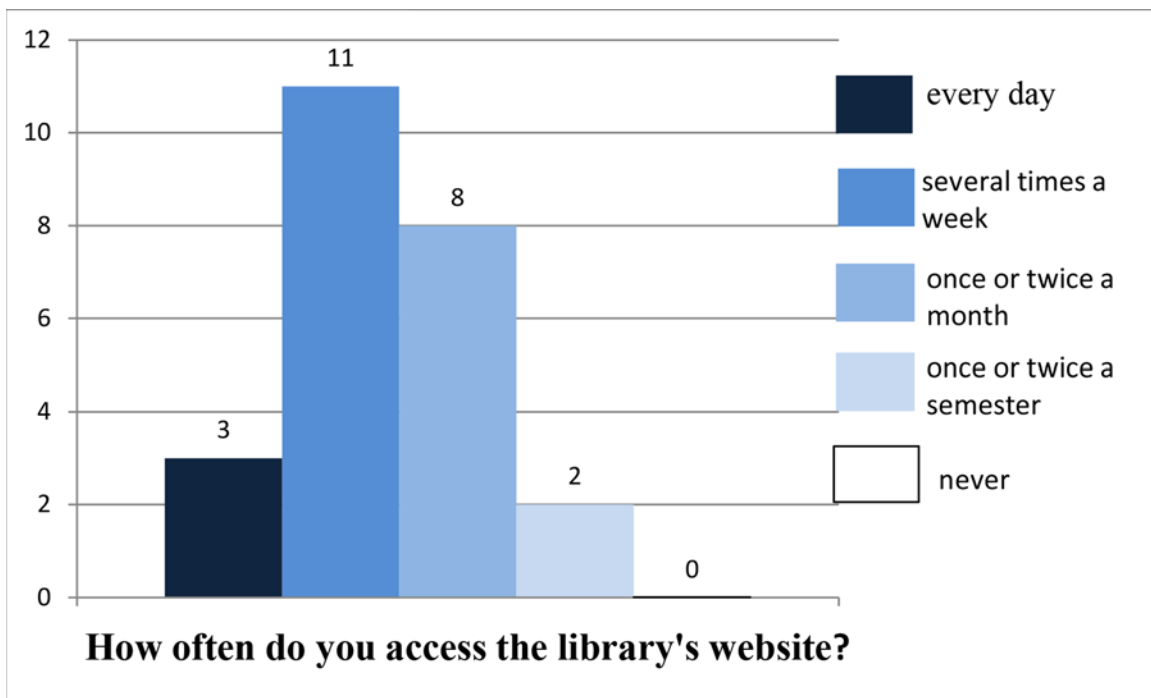


**Legend: Figure 1. Use of library website**

**Legend: Figure 2. Use of phone to access library website**

*Focus Group Discussions*

Analyzing the transcribed discussions resulted in the emergence of five themes from the data:

1. Desire for a mobile site

2. Ease of use of site

3. Practicality of information presented on the site

4. Resources requested

5. Research capability

Each of these themes will be discussed using participants' words whenever possible.

    ***Desire for a Mobile Site.*** Students clearly expressed a desire to use smartphones to access the library's resources, but cited varying reasons. For some it was a matter of convenience; a phone would be easier to use than having to log in to a computer or set up a laptop ("I am more likely to look up something on my phone than to pull out my laptop and boot

it up"). Related to convenience was a problem specific to health care students, the location of clinical duties which sometimes included either no computer access or insufficient computer access for students ("there are some Peds clinics that I've been in where they don't have a general computer so they expect you to use your phone but it's hard to get the information"). One unexpected reason was offered by some of the nursing students. These students live in more rural areas with unreliable Internet access and are apparently dependent on their phones for work done at home at least some of the time ("a lot of times at my house, my Internet will go out but I'll still have 3G on my phone"). The approximately 30% of students who had used their phones to access the library's current website expressed frustration with it, finding it cumbersome and hard to navigate on a small screen. Comments included:

- "You have to move it around and figure out where that box went because you resized it so you could read whatever the text was."
- "It's a lot of extra clicks, a lot of having to zoom and scroll."
- "I don't think it is the most friendly website on my phone."

Questions about tablets such as iPads were included in the question prompts, but it quickly became apparent that although about half of the students owned some type of tablet, none of them were using them for school. Instead, the tablets were being used solely for leisure time activities.

