PREFACE

Welcome to the *Eighteenth Distance Library Services Conference Proceedings*. The papers in this volume were evaluated and selected for inclusion by the twenty-member Conference Advisory Board using a juried abstracts process. These papers represent the many types of initiatives, programs, and new directions being presented to our profession by the librarians currently engaged in delivering library resources and services to distance and online library users.

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Co-Editors
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Building BRYT: A Case Study in Developing an Online Toolkit to Promote Business Information Literacy in Higher Education

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Abstract

This paper highlights the design and development process that two academic business librarians employed to create an online toolkit of eLearning supports for business students. After receiving funding from their institution’s internal teaching innovation fund, they hired and worked with two eLearning design companies to produce the toolkit. The toolkit includes videos and PDF resources that show students how to retrieve specialized resources for key business research tasks. The librarians undertook this project to increase the online business information literacy offerings at their university and better support their institution’s diverse commuter, distance, and part-time student population. To develop a student-centered toolkit, the librarians used a curriculum mapping exercise, online surveying, focus groups, usability tests, and a student review group. They also adapted the ADDIE instructional design model and consulted adult learning theory to develop a series of micro-learning supports that were relevant and useful for undergraduate and graduate business students.

Introduction

In winter 2015, two academic business librarians from York University’s Peter F. Bronfman Business Library submitted a proposal to their university’s Academic Innovation Fund program. They were awarded funding to develop online learning modules that would enhance the business information literacy instructional materials at their institution. The librarians planned to create a suite of online resources that would supplement their course-specific information literacy (IL) workshops, drop-in workshops, and online resources like LibGuides. By developing a cohesive set of eLearning modules tailored to the needs of business students, they hoped to better meet the needs of commuter and distance-education students enrolled in various business programs at the university. This paper will discuss the design and development process that was used in Years One and Two of the project, and how the librarians sought out student and faculty feedback through online surveying, focus groups, usability tests, and finally by employing a student review group. The librarians received ethics approval from York University’s Office of Research Ethics for the above research. By reaching out to students and faculty throughout the
first two years of the project, the librarians were able to redesign their original concept and work with two eLearning development companies to produce a toolkit of online micro-learning supports tailored to the fast-paced learning needs of business students at York. While the Year Three content is currently being developed, the modules created in Year One and Two can be accessed online at: http://bryt.library.yorku.ca/

**Context & Institutional Background**

York University, located in Toronto, Ontario is the third largest post-secondary university in Canada (York University, n.d.). The university is a comprehensive institution that provides students with a wide range of undergraduate and graduate business education programs. York’s faculty of business, known as the Schulich School of Business (Schulich), offers undergraduate and graduate degree programs and continues to develop new specialized masters programs in niche areas such as business analytics and supply chain management. As of February 2016, 1,780 undergraduate students and 1,109 masters students were enrolled in Schulich programs (York University, 2016a; York University, 2016b). However, the university also offers additional degree-granting undergraduate and graduate business programs through the School of Administrative Studies (SAS) and the School of Human Resource Management (SHRM). Both of these schools are part of York’s Faculty of Liberal Arts and Professional Studies. In February 2016, 3,560 undergraduate students were enrolled in SAS programs (York University, 2016a), while 29 students were enrolled in SAS’ masters program (York University, 2016b). Finally, 805 undergraduate students and 67 masters students were enrolled in SHRM programs in February 2016 (York University, 2016a; York University, 2016b).

Additionally, York offers fully online courses and runs programs at remote campuses. These students are difficult to reach through traditional IL offerings. For example, Schulich maintains a campus in Hyderabad, India. Students there complete the first year of their MBA program in India and receive only a 1-hour web-based library orientation session. Schulich also offers a part-time MBA degree and many of the students take their courses at the Nadal campus, which is located approximately 45 minutes away from York’s main campus. Because the business library is located on the main campus, it can be challenging for students in the part-time MBA program to meet with librarians in person or attend drop-in workshops. Also, the SHRM offers a professional masters program in human resource management, and the students enrolled in this program typically work full-time and attend classes on the weekends. While the students receive a 1-hour in-person library orientation at the beginning of their program, it can also be challenging for these students to receive in-person support from the library. Finally, York University is a large commuter school with a diverse student population. Because the majority of York’s students live in the greater Toronto area, they tend to commute to campus and spend limited time on campus.

Ultimately, York University has a significant distributed population of business students; however, the Peter F. Bronfman Business Library has only four business librarians. Due to the breadth of business programs at York, it has been challenging for the current complement of business librarians to develop in-person teaching programs that ensure business students receive a solid grounding in business information literacy concepts. Typically, the Bronfman Library provides over 100 business IL sessions every academic year, and it would be challenging to add any more sessions to each librarian’s teaching load. Therefore, the librarians investigated how
they could create high-quality online learning objects that would meet the business IL needs of students in an asynchronous manner. It was hoped that creating additional supports and resources would help the Bronfman Library provide a higher level of service for the various business programs and commuter and distance-learning population at York. This led them to apply for funding from the university in 2015. After securing funding for the first year of their project, they began conducting primary and secondary research to determine how they should design and develop the online learning content.

Development Process in Year One

Curriculum Mapping

When the librarians submitted their original proposal, they hypothesized they should create five modules to help students learn how to use subscription databases to conduct research on the following areas: companies, industries, markets, finance, and corporate social responsibility (CSR). After receiving the funding, they undertook a series of primary research activities to test the validity of their hypothesis. First, they hired a graduate student to assist them in conducting a curriculum mapping of all of the required courses in the undergraduate and graduate business programs in Schulich, SAS, and SHRM. The point of this exercise was to identify required courses with research-intensive assignments. Typically, a curriculum mapping exercise would include mapping information literacy outcomes to program and course learning outcomes to determine where appropriate information literacy interventions could take place within the curriculum (Buchanan, Webb, Houk, & Tinglestad, 2015). However, the librarians’ curriculum mapping exercise focused specifically on identifying research assignments, as they wanted to examine them and analyze: (1) the types of tasks students were being asked to complete and (2) determine what types of information sources would support their assignments.

This proved to be a useful endeavour, as it helped to clearly outline when and where undergraduate and graduate students were being asked to complete assignments that required library resources and business information literacy knowledge. The librarians noticed that students were being asked to locate and synthesize findings from scholarly, trade, and popular articles in a wide variety of courses. Therefore, they noted it might be useful to include a section focusing on article research for each module topic. Additionally, they found that CSR research assignments in the various programs focused on specific companies or industries; therefore, instead of creating a CSR specific module, it would be more beneficial to include CSR topics in the company and industry modules. Finally, they determined that it would be valuable to have a module that highlighted accounting and taxation research resources, as some of the upper year courses in the undergraduate programs required students to complete research intensive assignments in these subjects. Therefore, the librarians revised their module list to the following thematic areas: company, industry, marketing, finance, and accounting/taxation research.

