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Hunting for QR Codes: Linking Students to the Music Collection

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ABSTRACT

Libraries are exploring the use of Quick Response Codes, or QR Codes, to market to and connect users with libraries services. The University of X has been experimenting with QR Codes in an innovative way: to introduce first-year music majors to the physical music library materials via a QR Code scavenger hunt. This article will discuss the library literature on QR Codes and scavenger hunts, as well as the University of X's QR Code scavenger hunt from creation to assessment. Additionally, recommendations will be given for designing a similar pedagogical tool at your library.

INTRODUCTION

The recent proliferation of smart phones and tablets has led businesses and institutions to use QR Codes, or Quick Response Codes, to link customers to online content for marketing purposes. Libraries are also using QR Codes to advertise services and to help users access electronic resources. However, not many libraries are using this technology to link students with the physical collections. I have been experimenting with QR Codes to create a fun and interactive scavenger hunt assignment for Conservatory of Music students at the University of X. This assignment is specifically designed to improve students' information competency skills by exposing them to the variety of formats of potential sources for research available in the physical music collection.

The purpose of this article is to examine the literature on incorporating QR codes and scavenger hunts into library instruction. Additionally, the QR code scavenger hunt assignment at the University of the X will be described, which includes a small pilot project, official implementation, and assessment of student learning. The article will also include recommendations on instituting a QR code scavenger hunt at your own library.

A QR Code (Figure 1) can hold thousands of characters and it operates just like a library barcode—except a QR Code can easily encode a URL, a block of text, a phone number, or a text message. QR Codes were invented in Japan in the mid-1990s by the car manufacturing company Denso-Wave in order to track their manufacturing process.[1] QR Codes are attractive to marketers because they are free to create, it is easy to track usage statistics, and they can easily pull in potential customers in an engaging, non-intrusive way. Alexander Street Press uses QR Codes to promote their music streaming products by linking users to free content, such as playlists. In addition, subscribers to Alexander Street Press's music streaming databases can generate QR codes for individual tracks or playlists. Scanning the QR Code into a smartphone or tablet allows the user to instantly access the track or playlist.

LITERATURE REVIEW

The library literature on QR Codes mostly consists of articles that define QR Codes and their potential use for libraries.[2][3][4] Some articles highlight their own library's QR Code projects from implementation to assessment. Two common approaches include: linking users to help at the point of need and marketing library services and materials. For example, librarians at the University of Colorado at Boulder describe their pilot project of using QR Codes to link users to library maps, technology help, and library contact information.[5] Another example comes from Providence College where librarians use QR Codes to market their new mobile services as well as the American Library Association's Banned Books Week.[6] Most librarians were surprised at how easy and low cost it was to work with QR Codes.

While the articles indicate that there is some interest in QR Codes among library users, it is unclear yet whether or not these projects will demonstrate a return on investment. As Andrew Walsh states,

Preliminary results suggest…that students find even a fairly low barrier to use, such as downloading a free, readily available application onto their camera phone, a hindrance. They need convincing that any new service will bring them concrete, easily perceivable benefits before they will investigate how to use that service.[7]

Exploring the possibilities with QR codes can be easy and exciting; however, it is clear that there are still some challenges with user adoption that could dissuade a library from instituting a major QR Code program.

Libraries tend to use QR Codes to either blur the physical and the digital or to bridge the gap between physical and digital. However, there is not much discussion on using QR Codes to link the digital to the physical, such as using a QR Code to link to a web page on where to find the *Neue Mozart-Ausgabe* in the library stacks. Music librarians are advocates for physical formats. In the Association of College and Research Libraries' "Information Literacy Competency Standards for Higher Education," Performance Indicator 1.2 states "The information literate student identifies a variety of types and formats of potential sources for information."[8] One of the outcomes for this indicator includes: "Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)."[9] QR Codes could serve as a means for music librarians to inspire students to explore our physical collections.

