



CHAPTER 4

Selfie as Guide

Using Mobile Devices to Promote Active Learning and Student Engagement

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Introduction

Engagement is a big buzzword on college and university campuses these days, and libraries are no exception. While librarians frequently turn to pedagogical techniques such as active learning in order to increase student engagement during information literacy instruction sessions, far less has been written about transforming an old standby: the library tour. Librarians at Texas A&M University took advantage of an unexpected opportunity to acquire mobile devices in order to develop a pilot “selfie-guided” tour that moved librarians out of the “sage on the stage” tour guide role. Instead, this new tour required students to form teams and use library-provided mobile devices to tour the library on their own, answering questions about different library spaces and services, and to take selfies in different library spaces, which were then shared with the class. The selfie-guided tours challenged students to navigate library spaces on their own, to engage actively with library staff in order to answer their assigned questions successfully, and to work together and use their creativity in taking selfies.

Library Tours as Academic Library Outreach

Library tours are a popular method of introducing students to academic libraries. By giving users a broad overview of the library's physical layout, website, and collections, library tours can help orient students to the library's space and resources (Ingalls, 2015). Numerous articles have cited the benefits of tours in academic libraries, with the most frequently discussed benefit being the familiarization of students with the physical layout of the library's facilities, collections, and resources (Foley & Bertel, 2015; Kearns, 2010; Sandy, Krishnamurthy & Rau, 2009; Sciammarella & Fernandes, 2007). Tours make students aware of library services in context of their physical location, and students can practice seeking assistance from library staff (Foley & Bertel, 2015; Kearns, 2010; Sciammarella & Fernandes, 2007). It has also been noted that tours that take advantage of technology can demonstrate for students how to find online library materials and databases (Kearns, 2010). Understanding the physical layout of the library, and its collections and services, demonstrates to students how the library can assist them in their collegiate studies. This can make students aware of the resources available to them at the early stages of the research process and also help them develop a foundation on which to build additional research skills (Kearns, 2010; Sciammarella & Fernandes, 2007).

A tour can also have a positive impact on students' perception of the library. The tour might be a student's first encounter with an academic library and can reduce anxiety related to using the library (Cairns & Dean, 2009). Marcus and Beck (2003) found that after students at Queensborough Community College of the City University of New York took a tour, they viewed the library staff as helpful and enthusiastic and the library atmosphere as pleasant and conducive to studying. Showing students a library's welcoming, friendly environment helps reduce anxiety by demonstrating practical applications of how the library can assist students with their studies.

Active Learning and Mobile Technology

Tours are typically passive learning experiences; the tour guide speaks while participants listen. However, learning theory shows that passive learning isn't always the best strategy for retaining information. Instead, active learning is commonly described in the literature as a successful pedagogical alternative. Reports dating back to the 1980s and 1990s note that, "more learning occurs when students are actively engaged in the learning process" (National Institute, 1984, p. 19) and suggest strategies for incorporating active learning into the college classroom (Bonwell & Eison, 1991). More recent research continues to confirm that active

learning techniques result in improved instructional outcomes in a variety of disciplines (Prince, 2004; Michael, 2006; Freeman et al., 2014). Academic librarians have also embraced active learning, and research has confirmed the efficacy of active learning as a technique for improving library instruction outcomes. Druke (1992) found that “students in the active learning classes incorporated more relevant library research into their final projects” (p. 82). Detlor, Booker, Serenko, and Julien (2012) confirm that “active [information literacy instruction] has a direct effect on yielding positive student learning outcomes, while passive [information literacy instruction] does not,” and they suggest that librarians may want to “limit or even eliminate the delivery of passive [information literacy instruction] altogether” (p. 156).