Focus Groups and Electronic Survey

The librarians ran two focus groups with business faculty in the summer of 2015 to learn more about their perceptions around gaps in undergraduate and graduate business students’ research skills. Bury (2011) had previously conducted a study on faculty perceptions of IL and their students’ IL competencies at York University. Although Bury’s study surveyed faculty
from all disciplines at York University, the findings were highly relevant for the librarians due to the study’s focus on York’s context. This study highlighted how faculty typically found students did not consult library resources, and instead sought out easier to access free information sources. As Wu & Kendel (2006) suggest it is not surprising that students locate free resources through search engines like Google instead of using the highest quality materials available to them. Research has shown that students prefer to use the least amount of effort in retrieving information sources. Furthermore, Kim’s (2011) research on business students’ information seeking habits demonstrated that faculty also encourage business students to use free resources such as company websites, publicly traded company filings, and stock information. This further reinforces students’ reliance on free web resources. However, as the librarians have noticed, this reliance on free resources can create a great deal of frustration for students, as they may hit paywalls, not be able to conduct comprehensive searches, or they find that free information resources come in formats that make it difficult to conduct advanced analyses (i.e. financial data provided in PDF instead of Excel or CSV formats). Another useful finding from Bury’s (2011) study is that faculty found graduate students tended to have stronger research skills than undergraduate, although they mentioned there were still specific areas where their skills could improve.

Similar themes emerged during the librarians’ faculty focus groups. Faculty expressed that undergraduate students in particular were relying on free resources and did not take advantage of library resources. They discussed how undergraduate students needed to be scaffolded through the process. For example, one faculty member stated that it seemed undergraduates “haven’t been forced to research in any meaningful way in high school” and they require help “being walked through the process…[from] data gathering to how to cite properly”. Most of the faculty members in the focus groups tended to see undergraduate and graduate students as two distinct populations. Faculty members perceived graduate students as having stronger research skills, but they discussed how graduate business students in the MBA program came from varied backgrounds such as humanities or the sciences. Therefore they were not always well versed in business research resources and practices. Another theme that surfaced focused on how business research was not a monolithic process; instead, students needed to understand the nuances of researching specific questions in different areas such as finance, accounting, or marketing. This helped confirm that the librarians should include five thematic areas in the online learning support, and develop task-based resources under the higher-level themes of company, industry, marketing, finance, and accounting/taxation research.

In Fall 2015, the librarians created an electronic survey for undergraduate and graduate business students at York University to gain a better understanding of students’ business IL needs and previous experiences with eLearning delivery models. A small financial incentive was provided, as the survey advertised that students would be entered into a draw to win 1 of 3 $25 gift cards. A total of 442 students completed the survey. While 389 undergraduates completed the survey, only 53 graduate students completed it. Out of the survey sample, 39.5% answered that they had attended a library business research session, while 52.6% of students indicated they had not attended this type of session and 7.9% of students were unsure if they had attended a session. Students that answered yes to this question were asked to complete a voluntary section to offer feedback on how the library session could be improved. Specific recommendations included allowing for more practice time during the session, including more hands-on activities,
and also providing additional materials students could use after the class such as guides or videos. Before conducting this survey, the librarians had seen similar comments on their library session evaluation forms. These findings further reinforced that students wanted to have more opportunities in face-to-face sessions to explore and practice research techniques, while having additional materials to refer back to after the session. Students were also asked if they used video platforms such as YouTube to learn new skills. The responses overwhelmingly indicated that they used these platforms, as 88.1% of respondents answered yes to the question. Students that answered yes were asked to answer open-ended questions about helpful and unhelpful aspects of platforms like YouTube. Respondents discussed how they found some videos to be engaging and useful, but it was problematic when videos were too long or if they left out relevant steps. Some students also mentioned that it was harder to ‘skim through videos’ compared to a text document.

After analyzing the results of the survey, the librarians invited a sample of undergraduate and graduate students that completed the survey to attend either a graduate student or an undergraduate student focus group. The invitees were chosen to represent a cross-section of various demographics at York, such as commuter students, international students, and students that worked part-time or full-time jobs. Each participant was provided with a $10 gift card for participating in the focus group. The focus groups were used to explore the research experiences of students in a more in-depth manner and gather specific feedback on what features an online learning tool should have to help them with their business research assignments. The focus groups revealed how both undergraduate and graduate students tended to find out about quality information resources through their professors and their friends, instead of through library sessions, the library’s website, or in-person interactions with the librarians. One student described their process as, “I start with Google. If I can’t download it from Google then I will try find it from the library.” Another student mentioned that they had attended an in-person library session, but forgot most of the content after six months, however, the student continued to use the business library’s online chat service. When the participants were asked to describe what a useful research support would look like they tended to describe tailored YouTube playlists that would highlight how to use resources to complete specific business research tasks. One undergraduate student commented that it was useful to have access to videos, as they can be paused and re-watched. Many of the students commented that while video content would be useful, they would also like to see the library’s chat function be embedded in the tool so they could ask questions when needed.

### Usability Testing

In November 2015, the librarians successfully hired and started working with an eLearning company that offered instructional design, web design, graphic design, and eLearning design expertise. The company and the librarians collaborated using the ADDIE instructional design model. Molenda (2003) shows that there is no original source for the ADDIE model; instead, the five phases of the model -- analysis; design; development; implementation; and evaluation -- describe a “systematic approach to instructional development” (p. 35). The librarians found the ADDIE model to be a useful approach to take when structuring the design and development of the Year One content. The focus groups, electronic survey, and curriculum mapping work fit within the analysis section of ADDIE, as this work helped to illustrate the needs of the learners, while also focusing on gathering input from faculty. Next, the librarians
worked with the eLearning company to design a prototype of the company research module that could be used for usability testing with students and faculty. By employing usability testing, it was hoped that the librarians could gather feedback that would help them rework the structure of the content so it was more student-centered in its design and delivery.

The prototype consisted of one video comparing the differences between publicly traded and privately held companies and two shorter videos demonstrating how to use two library subscription databases to determine if a company was public or private. The videos were developed using Audacity for the audio, Videoscribe for animations, and Captivate for screen casting. The prototype also included a short PDF summarizing the video content, a PDF list of definitions, and a link to a Guide on the Side tutorial. Finally, the prototype had a quiz that students could take to assess their knowledge after watching the videos. It was anticipated that the content would take approximately 15-20 minutes for students to work their way through. Before the usability testing took place, the librarians had also come up with the name BRYT (Business Research at York Toolkit) for the toolkit. Three usability tests were conducted with faculty members, while five usability tests were conducted with a mix of undergraduate and graduate students. Students were provided with a $25 gift card to compensate them for their time, while faculty were not provided with a financial incentive. The tests were conducted in an office in the Bronfman Library. Students and faculty were asked to complete a series of tasks by one researcher, while two observers recorded the results. A talk-aloud protocol was used, as students and faculty were asked to describe their steps to the researchers and comment on the layout, effectiveness, usefulness, and any other insights they had about the prototype.