The only article that ties a QR Code to a scavenger hunt for instruction is "Remaking the Library Information Hunt Using QR Codes," by a Erin Burns from Pennsylvania State University.[10] Burns incorporated the activity into two English sections. Using Kaywa,[11] a QR Code generator, she linked QR Codes to URLs and text answers, printed them out, and placed them in several locations around the library. When she put the students into groups, she made

sure each contained someone with a smartphone. Then she had all the smartphone owners download a QR Code reader. Each group was given a worksheet containing a list of questions. There were some technical glitches with the QR Code readers and some of the websites that she linked to were not mobile-friendly. Nevertheless, Burns states that she "really enjoy[s] the chaos that comes from these kinds of sessions." She adds that the activity drove students to be "more involved, even if they could not find all the codes or get all the answers."[12]

The library literature on scavenger hunts within the context of academic libraries is small and generally consists of the negative views that librarians and teaching faculty have regarding these types of assignments.[13] [14] Scavenger hunts can easily go wrong because they have the potential to cause a great amount of stress and frustration for reference and circulation departments—especially when the size of the class is large and the instructor creates the assignment instead of the librarian. [15] Additionally, like any class assignment or activity, scavenger hunts become inefficient pedagogical tools if they fail to motivate students by not connecting to their values or goals, or by appearing inauthentic.[16]

PILOT PROJECT: MUSIC MANAGEMENT COURSE

My original goal for the QR Code scavenger hunt was to institute it as an activity in the course, "Survey of Music History I: Antiquity to 1750." This is a required course for all music majors and the professor and I have been trying to come up with an effective way to introduce students to the physical library collection. As the music librarian, this course is very important because it is the only Conservatory class required for all music majors that includes a mandatory library session. The music history, music management, and music therapy majors will attend a few more library workshops, but I may not see the performance or jazz studies majors in the library classroom again.

Because this course enrolls 60 students per semester, I started small with a pilot project for the four students enrolled in an "Introduction to Music Management" course. Thankfully, the professor is always willing to let me try something new. The previous year, I had created a scavenger hunt for this same class using only a handout containing instructions. I greatly overestimated the students' ability to search the library's catalog and find the specific materials. Thus, my assignment fell into the trap of being an ineffective activity as discussed in the literature review. It ended up taking up too much time and the students were only able to complete a small portion of the hunt. Reflecting upon this failure, I wanted to make the new QR Code scavenger hunt as simple and as relevant as possible.

For the pilot project, I created four separate assignments—one for each of the four students, which focused on sound recordings, scores, books, or periodicals. Each assignment contained two tasks that instructed the student to find a specific item. They were also asked to take a photograph of the item and answer a short question about it. Using my basic HTML skills, I created a web page for each task. (Figure 2) After I created the web pages, I used Bitly, a free service, to shorten my web links and generate QR Codes for each of them. Bitly also allows users to manage their shortened links as well as view real-time traffic and analytics data.[17] Next, I printed out the QR Code for each web link, tested it to make sure it was retrieving the correct web page, and attached it to the items that students needed to find for the assignment. My library recently purchased four iPad 2s for the purposes of reference and instruction. I gathered up all four iPads, installed a QR Code reader on them, and made sure they were connected to the Internet. This allowed me to skip Burns's step of asking students to use their own smartphones.

When the class began, I assembled the students in the library classroom. I gave a quick tour of the library with an emphasis on the materials they would need to find for the scavenger

hunt. Back in the library classroom, I explained QR Codes and the activity. The students seemed

very excited when I handed them each an iPad. Once the students received the worksheets that

contained their first QR Code, they scanned it with the iPad's QR Code Reader application, and

then they were off. I stood in the lobby of the library with the professor to assist anyone having

technical difficulties or issues understanding the tasks. After they completed the QR Code

assignment, we returned to the library classroom and discussed what each person found.

Reflecting on the class, there was one glitch that I had not anticipated—Internet

connectivity problems. While the network in our library usually works well for laptops, this

does not always extend to Apple products, such as iPads. A couple of students had difficulty with

getting the URLs to load and, as a result, could not retrieve their next task.