Many academic librarians have enthusiastically adopted active learning as a pedagogical tool and developed activities to engage students in the classroom, as evidenced by the proliferation of books that collect library instructional activities (Sittler & Cook, 2009; Cook & Sittler, 2008; Fawley & Krysak, 2016). Recently, librarians have also been harnessing the capabilities of mobile technology in order to develop new active learning strategies to engage library users. Several librarians have reported success using clickers or mobile phones to elicit student responses and heighten student engagement (Burkhardt & Cohen, 2012; Hoppenfeld, 2012). Other librarians have used iPads in reference transactions in order to provide students with the opportunity to work directly with library resources and therefore increase student engagement (Maloney & Wells, 2012). Additionally, librarians have deployed iPads and tablets in library instruction in order to encourage students to engage with library resources (Havelka, 2013; Gilbeault, 2015), practice concept mapping (Calkins & Bowles-Terry, 2013), or participate in scavenger hunts (Miller & Putnam, 2015).

Mobile devices also have the potential to help students connect with information as creators, not just consumers. Lippincott (2010) astutely notes:

As librarians work with students as part of information literacy classes, at service desks, and in cyberspace, it is important to realize that for students, the mobile device will increasingly become an instrument for creation of digital content, and not just a device for access to content. Students can use smartphones to create short videos, to type a blog entry for a class assignment, to “tweet” in response to a question posed by a professor or to create a group poem, or to take photos or record audio to embed in a PowerPoint presentation or text document (p. 210).

Mobile devices can be used as a tool to engage students in active learning even when participating in traditionally passive learning activities such as library tours.

Mobile Technology and Library Tours

Self-guided tours of academic libraries have been around for more than forty years. As summarized by Oling and Mach (2002), self-guided tours using printed booklets gained popularity among academic research libraries in the late 1960s and early 1970s. Technologies evolved, and self-guided tours began to incorporate websites with virtual tours in the 2000s. Early virtual tours allowed the user to tour the library from a stationary computer. Today's self-guided tours are incorporating mobile technologies like MP3 players and tablets, which allow guests to learn about the library while moving through the physical spaces. When one is researching self-guided tours that incorporate mobile technologies, two types of tours emerge: the first type is unmediated and available to be taken by the student anytime, and the second type is game-based tours.

Unmediated and asynchronous tours typically involve audio or video tours that students access via an MP3 player or tablet. The majority of these tours can be taken whenever the student is free and without a librarian facilitating the tour, freeing up time for librarians to complete other activities. Virginia Tech and Brigham Young University (BYU) have utilized Quick Response (QR) codes to create library tours. QR codes are a type of mobile-ready barcode that launches a website, audio file, or application on the mobile device. Students use their mobile device to take pictures of the QR codes to access audio or video files that explain the different service points or resources in the library. Virginia Tech and BYU also provide post-tour quizzes for students to complete. As BYU's mobile tour evolved, the audio files were replaced with video files accessible with iPods (Virginia Tech, n.d.; Whitchurch, 2015). The iPods were later replaced with affixed iPads "programmed to show the video for a specific tour stop/library location" (Whitchurch, 2015, *Mobile to Affixed iPad* section, para. 1).

Besides QR codes, some universities use audio or video files downloaded onto mobile devices. The University of Sheffield, the University of Alabama (UA), the University of Tennessee at Chattanooga (UTC), the University of South Carolina Upstate (USC Upstate), and the University of California, Merced (UCM) created video or audio recordings for patrons to listen to as they toured the library. For some of these tours, markers were placed around the library to inform students where they should stop and listen to a particular recording. The University of Sheffield and USC Upstate each wrote a script in which a student interacts with different librarians or library staff members, giving the audio a conversational feel. Most of these schools purchased iPods for students to check out and use for the tour, although UA purchased Sony Video MP3 media players. UTC, USC Upstate, and UCM targeted their tours to first-year student programs, and they also created a posttest quiz to assess students' familiarity with the library (Cairns & Dean, 2009; Kearns, 2010; Mawson, 2007; Mikkelsen & Davidson, 2011; Sandy et al., 2009).