The results from the usability tests helped the librarians and the eLearning company quickly locate issues with the design and identify a more compelling approach for developing the rest of the content in the company research module. Both students and faculty commented that the videos needed to be shorter and more clearly associated with a specific research task such as ‘Finding a company’s annual report.’ All of the student participants skinned through the videos. They would drag their cursor and use the video thumbnails to try to find a section that seemed particularly relevant to their information needs and start watching from that point. Follow-up questions to the student participants indicated that the majority of students relied on “googling” to conduct research for their assignments. They also displayed that they preferred to “power browse” when working their way through the usability testing scenarios. For example, they would click on hyperlinks, bounce around on the prototype website, and read information pieces out of sequence (Costa, 2009; Godwin, 2009). Overall, the majority of students displayed a short attention span and low tolerance for material that did not appear to be relevant, interesting or engaging right off the bat. Participants stated the language also should be meaningful to business students and use terminology that mirrors the types of tasks they are asked to complete in their assignments. Additionally, both students and faculty did not find the quiz to be a valuable part of the prototype. Faculty thought the questions were too simple, while students commented that they would not complete a quiz that was not tied to their course grades. One student did recommend repackaging the quiz as a self-assessment tool. The majority of the student participants appreciated that they could download the PDF summaries. Both students and faculty participants recommended that the links for the databases shown in the videos and PDF resources should be embedded on the webpage to make it easier for students to go directly to the databases and test out their new skills.
Finally, both students and faculty displayed difficulty using the Guide on the Side (GoTS) tutorial. The open source software, GoTS, was developed by the University of Arizona Libraries and allows librarians to produce interactive database tutorials for students (Sult, Mery, Blakiston, & Kline, 2013). When students open up a link to a GoTS tutorial, they are routed to the live database, but the webpage also includes a guide with instructions on the left-side of the screen. Mikkelsen and McMunn-Tetangco (2014) did a comparison study with students using GoTS and screencast tutorials produced with Jing. Their research found that “respondents were virtually split down the middle between video and interactive tutorials” (p. 276). The librarians were expecting similar results during the usability tests; however, it became apparent from the in-person testing that faculty and students struggled with the software. Students and faculty did not notice the light grey guide on the left-side of the screen and they would start exploring the database without consulting any of the tutorial’s steps. The researcher asking the questions had to point out the GoTS for all of the usability tests. The participants recommended making the guide red so it would align with York University’s branding and stand out more. Also, they recommended making the instructions as short as possible and to make sure the navigational arrows for the tutorial were fixed to the very top of the guide.

**Final Development for Year One**

After conducting the usability tests, the librarians and the eLearning company had a clear idea of specific changes that needed to be made to the rest of the content in the company research module. The eLearning company proposed that the librarians should send out a needs analysis survey to faculty to clearly identify some of the top company research tasks undergraduate and graduate students would be asked to do. While the librarians worked with the company to prepare and administer a needs analysis survey to business faculty, they did not have time to submit it to York’s ethics review committee. Although the librarians cannot report on the results of this survey, it was instrumental in helping them refine the list of topics that should be included in the company research module. They then worked with the eLearning company to completely overhaul the scripts that the librarians had written earlier on. Instead, shorter scripts focusing on specific tasks such as “Locating a company’s strategy” and “Finding a SWOT (strengths, weaknesses, opportunities, and threats) for a company” were created. The scripts focused specifically on the usefulness of certain databases in completing business information retrieval tasks. Extraneous information was stripped from the scripts to make the content shorter for students. Ultimately, the videos moved away from discussing more in-depth business information literacy skills and became resources that highlighted a step-by-step process. A study done by Bowles-Terry, Hensley, and Hinchliffe (2010) shows how these types of online learning objects can be valuable for students. Their research on performance-oriented library instructional videos demonstrated that students prefer videos that are “short and to the point” (p. 26). Similar to the results of the BRYT usability tests, the authors also found that students would skim instructional videos if they included too much extraneous information.

The final videos were produced using Audacity, Videoscribe, and Captivate, and the accompanying PDFs were developed to provide students with takeaways from the various sections of the company research module. The PDFs included content with short summaries from the videos, as well as sections that highlighted other useful resources students could use. The
librarians decided to not make any more quizzes for the company research module because of the usability participants’ feedback. The design of the GoTS tutorials was also overhauled. The librarians changed the background colours to match York’s branding with the help of the library’s computing services department. The steps were also shortened. Unfortunately, they were not able to change the position of the navigational arrows. Finally, the content was housed on a WordPress site that used York University’s WordPress theme. WordPress was chosen as the content management system as it was freely available to the librarians and they had experience updating it. By the end of the Year One project year, the team had created a total of 11 videos, eight PDF resources, and three GoTS tutorials for the BRYT company research module.

**Development Process in Year Two**

*Adult Learning Theory*

While the librarians experienced a good working relationship with the eLearning development company in Year One of the project, they felt that the company took a more traditional approach to creating the video content for BRYT. Therefore, they decided to hire GEVC Inc., an eLearning company that aligned more with their vision for BRYT. In Year Two, the librarians and GEVC developed the content for the industry and market research modules. GEVC recommended that the librarians continue working with the ADDIE instructional design model for Year Two and also provided the librarians with a learning design plan that focused heavily on adult learning theory principles.

Adult learning principles are typically referred to as andragogy. Andragogy differs from pedagogy, as it focuses on methods for teaching adults whereas pedagogy focuses on approaches for teaching children. Malcolm Knowles produced seminal work in the area of andragogy, as he articulated five assumptions associated with adult learners. Some of the assumptions include that adults learn when they have a need for it, they prefer topics that are immediately relevant, and they prefer self-directed, autonomous learning systems (Chan, 2010). Learning approaches for adults should also be constructed in a problem-centered manner rather than a content-centric focus, as it ensures the learning becomes immediately relevant to them (Merriam, 2001). Therefore, GEVC and the librarians articulated the following principles should be applied when developing content in Year Two of the project:

**Immediate relevance:** BRYT resources should be organized and presented to show relevance and usefulness to students in a clear and immediate manner. The videos should provide a narrated walk-through of the database(s) in question, always relating back to a particular task, and highlighting the benefits of using the database(s) in question for that particular task.

**Autonomy:** The online toolkit allows students to access and complete the components in any order they wish.

**Practice:** Both the videos and the PDFs encourage students to apply the information shared. The video shows the steps of a specific task, such as how to identify competitors in the pet supply sector in San Francisco, while the PDFs describe the step-by-step actions required to complete the task in clear and concise language and with relevant images.
Problem-centred: The videos and PDFs are based from the student’s perspective, i.e. how to find resources for an assignment using a particular database. This perspective, combined with first-person narration in the videos, provides the target audience with an effective learning experience in a familiar format.

While the librarians recognized that they had been following some of the principles in Year One, it was useful to clearly articulate these adult learning principles before starting the development of the Year Two content. The librarians also decided that it would be valuable to continue conducting usability tests with students and faculty, and GEVC recommended that they should create a student review group to gather additional feedback on various design pieces throughout the development cycle.

Needs Assessment Survey with Business Faculty

Before developing any content for Year Two, the librarians created a needs assessment survey for business faculty to identify core secondary research tasks faculty would expect undergraduate and graduate students to complete when conducting industry and market research. The survey was distributed to faculty by email; unfortunately, the response rate was not high as they hoped for, as it was sent out in July 2016 and a number of faculty were away on vacation. Nevertheless, 23 responses were recorded and the librarians used the results, combined with the work of their curriculum mapping exercise in Year One, to develop a potential list of topics that would be covered in the industry and market research modules.

Usability Testing

After the librarians and GEVC produced a working prototype for one topic in the industry module, the librarians conducted usability tests with 9 students and 2 faculty members. Student participants that had completed the Year One electronic survey were invited to participate in the usability testing, while faculty participants were recruited via email. The prototype included a step-by-step PDF resource and a video that explained how to use 2 business databases to create a list of competitors operating in an industry in a specific geographic area. The content was also hosted on a development version of the BRYT WordPress site and included a new layout for the content such as thumbnail images for the video and the PDF content. Once again, the usability testing was done in an office. One researcher used a script with prepared questions to guide the participants through a series of tasks, while one researcher took notes. A talk-aloud protocol was used again, as participants were encouraged to describe their thought process while working through the tasks. The usability testing sessions lasted approximately 30 to 45 minutes each.