As part of my short class evaluation I asked students "What was one useful thing they

learned?" answers ranged from specific items, such as "Where to find Billboard magazine," to

broad ideas, such as "I learned where the music resources are." Every student answered "yes" to

the question, "Did the QR Code Assignment help you get more acquainted with the library and

the library services?" Lastly, in response to the question "How fun or entertaining was the QR

Code Assignment," on a scale of one to five, with five being "very fun" and one being "not fun,"

the average score was 3.2. One student informed me she would have rated it as more "fun" if the

Internet had worked. Despite this, the professor and I judged the assignment to be a success and

a huge improvement from last year's scavenger hunt in terms of instructional design and student

learning. Following the pilot project, I felt confident enough to unleash an updated version of

this activity on students enrolled in Survey of Music History.

OFFICIAL LAUNCH: MUSIC HISTORY SURVEY COURSE

As previously stated, the "Survey of Music History I: Antiquity to 1750" typically contains approximately sixty students each semester. Since the two library classrooms hold between 25-35 students at one time, the professor always divides the class into three groups of about 20, which is a much more manageable class size for this type of workshop. The three sessions are held outside of the class and last about sixty minutes. Before incorporating the scavenger hunt activity, my workshops for this class focused only on the electronic resources such as the library catalog, Naxos Music Library, and RILM Abstracts of Music Literature. I concluded class with hands-on practice where students worked independently on a worksheet similar to the graded library project they would later receive. The library projects require students to search the library's resources and answer questions about their search results. Successful completion of the library project demonstrates that students satisfied my two learning outcomes:

1. Students will recall the various library-licensed music databases in order to select and prepare repertoire or research a music-related topic.
2. Students will understand the complexities of searching for music in the library's catalog in order to perform effective searches for scores and recordings.

The library workshop and the library project did not require students to engage with the library's physical materials.

After getting permission from the instructor to insert the scavenger hunt activity, I decided to tweak the agenda of the workshop and add a third learning outcome:

3. Students will use library catalog records to locate various music materials in the library in order to find materials for performance or study on their own.

In comparison to previous workshops for this class, I reduced the amount of time spent on article databases, such as the International Index to Music Periodicals—especially since the workshop was not tied to any sort of research project. I also removed the hands-on practice to allow for more time for the activity. Within the agenda of the class, the scavenger hunt was last following an introduction to the library's music electronic resources. Unlike with my pilot project, there was no time for a library tour.

The scavenger hunt that I created for this class was different from the pilot project in several ways. I created five separate assignments for sound recordings, scores, books, music reference and current periodicals, and older books and bound periodicals. Each assignment contained three tasks. Instead of asking students to take a photograph of the item, I instructed them to bring the items with them to share with the rest of the class. Rather than have the QR Codes link to a web page that I created, I linked them directly to records in the library catalog so that they could practice finding the title, author, call number, and location.

After the wireless issues that I experienced with my pilot project, I worked with the Systems and Technology Department to ensure that the wireless issues were resolved. Nevertheless, I incorporated a backup plan by printing out the library records and inserted them into the cover of the appropriate item. Thus, as long as the groups successfully scanned their first QR Code in the library classroom, they would be able to complete the assignment even if the iPads failed to connect with the wireless network elsewhere in the library.

I divided students into groups of three to five depending on the size of the class. Each group was given an iPad, an instruction sheet containing the first QR Code, and a map of the library. In all cases, the groups successfully completed the activity given the time allotted. In general, the groups assigned to books typically finished first while the groups assigned to scores

or sound recordings tended to get lost or confused with the various locations for items such as miniature scores and LPs. The groups who ventured down to the basement for older books and bound periodicals typically lost Internet connectivity with the iPad, but were still able to complete the assignment due to the backup plan. During the activity I ended up doing several laps around the library to check in on groups. This was a bit exhausting.

When all the students returned to the classroom, I asked each group to explain what they found and any challenges they encountered. At this point in the class, students were clearly getting anxious to leave, so it was not easy to keep them engaged in the class discussion. Despite this, some students expressed interest and excitement to discover the multitude of library resources available to them that they were previously unaware of.

While creating and implementing the scavenger hunt, I tried to tap into student motivation because I believed that this would be the best means of success. Following the chapter "What factors make students learn" from the book, *How Learning Works: 7 Research-Based Principles for Smart Teaching*,[18] I tried to incorporate several of strategies suggest by research, including:

- Connect the Material to Students' Interests: The library materials used in the hunt were all related to music. I tried to select some unique materials, such as a book written by a Conservatory professor. Also, students are typically interested in new technologies, such as iPads.