 ***Ease of Use.*** The overarching and most pervasive theme which emerged from the transcripts was the students' need and desire for a mobile website which is easy to use. While examining mobile website sample formats, ease of use emerged as the criterion that trumped all others. Although one faculty member expressed interest in the icon format ("I like icons personally because I am a very visual person"), students unanimously felt that icons and/or tabs

reduced ease of use. Student comments on icons included that they were "slower to load" and on

tabs that "I prefer not to have the tabs, I like one screen, you get there, you click." They

expressed their appreciation for the scrollable list format with comments ranging from "text

loads easier" to "if all you're having to do is roll your thumb up and down to see different things,

it's much easier than having to tab and wait for the screen to reload." Although a few questioned

the aesthetics of the scrollable list format ("it's not that pretty"), almost everyone agreed that it

appeared to be easier to use, and easy to use was the definite preference:

- "My favorite websites are the ones that are just simple, functional, because if you start
  to try to get too fancy, it just becomes a hassle."
- "It's simple and easy to just click here."
- "I've been to a lot of mobile sites that are like this, I think this is the best way."
- "It's very easy to read and user friendly."

In short, while discussing the scrollable list format, simple, straightforward, and easy to use were

words used over and over by multiple students.

Based on Seeholzer and Salem's findings that students desired a site only a few clicks

deep,[7] the next questions students were asked was "how many clicks were too many?" The

answers they gave ranged from three to six clicks, reinforcing Seeholzer and Salem's finding.

However, the health care students' answers were almost always qualified with a statement

indicating that the number of clicks was dependent on intensity of information need, with one

student commenting that "for me, it depends on how badly I need the information" and another,

"if it's important, I'm not going to stop but I am going to get a little irritated," and a third,

"depends on how important what I'm trying to find is." These qualifiers seem to indicate that a

site deeper than six links was not optimal but was not necessarily a deterrent when an information need was critical.

Students were definitely interested in Ask-A-Librarian, RML's reference assistance service, stating that "if I cannot find a paper, I will go to Ask-A-Librarian to ask" and also, "I love the concept [of Ask-A-Librarian]"; however, ease of use also came up in that discussion. They wanted a front page Ask-A-Librarian link that would take them to another page with the option to chat, e-mail, text, or phone, so that help "would be right there at your fingertips," with one student indicating a preference for texting ("I can text, I can rip off a text in less than 30 seconds"). On the subject of phone assistance, participants did not want to be overwhelmed with choices, instead preferring a single phone number ("not all the departments, just a general contact number"). One phone number seemed to be important because of the student's "on the move" school and study life ("if I'm using my phone, I usually just use a general contact, because I'm generally moving, so I'll just click it, because your phone will go ahead and dial it and then [I] get directed to where I need to go"), or because of a lack of familiarity with what each library department actually does ("sometimes you don't know who you are looking for when you start out calling anyway and it's usually the easiest route, I've found").

*Practicality.* Another theme which emerged was a desire for practical information that students felt would be optimally accessed from a phone, although some things were mentioned by all groups and some only by members of one school. Requests for hours and holiday information to be accessible from the mobile site came from all groups. Rowland has four different schedules throughout the week, different hours during the summer, and is closed for holidays approximately 11 days a year, all of which make it difficult sometimes for students to know exactly when the library is open. In addition, UMMC is a commuter campus in an urban

area so that students often have significant travel times and don't wish to show up only to find that the library is closed. There were many comments about hours including:

- "Hours definitely."
- "Holiday hours would be fantastic, that would be the quickest way to get to it instead of having to sit down at a computer."
- "Hours and holidays schedule because I have most definitely gone to the library when it was closed before."

One practical application voiced only by those in the School of Graduate Studies involved individual study carrels. RML has 12 lockable carrels for individual study, which are evidently very popular with graduate students working on a thesis or dissertation. The carrels are available on a first-come, first-served basis, but these graduate students were frustrated when none were available ("a time or two when I will pack up and come to campus they're all checked out and you can't get as much done with a whole bunch of people"). The students wanted ideally to be able to reserve the carrels from a mobile website, but if that were not possible, to at least see what was available, expressed in the request for "a way for it to be updated when they were all full" because "a lot of graduate students would like to know before we walk all the way over there, if one's available," as well as "would just be nice if they were all taken, you would know before you left."