The video prototype was significantly different from the videos that were produced in Year One. GEVC worked with the librarians to create an extremely succinct video script that did not include too much extraneous detail; instead, the focus of the video was to fulfill the performance objective of navigating through two databases to create lists of competitors operating in an industry in a geographic region. By simplifying the language and the amount of information provided, the team was able to create a shorter video. Once again the audio was recorded using Audacity; however, the video was produced using a series of screen shots that were compiled into a video file using Adobe Premiere Pro. Animations produced in Adobe After
Effects were used to highlight specific features of the database, such as menu options and buttons. The video also included background music throughout to make the pace of the video appear faster. The PDF prototype was also significantly different from the PDFs developed in Year One. GEVC worked with the librarians to incorporate technical writing best practices and modeled the step-by-step PDF format off of technical instructions by companies such as Apple. Each step was numbered and written in a concise manner, while an image was included below highlighting the specific action required by the student. Figure 1 shows an example of what the step-by-step PDF looked like during the testing.

![Figure 1](image.png)

*Figure 1.* A screenshot of the step-by-step PDF format for Year Two of the BRYT project. The format includes numbered steps, short written instructions with actions bolded, and an accompanying image with the specific area highlighted with a yellow callout.

The usability testing results with the student participants were overwhelmingly positive for the video and the PDF prototype. Unlike the first year when the usability testing participants skimmed through the video, all of the participants watched the entire video. Students commented that the video was engaging and clearly showed the value of the databases for completing the specific task; however, they did find the pace to be quick. Some students suggested it would be valuable to use the video to highlight why students should use a particular database and then place the PDF next to it so students could download it as a takeaway that would help them easily recreate the steps. Students also commented that the PDF was a valuable resource because unlike the video, they could easily skim through the instructions to recreate the steps. However, the student participants found the layout of the webpage to be difficult to navigate. The content was organized in a Netflix-style layout to allow students to easily browse for resources they wanted to watch or read. Students indicated that this layout was confusing and that it would be better if the page layout was cleaner and contained less resources to access. Students also suggested that all the content should be clearly labelled with short, but relevant titles such as “Create a list of companies with Hoovers and PrivCo” as it would indicate the task and the databases being used.

The faculty reviewers felt that the video prototype was fast, but that it conveyed a great deal of information in a short span of time. They also recommended that it would be valuable to
list the video and then link to a PDF recapping the content, as they felt that students might find the speed of the video too quick. One faculty member made a number of valuable suggestions for renaming the video and PDF content so that it would be more applicable to the needs of the students. Her comments closely aligned to the suggestions the student participants had come up with in terms of titling PDFs and videos with the task plus the name of the databases covered. Overall, the faculty reviewers provided valuable suggestions to tie the material more closely to the research needs of students.

Once again, the usability testing provided the librarians with valuable feedback on how to proceed with the development of Year Two content. Based on the feedback from both students and faculty, it seemed the team should continue to develop the videos and PDFs using the new approach. However, it was clear from the feedback that the Netflix-style layout of the BRYT site was not ideal. Therefore, additional usability testing would be required to determine a better website architecture for BRYT.

Student Review Group

GEVC suggested that the librarians create a student review group to solicit additional feedback on the development of BRYT’s Year Two content in a timelier manner. The librarians received ethics approval from their institution and set up the student review group to run from January 2017 to May 2017. Students were recruited from the list of students that had completed the Year One electronic survey, and referrals from business faculty members. Eight undergraduate students were recruited in total. The librarians structured the students’ tasks so that they would conduct reviews of BRYT content from Year One, attend one in-person usability testing session, and one focus group in May 2017. Students were provided with an honorarium of $350 for their time.

Student feedback on BRYT content from Year One was extremely useful, as it highlighted valuable areas of the content, as well as ways it could be improved. Students completed the review of the material remotely as the librarians created unique Google Documents for each reviewer. Each document included links to the content that needed to be reviewed, as well as the questions the students needed to answer. The collected feedback helped the librarians develop a list of issues to be addressed when reworking the Year One content in Year Three of the project.

The student reviewers also attended an in-person usability testing session. These sessions lasted for approximately an hour and the students were asked to complete a series of tasks on three unique BRYT webpage mock-ups. Additionally, they were asked to open a GoTS tutorial and work their way through the steps. Finally, the librarians had them review the prototype video and PDF from Year Two and provide feedback on their perceived value. Student feedback on the webpage mock-ups was valuable, as it demonstrated that the students preferred a layout where each unique topic in a module should exist on its own webpage. They also suggested that all of the content should be clearly labelled to illustrate its purpose and use.

When testing the GoTS, the student reviewers found the tutorial to be useful. However, after viewing the Year Two PDF prototype the majority of students decided that the PDF seemed
to be as effective as the GoTS. In fact, some students found the PDF to be significantly better because they could quickly skim through the steps, whereas they had to go through the GoTS in a sequential order. Based on the student feedback about the GoTS, the librarians decided to replace all of the GoTS tutorials with PDFs. They also discovered that two of the GoTS tutorials stopped working properly with the databases once the databases made changes to their interfaces. It seemed that the PDF provided a more sustainable way of ensuring the content was accessible to students. Finally, the students commented that the Year Two video and PDF prototype were a significant improvement from the Year One videos and PDFs. They found that the speed of the video was more engaging, while still clearly conveying the usefulness of the databases showcased in the video. The PDF resource was also easier for them to skim, as the written instructions had been significantly streamlined and visuals were used to reinforce the written content.

During the focus group in May 2017, the librarians asked open-ended questions about topics such as the effectiveness of BRYT’s content, how the students would describe BRYT to their peers, and how BRYT should be promoted to business students at York. The students overwhelmingly agreed that the best promotion method was for professors to explain how and when to use BRYT. Students commented that it would not be enough to just have a link in their syllabus; instead, they needed to be shown the value of consulting the resources on BRYT. Additionally, students mentioned their peers would be more likely to watch and check out the content if they received bonus marks in their course. When the students were asked to describe BRYT they used phrases such as “it adds a layer of credibility to your assignments”, “it shows you how to use databases for your assignments”, and “it’s a resource centre that helps with your projects...using videos and PDFs.” It was insightful for the librarians to hear how the student reviewers described BRYT and the tips they provided for promoting the resources to business students.

**Final Development for Year Two**

The usability testing combined with the student review group feedback, helped to develop a more cohesive vision for the Year Two content. Applying what they learned from the students, GEVC and the librarians developed additional videos and PDFs for the topics in the industry and market research modules. After gathering feedback on three possible webpage designs for the BRYT content, GEVC created a layout that worked with York’s WordPress template and incorporated the design features that students and faculty reviewers had recommended: (1) each sub-topic in a module should have its own webpage; (2) each webpage for a sub-topic should be clearly labelled what was a video, PDF, link to a database, and links to additional resources like research guides. The webpages also used descriptive headings such as ‘How-to videos’ and ‘Step-by-step database instructions’, while also using descriptive titles for video and PDF resources. Figure 2 shows an example of a typical layout for a sub-topic page on the BRYT website.
Figure 2. A screenshot of a typical layout for a BRYT subtopic page. The headings use descriptive language to highlight valuable resources for students, while also including direct links to the databases and other resources.