- Provide Authentic, Real-World Tasks: The QR Codes were linked to library records, so that they could practice the real-world task of finding the call number and location.

- Show Your Own Passion and Enthusiasm for the Discipline: Teaching about the library and research is a deep passion of mine and I try to express this to every class I teach.

- Create Assignments That Provide the Appropriate Level of Challenge: By all accounts, the activity was fairly easy to complete. I wanted each group in order to attain success to build students' confidence.

- Give Students an Opportunity to Reflect: We ended class with a discussion of what each group found and any challenges they encountered.

There is no secret way to motivate each and every student. In fact, there were some factors that thwarted student motivation: while students did receive credit for attending the session, it was difficult for me to directly connect the activity to their current academic lives. The professor usually helps me with this, but this time she was unable to attend the sessions. Also, I did not offer a prize to the group that finished first because I was concerned that students would rush through the activity. Motivation can work both for and against us.

ASSESSMENT

Following the activity, students filled out an electronic evaluation of the class. I asked three questions pertaining to the QR Code scavenger hunt, which had been modified from my pilot project evaluation. The first question was "Did the QR Code activity help you get more acquainted with the library and the library services?" Out of my 55 responses, 47 (85 percent) said "Yes," five (9 percent) said "No," and three (5 percent) said "Not sure." (Figure 3) The second question was "How fun or entertaining was the QR Code activity?" Students could select a number between one and five, with one as "not fun" and five as "very fun." Only one (2 percent) student chose "not fun." Three (5 percent) chose number two, 19 (35 percent) chose number three, 20 (36 percent) chose number four, and 12 (22 percent) chose number five. (Figure 4) The average rating was 3.7—slightly higher from the pilot project average of 3.2. The third question was "List any technical issues you had with completing the QR Code Activity." A

few commented on issues with the Internet access in the basement while others appeared to have problems getting the QR Code scanner to work, but all were still able to complete the assignment.

There is no way to effectively assess student motivation and learning, especially in a one-shot library session, but because all the groups were able to complete the assignment and 85 percent of the students felt more acquainted with the library resources, I believe that this activity achieved my third learning outcome. I intend to continue this activity next year with some possible tweaks. I may offer a reward to all the groups that finish the assignment, which may increase students' extrinsic motivation. At this point there appears to be no reason to change the structure of the activity.

RECOMMENDATIONS

Based on my experiences with this assignment, the following are my suggestions for recreating this at your own library:

- If your institution does not have iPads or similar mobile devices that can scan QR Codes, you can ask students to use their smartphones. There is a good chance that in a normal-sized class, at least five students will have a mobile device. Make sure you allow extra time for students to download and test the QR Code scanning application.

- Link your QR Codes to mobile friendly websites.

- No matter how well you plan, technical issues will arise. Do a pilot project to catch the major issues and build from there. You could also ask a student library assistant to test the assignment to anticipate problems.

- Try to find the right balance of making the hunt challenging and relevant—not confusing, too long, or tedious.

- Incorporate materials into the scavenger hunt that might interest students. For example, my activity included finding a music therapy dissertation written by a recent alum, a book written by a Conservatory faculty member, and a recording by a famous alum at the University of the X.

- Ask a student library assistant, colleague, or the instructor to help keep track of equipment and students during the session.

- Giving a tour prior to the activity is not necessary. In some ways, forgoing the tour makes the activity more realistic since the students are thrown into a situation where they have to find the answers for themselves. Nevertheless, make sure you at least provide a map, printed directions, or verbal instructions and that you periodically check to make sure no one is lost.

- In designing your activity, think about how you can best leverage student motivation.

CONCLUSION

A QR Code Scavenger hunt can be an engaging way for music librarians to give students the opportunity to explore the plethora of materials and formats available to them in the library. At the University of X, this activity was found to be successful for two freshman music courses. Incorporating scavenger hunt activities and the latest technology, such as iPads, into the library classroom can be exciting, but it can also be a challenge due to the large amount of preparation, the small amount of class time, and the risk of failure. Nonetheless, in our never-ending quest to foster information literacy at our institutions, librarians must continually hunt for ways to engage our students.

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NOTES

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