Game-based tours typically take the form of a scavenger hunt or treasure hunt. These tours have been implemented at State University of New York at Buffalo (SUNY Buffalo) and North Carolina State University (NCSU). Students take photographs of different areas in the library with an iPad or iPod Touch. At SUNY Buffalo, early versions of the tour required students to upload photos to a common Flickr account, while later iterations of the tour used GooseChase, a free photo-based scavenger hunt app. At the end of the tour at SUNY Buffalo, the students described the photos to the class. NCSU's students submitted their text and photo responses using a shared Evernote account, and the librarians graded the scores using a Google Docs spreadsheet (Burke, 2012; Foley & Bertel, 2015; North Carolina State University Libraries, 2014).

Additionally, some universities used a mobile app called SCVNGR to aid their orientation tours. SCVNGR was a social location-based gaming app for iPhones and Androids. Users had to be in a location to search for activities and challenges and then perform those challenges in the specific location to earn points or recognition. SCVNGR is dissimilar to a scavenger hunt because "rather than getting clues and hints like in a traditional scavenger hunt, this game is more focused on activities within a location instead of finding the location" (Pagowsky, 2013, Why SCVNGR? section, para.1). The University of Arizona (UAZ), University of California, San Diego (UCSD), Oregon State University (OSU), Boise State University (BSU), and UCM all experimented with SCVNGR. Some of these schools, including UAZ, UCSD, and UCM, used SCVNGR for large-scale, campus-wide orientations. This app was good for large programs because it did not require librarians and library staff to commit a great deal of time to help with the tours. OSU used SCVNGR for its international student orientations. As part of an assignment at BSU, students were asked to create their own SCVNGR orientation. UAZ also used SCVNGR for individual classes (McMunn-Tetangco, 2013; Pagowsky, 2013). Today, SCVNGR is called LevelUp, a mobile-payment application, and no longer appears to support the location-based gaming features that made it popular with libraries for orientation tours (LevelUp, n.d.).

The project described in this chapter adds to the current landscape in several ways. First, most mobile technology tours are designed for library orientations outside of the normal classroom experience. There are a few examples in the literature of incorporating a virtual library tour in an information literacy one-shot class, but many struggle with the limitations of the traditional fifty-minute session. This project aims to show that thoughtfully created library tours can meet learning outcomes for one-shot classes. Additionally, the project focuses on the use of mobile technology to increase student engagement in a particular population: academically at-risk students. Thinking carefully about the specific student audience, their learning needs, and their challenges helped the authors design an interactive library tour customized for a specific population.

Developing the Selfie-Guided Tour

The Texas A&M University Libraries provide numerous tours of its five libraries to various college classes, high school groups, and other community groups. The main library, the Sterling C. Evans Library and Annex, receives the bulk of the tour requests, which are coordinated by the University Libraries' Learning and Outreach (L&O) department. As library staff deliver these tours, there is an overall goal of iterative improvement for all library tours. Feedback is collected after every tour for the purposes of programmatic improvement, as insights gained from one tour group are used in planning future tours for other groups.

In the summer of 2014, L&O modified its traditional, in-person, staff-led tours in order to provide the students with a more impactful experience. L&O collaborated with the University Writing Center, Maps and GIS Collections, and Media and Reserves staff to implement stations that were tour stopping points, loosely modeled after the concept of learning centers. During the course of each tour, the library staff member serving as tour guide would take the group around the library and make a stop at each station. The staff members at that station would give students a personalized welcome, a brief presentation, and sometimes a "show and tell" of their collections and resources. The tour guide provided the information for all of the other library resources and service points covered by the tour. This modification encouraged more interaction and familiarity between students and staff at those individual service points within the library. However, students were still passive recipients of information for much of the tour.

In 2013 and 2014, L&O also began to experiment with strategies for integrating mobile technology into its library tours. L&O staff used six first-generation iPod Touches for scavenger hunt tours for the library's Academic Integrity curriculum and for some high school groups (Texas A&M University Libraries, 2014). As in the NCSU (2014) model, students took photos at various library service points using the iPod Touches, and they earned points for each photo. One or two library staff members monitored the photos the students uploaded from the iPods to Evernote and used a Google spreadsheet to tabulate points for competing teams. Another library staff member downloaded the students' photos from Evernote and uploaded them into a PowerPoint presentation. After the scavenger hunt, library staff used the completed PowerPoint presentation as they led the class on a virtual tour of library spaces, which was intended to provide additional information about library services and resources available at the locations pictured. The scavenger hunt and the use of student photos made for a fun and engaging activity. Both students and instructors responded very positively to the scavenger hunt tours, as the verbal and written feedback showed a high level of engagement and the students' photos demonstrated their enjoyment in taking their own photos and viewing pictures from other groups.