Future Plans

Sustainability

At the conclusion of Year One and Year Two, BRYT now contains 20 videos and over 20 PDF resources. Sustainability is an important consideration for the two librarians involved in this project. When they hired the eLearning companies, they built a training section into their formal request for proposals. The chosen eLearning companies were required to provide training materials for the technology used, as well as access to any templates developed. Additionally, the eLearning companies were asked to provide in-person or virtual training sessions on the tools to the librarians. These resources have been helpful, as it has allowed the librarians to learn how to update and add content to BRYT autonomously. Also, GEVC created a Word template for the step-by-step PDFs. The librarians have started training other staff members in the Bronfman Library on how to create new step-by-step PDFs using the template. Their hope is to eventually switch over all pre-existing Bronfman Library PDF guides to the new step-by-step style, and to have other staff members help with this project. Maintaining and updating the videos will be more challenging, as database interfaces change frequently. The librarians plan to do an annual review every summer and work on updating the content. Additionally, throughout this project they have developed skills in writing scripts and recording audio, and they hope to continue strengthening their video production skills. Furthermore, if a video needs to be significantly overhauled, the librarians may take the video down and replace it with a step-by-step PDF while they work on creating a new video.
Year Three Content

From May 2017 to April 2018, the librarians will work with GEVC to produce the rest of the content for the remaining finance and accounting/taxation modules. They will also be working on revising the content for the company research module that was developed in the first year of the project. The librarians are using a similar structure for the Year Three content, as they conducted a needs analysis survey with faculty to identify the core content that should be covered and are now developing a prototype with GEVC. They plan on conducting usability testing again with a new student review group in January 2018.

Assessment

While the librarians decided to move away from including mandatory quizzes in BRYT after analyzing the feedback from the Year One usability testing, they are currently exploring incorporating a less intimidating way of providing students with the opportunity to conduct a self-assessment or knowledge check. This type of section may include clear and concise multiple-choice questions. However, in keeping with the principles of adult learning theory, the questions will be optional and will serve the purpose of providing feedback to students without the anxiety of tying the assessment to their course grades. For instance, they may call this section “apply” instead of “assessment”, “quiz” or “test” to minimize anxiety.

Additionally, the librarians have begun working with faculty to create flipped classroom IL sessions that incorporate BRYT content. The flipped classroom sessions will be structured so that students will complete a pre-test to determine their pre-existing knowledge of specific business IL topics. Then they will be asked to complete some BRYT modules that will help them locate business resources for assignments in their course. Finally, a librarian will come back to the class for an in-person IL session, where students will complete a series of active learning exercises to not only test their understanding of the BRYT material, but also retrieve relevant research materials for the assignments in their course. It is hoped that by conducting this type of research the librarians can complete the last two phases of the ADDIE model: implementation and evaluation. Lastly, an electronic survey is currently running on the BRYT homepage. When visitors access the website, a pop-up appears and asks the user to complete an online survey. This adds an additional layer of feedback to the project, and helps the librarians to continue making improvements to the BRYT content.

Conclusion

Before the librarians undertook the design and development process for BRYT, they had little knowledge of eLearning, adult learning theory, and best practices for creating online learning objects. Throughout the process of creating BRYT, they have learned how to use ADDIE to plan and create an online learning support. They have also discovered that constantly soliciting feedback from students at various points in a project can help produce a more student-centered eLearning resource. Their greatest insights came from conducting usability tests with students and they hope to continue using these valuable findings to build a useful business research toolkit that provides effective and efficient support to the diverse population of business students at York University.
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To Infinity and Beyond: Reducing Textbook Costs through Librarian/Faculty Collaborations

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Abstract

As subject and distance learning librarians, we have a special interest in supporting our faculty and their needs as they explore alternative and more affordable textbook options for their students. In an increasingly digital environment, there are a wealth of resources available at little or no cost to students. Unfortunately finding these resources can be challenging and time-consuming for faculty. This is where librarians step in. Through careful planning and collaboration with faculty, we can help transition course reading to online and open resources. Librarians can assist in this process by helping faculty identify appropriate resources, helping integrate resources into online learning environments, and providing support for student access to materials. This paper will describe this process from start to finish, utilizing our experience supporting a faculty member with an Ethnobotany course textbook as it was transitioned to an online textbook option.

Introduction

The cost of higher education is soaring, and there are many factors at play. One of the most prominent sources of expenses for students is textbooks. According to the National Association of College Stores (n.d.), during the 2016-2017 academic year students spent an average of $579.00 on required course materials. Textbook affordability is a major concern not only for students, but for faculty and administrators as well. In a recent survey of University of Central Florida students, researchers found that the high cost of textbooks resulted in students delaying buying books, not buying them at all, taking fewer courses, and even explicitly not taking courses because of the required textbooks (Textbook affordability at UCF, n.d.). University libraries can play an integral role in alleviating the burden of textbook cost through collaboration with faculty and collection development practices. This paper will illustrate ways libraries can help increase textbook affordability and ensure quality resources are available at no cost to students --without negatively impacting learning outcomes-- using a recent partnership between University of Central Florida librarians and faculty to find alternatives to traditional textbooks in an Ethnobotany course.

In 2008 the Florida State legislature introduced textbook affordability legislation which was updated in 2017 (Fla. Admin. Code R. 6A-14.092, 2017). University and colleges in Florida began to look for ways to make textbooks more affordable. After encountering barriers in this
process, a group of instructional designers and librarians at the University of Central Florida began a partnership in 2015 to form the Textbook Affordability group. This group’s primary goal is to find ways to relieve student financial burden. Through this partnership the taskforce hopes to increase awareness around the negative impacts of the high cost of textbooks, increase faculty understanding of alternative resources available, and provide a platform for faculty to create and distribute open educational resources (Denoyelles, Raible, Beile, & Norris, 2017). The literature on the use of open educational resources and library resources to increase textbook affordability identify a number of barriers to adoption by faculty.

**Barriers**

The biggest hurdle to increasing textbook affordability is faculty buy-in. Some of the major barriers for faculty are: time, time and time. According to a 2012 study by Allen and Seaman, difficulty in finding open educational resources (OER) was a significant barrier to adopting OERs. In fact, 60% of the faculty surveyed agreed or strongly agreed that problems searching for and the lack of a central repository influenced their use of OERs. Secondly, unlike traditional textbooks, OERs may not go through the same types of reviews and evaluations, so that leaves evaluating the resources for not only fit, but also authority on the shoulders of faculty (Young, 2016). Finally, faculty also feel they have to spend more time preparing for class when OERs are used as texts (Bliss, Hilton, Wiley, & Thanos, 2013). While there are a number of reasons this could be true, one possible explanation is that many modern textbooks include supporting materials and assessments related to the content that faculty can use “straight out of the box.”

As with libraries, faculty are often asked to do more with less. In these situations, time burdens become exponentially more “costly” for faculty. There are a number of ways libraries can help ease the pressure of adopting more affordable textbook options through collaborations with faculty. By working together we can make it more efficient to find resources, provide resources to aid in the evaluation of texts, and free up time for faculty to develop supporting materials.

**Open Access vs. Textbook Affordability**

While many resources utilized by faculty trying to increase textbook affordability are open educational resources, it’s important to engage with faculty and identify if their goal is to choose texts that students can access for free or low cost, or if they are working to promote the open access movement through their texts. If the goal is simply to provide texts at free or low cost there are significantly more options open to faculty, especially when they work with the library to achieve their goals. Not only will they be able to utilize the wide array of open educational resources, they can also choose from licensed content purchased by the library and faculty authored texts.

E-resources licensed by libraries are an excellent source of quality materials that can be used in place of traditional textbooks. Unfortunately the nature of current ebook publication models can make it difficult for faculty to select resources that are available to all of their students in a reasonable time. Regardless of what type of resources faculty would like to
incorporate into their courses, working with librarians can overcome many of the barriers and ensure that students and faculty have a successful experience.