Students and faculty also expressed the need for practicality when asked about "quick links," a portion of the main website where links to specific high-use journals are available. They felt that the current quick links consisted of the more popular general journals and that to be more useful it should include subject/discipline specific titles. However, they also believed that the wide range of interests at UMMC meant that any list of quick links on the mobile website

would end up being too long and involved. Instead they preferred a box to enter the title of the specific journal they needed or a drop-down option to choose from among all electronic journals. Students also felt that library floor maps would rarely be used ("I don't think I personally [would] ever use the map"), although this belief might have been influenced by the size and configuration of RML, which has only two floors with all books and bound journals on one floor.

*Resource Accessibility.* When asked what specific resources they desired on a site, the top requests from each group were discipline specific; the medical students responded almost in total unison "UpToDate," while nursing students' desired a link to CINAHL, and the graduate students requested the study carrel reservation system. However, after initial requests, there was some consensus; all groups wanted PubMed ("I would use that [PubMed] more than the other things"), electronic journals ("I use the e-journals every day"), and the library's catalog ("being able to pull up a book to see if ya'll have it"). Although several students expressed an interest in links to electronic books, others seemed unaware that the library had e-books ("I didn't even know those existed"), indicating a need for RML to look for ways to increase awareness of electronic books.

Although students were enthused about having a mobile library website, all groups expressed a desire for the mobile site to include a link to the full library website, including these two comments: "I would definitely make it where you could access the full website as well and not just the mobile" and "option to go to the full website, which is nice in case there is something you can't find." This desire seemed to stem at least partly from bad experiences with other websites ("the most irritating thing in the world is sometimes you don't want to be on the mobile site; you'll click full site and it will still go back to the mobile site" and "sometimes it doesn't even have the option for a full site which is really irritating").

Students were also interested in knowing what resources were available in mobile format and which were not, stating that being able to limit to only mobile format resources would be nice if "you were planning on doing something strictly on your phone" and also "if I'm going to read something, I would much prefer to read it in mobile format." They envisioned a check box or drop-down option to limit some searches to just those resources available in mobile format; however, they didn't want to lose the flexibility of access to all databases and electronic journals. If the mobile website could support only one search mode, they would choose to search all electronic resources ("even if it was a format that I couldn't get on my phone, I would just write it down and remember to go back to it on my computer").

 *Research.* Contrary to Haefele's assertion that users do not want to "do in-depth research on a smartphone,"[4] a final theme that emerged was the interest students had in using their phone to research a question or topic, either because of necessity ("just because if you don't have your computer around and you needed to prove something or show a patient [something]") or because of the need to use spare moments of their day efficiently. Most students indicated that searching and saving would be the extent of the research process completed on the phone, preferring not to read articles on a small screen ("unless it's quick and if it's short, it's much easier to read it from your computer, and I don't even like doing that, sometimes I'll just print it out" and "it's nice to have the option if it's a shorter version but I'm probably not going to read a ten page article on my phone" and simply "I just don't like reading on [my phone]"). They would instead save the information for later ("if people are searching [on a phone], a lot of time you can just save it to another service like Evernote or save it to a bookmark so that you can go back and look at it later"). Only the medical students indicated that they would, in certain circumstances of scheduling and need, be reading articles on the mobile device ("I have pulled up articles

especially in clinicals because you'll have down time and you'll want to read about what you're doing").

*CONCLUSION*

This study confirms Seeholzer and Salem's suggestion that the individuality of academic institutions requires each institution considering a mobile website to query their particular student population about specific needs and desires.[7] All groups of participants expressed initial interest in discipline-specific resources or services (UpToDate for medical students, CINAHL for nursing students, and study carrel reservations for graduate students) which may or may not be available or applicable at other institutions. However, the discussions which followed that of specific resources seemed to cross discipline boundaries. This study found that health science students at UMMC are extremely interested in library access via a smartphone and like the students in Seeholzer and Salem's study, want more than hours and contact information on a mobile library site. Several findings mirror those of Seeholzer and Salem, including students' desire to at least start research on a phone (through access to PubMed, e-journals and databases), to have the option to request assistance from librarians, and to have links to the library's catalog, hours and holiday information, and the full library website.[7] Other findings differ; RML students were not interested in library floor maps and were willing to use a site more than a few links deep, particularly when they need specific information for an assignment or clinical duty. All students in this study were adamant about their desire for a site which was simple and easy to use with a minimum of what they perceive as time-wasting features such as icons or tabs. Libraries

that serve health science students should consider offering access in a mobile format after first gathering data about institution-specific needs and desires.

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