Although the iPod Touch scavenger hunt was successful in terms of student engagement, L&O experienced some challenges with this model. The first significant challenge was time. The Academic Integrity sessions were fifty minutes long, and the scavenger hunt portion usually took twenty to thirty minutes. In order to have sufficient time for the virtual tour, the student grades and the PowerPoint presentation needed to be ready as soon as the students finished the scavenger hunt. However, this tight turnaround was difficult because creating the PowerPoint took multiple steps, the grading system was labor-intensive, and the entire process required multiple software applications. Due to staff scheduling limitations, L&O did not always have the preferred number of staff members to score and process the pictures in a timely manner. The second major challenge L&O experienced was hardware limitations. There were only six iPod Touches available, which limited the size of classes to which L&O could offer the scavenger hunt tours. Despite these challenges, L&O learned that self-guided tours and the use of technology were desirable elements for future tours because assessments determined that students found this type of tour to be more engaging than traditional library staff-led tours.

Making the Pitch for Technology

Because the small number of mobile devices was a major limitation for the library's technology-based self-guided tours, L&O knew that it needed more mobile devices. The six first-generation iPod Touch devices were purchased in the late 2000s, upgrading the devices to a recent iOS was becoming increasingly difficult, and many apps and websites wouldn't load properly. It was clear that the iPod Touches needed to be retired or replaced in order to continue exploring mobile technologies for instruction.

L&O took the opportunity to review the current mobile technology choices. Since an upcoming library renovation would demolish several of the library's instruction spaces for an unspecified time, the timing was fortuitous. There was a clear need for mobile technology not only as a tool for active learning, but also as a way to provide temporary instruction spaces during the forthcoming renovation. While librarians enjoyed the portability of the iPod Touch, its screen size limited its utility. Librarians found it difficult to search the catalog, website, or databases, so they were rarely used for typical library instruction purposes. L&O decided that iPad Minis provided the advantage of being portable for use during virtual scavenger hunts, yet they were large enough for searching and navigation during information literacy classroom instruction.

The Director of L&O submitted a proposal to purchase twenty iPad Mini 2 devices. The proposal emphasized using mobile technology to solve a myriad of needs (e.g., pop-up instruction during the renovation, engagement with new technologies, revising standard walking tours, and more). The University Librar-

ies' IT department, Digital Initiatives (DI), helped supply specifications for the devices and ordered them through a pre-existing university contract. As L&O did not anticipate the devices leaving campus Wi-Fi-enabled buildings, it opted to purchase the 16 GB Wi-Fi-only devices. In addition, charging and syncing management was addressed through the purchase of a Parasync i20 docking station. The centrally charged docking station came with twenty specialized cases for the iPad Minis to seat into the dock without individual cables, which made it possible to charge all devices simultaneously. With an added piece of software, L&O was also able to deploy a centralized app load. Finally, DI supplied a rolling cart to house the docking station, iPads, and other technology, such as a mobile projector. Once the initial setup was complete, L&O had a truly mobile classroom.

Texas A&M University Gateway Program

The first test case for the new mobile set-up was a transformation of the traditional library tours provided to the University's Gateway program. The Texas A&M University's Aggie Gateway to Success (Gateway) program is a provisional admission program that enrolls students over the summer to provide them an opportunity to demonstrate their ability to succeed academically in college-level courses (Texas A&M University, 2016a). As part of their participation in the Gateway program, students take the course STLC 289, which focuses on "selected topics in academic development and improvement" (Texas A&M University, 2016b).