The Role of Librarians

Creating and building on librarian/faculty relationships is the first step in helping faculty understand the importance of educational initiatives like textbook affordability. At the University of Central Florida, our Research and Information Services Department has over twenty subject liaisons who partner with a variety of departments and colleges, across the library and campuses, to assist faculty with requests from teaching a library instruction session, to setting up research consultations for their students, to creating library programming. Many of the courses offered at the University of Central Florida have an online Canvas web learning environment where faculty add content modules, weekly assignments, and where students can access course readings. Students use this online environment in tandem with the face-to-face lecture component making these courses pseudo-hybrid. Librarians can serve as useful experts not only in the vetting of materials for the inclusion in these online learning spaces, but also in educating faculty members on the importance of staying within suitable copyright and fair use guidelines as resources are added online. Faculty are gaining more interest in partnering with the library to locate open access course materials, low cost textbook options, or DRM free licensed resources that can be used as course textbooks requiring no out of pocket costs to students. As librarians partner with faculty in the preparation, search, and use of resource materials for their courses we become deeply invested in the process, while building strong bonds with faculty as co-contributors and curriculum designers and a time saving resource. This leads to fruitful relationships where our faculty advocate for the library and our services as well as learn to value our strengths as academic scholars.

Learning to seize the opportunity to pitch the idea of textbook affordability to faculty by providing succinct reasoning and timely feedback helps to sell them on how easy the process can be. Following through quickly and being available will also help to improve the library’s future chances to hook another faculty prospect into using low cost or free materials in their courses. We must always keep in mind that faculty talk to each other and positive word of mouth experiences do help to build upon the library’s network of happy customers—ones who come back for seconds.

A Case Study: Ethnobotany

The success of librarian/faculty collaboration is greatly influenced by the relationship between the library and the home department of the faculty member. At the University of Central Florida, the Science Librarian serves as the liaison between the library and the Biology department. Working to build departmental liaison relationships with one key faculty member in each department is the best way to get library information out to the rest of the faculty in a timely manner. Visiting the departments or attending faculty meetings as possible also helps to communicate initiatives like textbook affordability. In presenting our case study of success for the implementation of an affordable textbook option in an Ethnobotany class offering, we will look closely at one Biology faculty who serves as the Botany lead for their department.
It should be noted that the Botany faculty member collaborating with the library on this project is well connected in terms of receiving and reading library newsletters on a semester basis. She is also familiar with the library website and resources. Faculty knowing that they are assigned an individual librarian to assist them with requests is an important aspect of this project. In addition, this faculty member is a great collaborator and works with others often, to create and promote her scholarship. She works to develop new academic partnerships and is very open to collaborative work. But even with having a great deal of knowledge about the library and the subject librarian, our Botany faculty was still unsure how to tackle replacing an out-of-print textbook she wanted to use for an upcoming course.

The case study then begins with our Botany faculty member initiating contact with her subject librarian regarding this out-of-print textbook. At first the faculty member requested assistance finding alternative textbook titles, presenting a few suggestions that were not available via electronic format. In that first email communication, our Science Librarian requested a sit down meeting to:

- review the course syllabus,
- identify criteria necessary to make a new book selection, and
- identify any known additional titles of books that could be considered.

We were lucky that her inquiry came two semesters ahead of the actual course launch. The meeting lasted an hour as the subject librarian introduced herself and provided information regarding the library’s services and other pertinent projects.

After reviewing the syllabus and materials and having time to comb the library’s resources, and searching for new alternatives to present the Botany faculty, another meeting was scheduled one week later. During this time both parties discussed which sources were viable for adoption into the course, including chapters that could be used from electronic databases and DRM free licensed materials available through the library. It took some time to get down to specifics as the librarian assisted with reviewing course design and looking at where particular modules were placed and how they were outlined. Having good source material to work with helped this process.

Ultimately, through another few meetings, and with the help of the faculty’s student worker, specific course readings were identified and arranged based on the combination of two outside electronic books. One specific book was chosen from an ebook collection available freely through National Geographic. Other chapter readings were scanned in from the out of print text that were consistent with proper fair use guidelines as presented and adhered to by our university. Our Scholarly Communication Librarian assisted in providing details during this part of the process.

By starting the planning process as soon as possible, the Ethnobotany course shell was completed in time for the beginning of the class start. The faculty member successfully included newly revised modules, updated readings, and accurate links to ebook chapters which will allow
the library to collect proper usage statistics. This subject librarian and faculty collaboration has prompted additional collaborative projects for the future. Our Botany faculty realizes the significant impact that working in tandem with a subject librarian can have. As we continue to see where the course leads, we will follow up with the faculty during the start of the Spring term, towards the mid cycle, and at the end for reflective feedback. Now to examine a five step process for success that can be applied based on our Ethnobotany case.

**The Five Steps to Success**

Working with the Biology faculty on our campus, to select affordable textbook options in the Ethnobotany course helped us identify a five step process that can be followed at your institution to ensure a successful collaboration. The five steps are: (1) **Pitch the idea**, (2) **Guide and assist**, (3) **Locate and explain**, (4) **Collaborate and close**, and (5) **Evaluate then repeat**.

Using our Ethnobotany case study as an example, let’s consider the first step: **Pitch the idea**. In our model, our faculty member first got in touch with their subject librarian two semesters before the start of her class to ask questions regarding options for a course textbook. Upon the first meeting between librarian and faculty, it was apparent that the instructor was unaware she could design her own digital text using open resources or that she could even decline to select a book from the campus bookstore all together. This created a great opportunity to invite the instructor to work with the library to locate resources that could be pieced together and used holistically as course readings for her class.

In addition, this particular faculty member has already had experience writing her own text for another botany course. She was the perfect candidate to pitch the idea to about creating her own open educational resource. After the idea was introduced and the option of working alongside the library, with the Center for Distributed Learning, and other library partners, she was not adverse to the idea of creating an OER for a future section of the same course. Knowing this would take some considerable time to put together, it was not going to be possible to produce in the timeframe we had. Working with this faculty member to develop readings for the upcoming semester gave us the opportunity to solidify the relationship, and opened the door to working with her on the creation of her own textbook in the future.

Once a plan was in place, the faculty/librarian collaboration moved into step two: **Guide and assist**. The successful experience selecting texts for the upcoming semester resulted in the faculty member valuing the benefit of working alongside the subject librarian. This afforded us a chance to discuss details about how to do library catalog searches for open educational resources, and use other software to look at available ebook options with DRM free licenses that can be purchased. The librarian’s role during this process is to guide the faculty member to specific subject resource databases or websites that have suggested materials they can consider. In this step, the librarian helps the instructor sift through the course syllabus to help define necessary standards and content to look for when selecting a text. The librarian has the opportunity to work in tandem with faculty as a curriculum designer as well as guiding the faculty to look at resources that are suitable that they might not have considered reviewing without the outside input. In addition, the librarian also plays the role of assistant as they explain the use of propriety software like GOBI for library acquisition ordering.
At our institution, the Acquisitions Department provided access to faculty members who were interested in locating and searching for electronic book alternatives for use in their classroom through the textbook affordability initiative. The access was basic and would only be used to assist faculty members in finding relevant sources for use in their class; they were restricted from ordering books directly. The instructor, however, could create a folder and select titles for the subject librarian to review prior to formal purchasing. Throughout this step the faculty member was empowered to see back-end channels and to be guided through the library process. Faculty participating in the process were engaged and interested in learning more about the selection process. The Science Librarian worked with other senior librarians to find specific examples of books that were not easily located through the university online catalog. This is one instance where we looked internally for guidance and assistance within our own department to further the process and to reach success.

The third step, Locate and explain, is an opportunity for the subject librarian to get into specific detail regarding the proper fair use standards that the institution lives by. But first, a short list of viable resources to be used in the Ethnobotany class were being examined more closely by the faculty member. The instructor carefully applied necessary criteria and paid particular attention to the availability of illustrations, whether chapters were downloadable, and ease of use of each electronic book on the list. After the subject librarian helped to locate the specific resources and provided details on the use of embed codes and how to link to the library databases so that proper usage statistics could be pulled and tracked, the faculty member was left to consider the options. Within the next week our Biology instructor got back in touch to set up another appointment at the librarian’s request, to go over which selections were ideal and why.

During the explain portion of step three, the librarian spent time explaining the importance of adhering to copyright and fair use standards. These standards are at play when faculty choose to make online reading available through their Canvas webcourse. Often, our faculty are unaware of how copyright and fair use influence the ways in which they can legally use specific resources. Faculty may not understand how their choices could result in their course materials being pulled offline by instructional design staff, or that the university as whole is put at risk for infringing on copyright. Both subject librarians and scholarly communication librarians can work together here to present faculty with useful documentation to help protect all interests.

As the process continues, in step four, Collaborate and close, subject librarian and faculty work together to review the selected materials and to correlate them with the class assignments and course syllabi. Sometimes the instructor will have a student worker available to them and they will request that the librarian work directly with the student on the tedious process of checking over precise links and making sure things line up inside the online course environment. It is important to note that everyone involved needs to pay close attention to each detail and that checking over every hyperlink is necessary to ensure proper use of all online resources.

Additional players can be enlisted at this time to help support the faculty member if they so choose. At the University of Central Florida, the Center for Distributed Learning has a team of
instructional designers who work with faculty to assist them with their online course presence. They are available to upload documents and to create modules for faculty members who are not as technically savvy or familiar with the learning management system. If your institution has instructional design staff, librarians should consider reaching out to them early on in the project and keeping communication channels open so that they can connect with faculty who may need extra assistance. It isn’t uncommon for the subject librarian to include other experts and librarians in this process, however, it is the subject librarian’s responsibility to ensure the deal gets closed and that the faculty member is happy with the end product. Seal the deal and stay committed until the end. Invest the time and ensure adequate follow through. Lastly, the librarian should make themselves available to the faculty with regard to reviewing links, providing feedback on instructions to students or to check that resources are labeled correctly and easily accessible. Make sure to document this step in particular to include work on specific tasks and what contributions were made by the librarian directly. Be specific in outlining partnerships that were created, write up detailed interactions and items that were significant in the case. Document the amount of time spent along the way as well as it will all be significant to the reflection portion during the final step.

The final step is to Evaluate and repeat. During this reflection period, the librarian and faculty member sit down to discuss the process and how it turned out. Ideally, each person would write down their questions, comments on challenges or things they would like to see changed the second time around. Also, getting feedback from other instructors, students, and librarians to see what their input is might be helpful in future iterations of the course. It is important to follow up with the instructor several times throughout the course during the semester it is being offered. Things should be examined at the beginning of the semester, during the middle of the term, and at the end of the semester. Keep in mind that at any time the faculty member can ask for assistance from the subject librarian and we should be ready and willing to follow through with our support.

Casual personal reflection on the process along the way as well as a more formal evaluation with the faculty member is the best way to assess the successfulness of the collaboration. Keep track of each other’s comments and issues and make a checklist for what needs to be addressed now as well as what needs to be changed the next time the course will be offered. Both librarian and faculty need to be ready to repeat the process if problems arise accessing the selected resources. Take the time to be critical in the reflection and evaluate stages and be ready to start again from scratch the next time around.

What We’ve Learned

Successful partnerships require open communication and excellent planning. Although we have outlined a plan for success, there are considerable hurdles that can impede moving quickly through this process. Here are some guidelines to help ensure positive outcomes for your future librarian/faculty textbook affordability collaborations.

1. Identify faculty goals for choosing affordable options.
2. Read and review course syllabus and learning objectives before the initial meeting.

3. Identify reasonable time expectations based on the number and types of resources needed.

4. Ensure that licensed materials selected are DRM free or have adequate seat licenses when possible.

5. Know who your partners are and keep lines of communication open.

6. Ask questions and provide timely feedback.

7. Stay on task and keep up with deadlines.

In looking back at our experiences, here are a few things we found helpful:

- Don’t be afraid to open up a dialogue with students about how to talk with their instructors about the availability of subject specific low cost or free educational resources. It means more when the student asks.

- Make a point to create strong relationships with faculty and offer to work with them in tandem to transition a course to textbook alternatives or to take on the leap of creating their own open educational resource text.

- Work on building partnerships across departments while still asking for help from other internal library departments. Adding librarian buy-in is ideal and will really come in handy when additional human power is needed to complete tasks on time or to meet implementation deadlines.

- Lastly, keep track of the all work that is done and how things progressed, or didn’t, throughout the process. Reflection on the procedure and method is a must, as is staying honest about both the challenges and weaknesses, but don’t forget to celebrate the successes as well.

Conclusion

In closing, creating librarian/faculty collaborations can be a lot of work and require ongoing commitment if they are to be successful. However, the direct result and subsequent return on invest makes it all worthwhile. Both faculty and students are impacted by the transition to open educational resources. They are equally excited and enthusiastic about how easy the resources are to use, how much money is really saved, and how important the issue of textbook affordability is to the education process as a whole. The amount of money students spend on course textbooks is daunting and can be a real barrier for students staying on track through their academic journey. Harnessing the power of librarian/faculty collaborations can make a significant impact for students and increase the visibility of the library with faculty and university administration. Taking an active role in increasing textbook affordability for your
institution gives libraries the opportunity to positively influence student learning, faculty efficiency, and supporting the broader scholarly community.
References


Student-Staffed Virtual Reference Services: How to Meet the Training Challenge

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Abstract
Student workers are a well-established component of academic library operations. Recently their traditional role has expanded to include responsibilities that were previously assigned to librarians, including in-person and virtual reference support. This trend has raised concerns about service quality and highlighted the importance of adequate training and evaluation for student employees. This case study outlines the training and assessment program for student employees working on Ask a Librarian, an academic consortial chat reference service in Ontario, Canada. Evaluations indicate that student assistants are less formal in their communication style, do not consistently perform a thorough reference interview, and deviate from some RUSA best practices. However, students are consistently rated very highly by users in exit surveys. With a training program that addresses communication and reference interview techniques in-depth, and consistent follow-up and assessment, students are a viable option for staffing chat and can meet high quality standards for reference service.

Introduction
Student workers are a longstanding and valued component of the operations of academic libraries. The widespread employment of students began in the nineteenth century, grew throughout the twentieth century, and accelerated sharply in the 1970s (Clark, 1995; White, 1985). Student assistants now account for an average of 20% of total staff at ARL libraries (Morris & Roebuck, 2017). While students were historically employed to complete simple, repetitive tasks, their roles have recently expanded to include more complex responsibilities such as front-line reference and research support (Aho, Beschnett, & Reimer, 2010; Logan, 2012).