For the last few years, each section of STLC 289 has visited Evans Library near the end of the semester in order to familiarize students with the library as an academic resource that can contribute to their success. Prior to 2015, the library provided various versions of in-person, staff-led walking tours for the Gateway classes. By walking to, and through, different service points, students learned how to locate and access the library's collections, services, and other resources, and both students and course instructors provided positive feedback about the library tours. However, Gateway students represent a population of academically at-risk students. For this population, engagement with the help services and resources in the University Libraries can make a dramatic difference in their future academic success. At-risk students can struggle with the traditional classroom experience, typified by lecture-style teaching. Passive library tours were replicating the lecture experience, a pedagogy ill-suited for these students. In an effort to address these concerns, the authors wanted to make the tours more fun, interactive, memorable, and impactful for the Gateway students.

Mobile Technology and Gateway Tours

With some previous experience using mobile technologies for self-guided tours, the authors sought to redesign the Gateway tour. The first step was identifying the library learning outcomes for the tour:

- Students will become more familiar with the Evans Library and Annex physical layout.
- Students will remember basic information about eight key library services and spaces.
- Students will explore a specific library space or service and be able to teach classmates basic information about that topic.
- Students will use mobile technology to incorporate visual elements into a presentation.

The authors created an alignment grid to work backward from the learning objectives to design the session activities (see appendix 4A). After discussing elements that support active learning, the authors determined that in order to encourage student engagement, they wanted to make students responsible for their own learning by having the students lead the tour. Time would not permit students to do a complete self-guided tour, so the tour was designed to send the students in groups to different service points and spaces in the library. Librarians would ask each group to take selfies and answer questions in each area in order to present to the class about the area they visited. By asking students to work in groups and then share their new knowledge and their selfies with the class, the authors intended to foster both group and individual accountability for learning. This accountability was an important element of the selfie tour design because research indicates that group and individual accountability increase the likelihood of fostering a sense of personal responsibility (Johnson & Johnson, 2009). Asking students to present what they learned to their classmates is a powerful way to hold students accountable to each other for their learning. It also gives the librarians a new perspective about the library and what captures the students' attention as they hear what students found unique or helpful about a particular service or space.

In addition to designing the tour activity, the authors needed to develop a strategy for assessing student learning. The Gateway instructors typically incorporate information from the library tour into a quiz later in the semester, but it was also important to develop another assessment method that would gauge learning within the confines of the library tour. Because the tour was designed to engage students in active learning using iPads, the authors determined that the same technology could also be harnessed to capture visual markers of student engagement in the form of selfies. These photos inspired the title of the new tour: the "selfie-guided tour."

The Selfie-Guided Tour

After L&O received the iPads and confirmed the new lesson plan with the STLC 289 instructors, the authors were ready to implement the new tour. Each class began with one or two librarians introducing themselves and explaining the objectives of the tour. The students then were broken up into seven teams with roughly four people in each team. The librarians distributed and then explained a handout that included (1) instructions for the activity, (2) directions on how to get to the group's designated service point, and (3) three to four prewritten questions the students would have to answer. Librarians also distributed one iPad per group and spent a few minutes logging the students into the iPads. Next, the groups ventured forth to find their assigned service point or space, which included areas such as the library circulation desk, course reserves, quiet study spaces, and more.

When the students arrived at their service point or space, they used the iPad to take a selfie. The students then sought the answers to their questions and were encouraged to seek help from librarians and library staff. The students were also given instructions that if the service point was busy serving other patrons, they were to use the library website or chat service to answer the questions. Once the students had their selfies and answers and had sufficiently explored the space or service point, they returned to the library classroom. Librarians guided them through the process of adding their selfies to a shared iCloud folder so the photos could be presented to the class. Once all groups had returned to the classroom and uploaded their selfies, each group presented their selfies to the class and shared what they had learned about their assigned service or space. Occasionally, librarians supplemented student presentations with clarifying information about a service point or space or additional information that students may have missed. While each group presented, the other students took notes on their classmates' presentations, as this material could be on an upcoming quiz. When the class session was over, the librarians logged the students out of the iPads and returned the iPads to the charging station.

Assessing the Selfie-Guided Tour

The library had no formal assessment plan for previous versions of the Gateway tours, so there were no direct benchmarks against which to measure the selfie-guided tours. In order to evaluate the impact of the selfie-guided tours, an assessment methodology was implemented that incorporated both formal and informal assessment. Formal assessment was conducted by the Gateway instructors in their classes, in the form of multiple-choice and short-answer quizzes that were formulated by the instructors based upon tour content. Some instructors opted to share quiz data with the librarians. While this data indicated that students had good retention of the information shared during the library sessions, it is not pos-

sible to determine whether the results indicate an improved outcome due to the lack of comparison data. However, informal assessment measures were also used in order to determine whether the selfie tours accomplished the objective of increasing student engagement during the library sessions. The selfies taken by students during the tours served as informal assessment artifacts that indicated that students engaged very positively during the selfie-guided tours. The creativity displayed by the Gateway students went far beyond expectations; students posed in highly creative (and sometimes acrobatic) ways and even engaged staff members to participate in their pictures, which led to unanticipated but highly desirable relationship building between students and staff. Many student groups took more pictures than were required and engaged their competitive spirits to have the best selfies. The positive and even boisterous reactions displayed by their classmates during the student presentations indicated that their efforts to create the best pictures were much appreciated.

Although the positive reactions of students were one measure of success, the reactions of instructors and collaborators were also important. Many Gateway instructors reacted positively to the selfie-guided tour sessions and commented on the students' level of engagement. Collaborators within the library also had a positive reaction; for example, a staff member from one department that served as a stop on the selfie-guided tour remarked, "All of the admin staff loved the changes, and the integration into the course. Very smart idea!" However, the tour posed some administrative challenges, especially for Gateway instructors. The instructors had to develop their in-class quizzes based upon the information conveyed in the student presentations, which could vary from one class to another. These types of challenges could be mitigated in future Gateway tours by working with library departments to help them emphasize a consistent message from one group to another and also by simplifying the amount and type of content delivered to students to ensure a consistent message from the library.

Lessons Learned and Future Directions

Although students, instructors, and librarians all responded positively to the Gateway selfie-guided tour, the authors plan to make changes to future iterations of the tour in order to make them easier for both students and librarians. Mobile technology will continue to play a vital role in the library's student engagement strategy, but refining the approach will help reduce challenges and improve outcomes.

In the initial version of the selfie-guided tour, the authors used iCloud Photo Sharing in order to collect and share student photos. Although this worked fairly well, other apps have since been tested, and it was determined that the app Padlet may work better for the selfie tours because its photo-sharing process is more

streamlined. By switching to a new app, the authors hope to minimize the amount of time needed for setup at the beginning of each class as well as the amount of time needed to reset the iPads between classes. This will both maximize the amount of time devoted to learning during the session and provide librarians with extra time to recover, especially between back-to-back classes. The authors are also in the process of revising learning objectives related to the students' familiarity with library services. Although it may be easier to quiz students about library content where there is an easily identifiable correct or incorrect answer, such as the hours a particular library building is open, this type of content is also likely to be the most easily searchable, and therefore not necessarily important to memorize. Instead, the authors are working with representatives from service points around the library to identify the information about their services that they most wish incoming students to know and are developing a plan to convey only the most necessary information to students during the selfie-guided tour.

In addition to refining the selfie-guided tours, L&O has been identifying new uses for the mobile devices. Most recently, the iPads were used as an assessment tool. Library volunteers were stationed at library exits during the library's annual fall Open House event and passed out iPads preloaded with online surveys. This method of gathering feedback was quite effective, and L&O has plans to use the iPads for assessment at future events. Mobile technology will also play an important role during and after the library's renovation project. Once the construction begins in late 2016 and library learning spaces are disrupted, L&O anticipates making heavy use of the mobile technology cart. The typical class size on the Texas A&M campus hovers around forty-six students; however, L&O purchased only twenty iPads as it anticipated that many students would come to an instruction session with their own tablet or laptop device. Mobile devices would be used as a supplement in a BYOD (bring your own device) model during the construction. After construction is complete, the renovated spaces will include both wired library classrooms and flexible BYOD spaces with mobile technology. As L&O gains a better understanding of how these new spaces will impact the library's instruction program, it may look at expanding the number and types of mobile devices.

Additionally, there is a small group of librarians and staff interested in creating an unmediated virtual library tour post-renovation. Prospective students, parents, and alumni often approach the library's front desk asking for individual library tours, which can pose a burden for the library's busy desk staff. However, the planning and creation of a virtual tour is on hold until construction is completed as many of the library's interior spaces will go through dramatic transformation. Until that transformation is complete, stakeholders are actively researching tour technologies and mobile applications that could be used to enhance learning during virtual tours.

Conclusion

Teaching is a creative endeavor. Good teachers experiment with new ways of exploring their topic, presenting ideas, and engaging in learning activities. However, it is all too easy to rely on previous lesson plans, rehash last semester's PowerPoint, or revert to a traditional walking tour of the library when pressed for time and resources. Introducing technology can serve as a positive disruption, shaking instructors and tour leaders out of these fixed systems. In the case of library tours, introducing carefully selected mobile technologies enabled the authors to flip a historically passive tour of library facilities into an active learning experience. Increasing student engagement through the use of selfie-guided tours re-contextualized the library as a fun and welcoming place for the Gateway students, an academically at-risk population. These students in particular warrant special consideration when thinking about library instruction. Due to their status as provisionally admitted students, they may come to the library with increased levels of library anxiety and fear of failure. Using a familiar construct, the selfie, and a familiar tool, the iPad, the authors hope to reduce the risk of failure while increasing active learning.

Introducing technology into library tours has also been a positive experience for library instructors. Interested librarians had the opportunity to collaborate on creating learning outcomes, lesson planning, coteaching, and implementing the technology. The conversations among team members were enthusiastic, fun, and focused on good pedagogical design. The initial experimentation with mobile technologies has led to a series of iterative improvements and experiments with new tools. Furthermore, the project demonstrated the librarians' teaching prowess to the Gateway faculty. They were impressed with the outcomes and are already in discussions about library programming for next year's course.

APPENDIX 4A. GATEWAY ALIGNMENT GRID

Learning Objective/ Outcome	How Learning Will be Assessed	Teaching/Learning Activity	Technology Resources
Students will become more familiar with the Evans Library and Annex physical layout.	Students will successfully take photos of themselves in a different place in the library.	Students will divide into groups and each group will be assigned a service or space. Students will navigate their way through the library to find their assigned space/ service and will take a selfie of themselves in that space.	iPads configured to take photos and share photos with librarian instructor; Selfie tour instruction handout; Group handout specific to a library service or space.
Students will remember basic information about 8 key library services and spaces.	Quiz administered by their instructors.	Students will divide into groups and each group will be assigned a service or space. Groups will answer questions about their service or space and present this information to their classmates.	iPads configured to take photos and share photos with librarian instructor; Selfie tour instruction handout; Group handout specific to a library service or space.
Students will explore a specific library space or service and be able to teach classmates basic information about that topic.	Students will present to their classmates about a library service or space and will provide answers to all worksheet questions on their topic.	Students will divide into groups and each group will be assigned a service or space. Groups will answer questions about their service or space and present this information to their classmates.	iPads configured to take photos and share photos with librarian instructor; Selfie tour instruction handout; Group handout specific to a library service or space.

Learning Objective/ Outcome	How Learning Will be Assessed	Teaching/Learning Activity	Technology Resources
Students will use mobile technology to incorporate visual elements into a presentation.	Students will use their selfies in their presentation and will refer to the images when teaching about the space.	Students will divide into groups and each group will be assigned a service or space. Students will take a selfie(s) of themselves in that space and will use this selfie in their presentation.	iPads configured to take photos and share photos with librarian instructor; Selfie tour instruction handout; Group handout specific to a library service or space.

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