A number of factors account for these staffing changes. In the wake of the economic downturn in 2008, many academic libraries have faced budget cuts, and library administrators have placed staffing expenditures under increased fiscal scrutiny (Cottrell & Bell, 2015; Regazzi, 2012). To improve the cost-effectiveness of reference services, many libraries have shifted their staffing from librarians to lower-paid paraprofessionals and student staff (Gremmels, 2013). Academic libraries have also been dealing with a significant decline in reference transactions (Applegate, 2008; Martell, 2007). Between 1994 to 2008, the American Library Association’s Office of Research and Statistics reported a 50% decline in reference transactions (2008), and
during the past decade, case studies have reported 45-80% decreases in reference activity (Bunnett et al., 2016; Buss, 2016; Peters, 2015; Stevens, 2013). There has also been a marked decline in the proportion of questions that are challenging enough to require the help of a librarian (Carlson, 2007). To ensure that librarians’ time is not monopolized by routine or simple questions, many libraries have shifted to tiered reference staffing or adopted appointment-based and self-service reference models (Coleman, Mallon, & Lo, 2016; Faix, 2014). This allows librarians to dedicate their time to high-level, creative, or technical functions, such as consultations, instruction, and outreach (LeMaistre, Embry, Van Zandt, & Bailey, 2012; Summerhill, 1994).

As student workers have taken on a leading role at the reference desk, they have also been asked to provide virtual reference services to a greater degree. Virtual reference services are increasingly common in academic libraries; 47% of universities and colleges in North America offer chat services, with almost a quarter providing them through a consortium (Yang & Dalal, 2015). These services are an effective way to reach patrons at their point of need, especially distance learners, part-time students, and patrons who prefer to access library resources online (Lee, 2008; Li, 2013; Nicholas & White, 2012; Summey & Akers, 2006). Interestingly, although many case studies demonstrate that student workers are taking on chat reference responsibilities (Bodemar, 2014; Bravender, Lyon, & Molaro, 2011; Cabaniss, 2015; Faix, 2014; Hodges & Meiman, 2009; Keyes & Dworak, 2017; Langan, 2012; Lux & Rich, 2016), this practice is much more common in single-institution reference services than in consortial reference environments. According to a survey of American academic libraries, only 39% of libraries that take part in cooperative chat services use paraprofessionals or library school students for staffing (Devine, Bounds Paladino, & Davis, 2011).

Student workers are a popular staffing solution for virtual reference services because they are cost-effective and can be used to make up staffing deficits and extend service hours into the evenings and weekends (Blonde, 2006). In a consortial environment, they also help ensure there are enough operators online to handle the high volume of chats. However, the inclusion of student workers has raised concerns about service quality. Student assistants generally perform well on chat, but they must be adequately trained and assessed to ensure they are meeting service standards (Lux & Rich, 2016). Despite the importance of training and oversight, few articles have been published regarding appropriate training and assessment practices for student workers staffing chat reference services. The following article aims to fill the gap by outlining the training program and assessment practices for student employees working on Ask a Librarian (AAL), a bilingual consortial chat reference service for 13 universities in Ontario, Canada.

**Literature Review**

**Student Staffing**

There has been much debate in the literature about the appropriateness of using student employees to staff reference services, at in-person service points and on chat. The issue has been examined through multiple angles.
Cost. Several studies have examined reference staffing practices using a cost-effectiveness approach. Bracke et al. (2007) and Ryan (2008) examined the cost of staffing the reference desk with professional librarians, and due to high salary and average transaction costs respectively, recommended transitioning to trained paraprofessionals or student staff. Bravender et al. (2011) examined the costs associated with staffing chat reference with librarians at Grand Valley State University (GSVU). The researchers found that this practice was not cost-effective, as each transaction cost an average of $49 during the academic year and $217 during the summer semester. When the authors examined true reference questions alone, the cost of each transaction rose to a staggering $1170. In light of these findings, GSVU no longer assigns librarians to chat, and the service is monitored by trained reference assistants (including student workers).

Question type and complexity. Many studies have examined the question type and complexity of reference transactions to determine whether they require the skill of a librarian to answer. Numerous case studies have reported a high proportion of simple directional or technology questions at the reference desk, suggesting that staffing by librarians may not be needed (Bishop & Bartlett, 2013; Ryan, 2008; Stevens, 2013). However, there are conflicting reports about the most common question types through virtual reference. Cabaniss (2015) reviewed chat transcripts at the University of Washington and coded them according to question type and difficulty level on the READ scale. The majority of chats were general information and known-item lookups, which correspond to the two lowest levels of difficulty on the scale. Based on these findings, Cabaniss recommended that graduate students should staff the chat service more often. Bravender et al. (2011) analyzed chat reference questions at GSVU and similarly found that under 25% were true reference questions.

However, other studies have reported a higher proportion of research and reference questions, suggesting that librarians may be the appropriate level of staffing for chat. Fuller and Dryden (2015) analyzed chat transcripts from the University of Connecticut Libraries, and determined that a significant percentage of questions required a high level of knowledge of subject materials and database navigation. This supported their current practice of staffing virtual reference using generalist reference librarians, although the researchers also endorsed using highly-trained non-librarians. A content analysis of chat transcripts at Georgetown Law Library echoed this pattern (Morais & Sampson, 2010). The researchers reported that 66% of transactions were reference or instructional in nature, indicating that professional librarians should staff the service. Coté, Kochkina, and Mawhinney (2016) found a nearly equal distribution of basic and intermediate questions in a review of chat transcripts at McGill University Libraries. As the intermediate questions required information literacy instruction and question negotiation, they recommended maintaining librarian-only staffing.

Instruction. Several studies have addressed the need for instruction through chat to determine appropriate staffing types. In an analysis of chat transcripts at the University of Connecticut, Fuller and Dryden (2015) observed that instruction was needed during the majority of transactions. Librarians provided instruction in 81% of interactions, affirming their practice of staffing virtual reference with librarians. Supporting this finding, a review of chat data at Morris Library found that librarians provided instruction in 87% of chat transactions, compared to 74% of transactions by paraprofessionals (Graves & Desai, 2006). The authors concluded that if non-librarians staff virtual reference, they must be trained in the importance of reference instruction.
and information literacy. However, Keyes and Dworak (2017) found no significant difference in the provision of instruction among student employees, paraprofessionals, and librarians. Bodemer (2014) has also questioned the view that only librarians can effectively provide instruction, arguing that expert librarians are prone to over-complicating basic instruction and that student employees are in a better position to clearly communicate terms and processes and speak to personal experience.

**Service quality.** As a final approach to the staffing question, several researchers have assessed the quality of service provided by student workers through user surveys and transcript analysis. Case studies have indicated that student workers staffing the reference desk receive comparable satisfaction ratings to librarians (Faix, 2014) and are rated highly by patrons on measures of approachability and helpfulness (Stevens, 2013). However, studies concerning the quality of service provided by students on virtual reference services have found conflicting results. Pomerantz, Luo and McClure (2006) reported on a peer-review of chat transcripts from the consortial NCKnows chat service comparing the performance of local NCKnows librarians and external staff provided by 24/7 Reference (mainly paraprofessionals and library science students). There was no difference in skill between the NCKnows librarians and 24/7 staff, but the professional librarians scored more highly on measures of user engagement such as courtesy, patience, and enthusiasm, suggesting that “professionally trained librarians are superior in their display of desirable personality characteristics during the reference interaction” (p. 44).

Lux and Rich (2016) compared the performance of librarians and student workers on Bowling Green State University’s chat service. On almost all measures of comparison, the reference librarians outperformed the student assistants, but the margin between them was not significant. The student employees offered quality assistance in 88% of transactions, and they were more likely to receive thanks or positive comments than librarians. The authors therefore concluded that student employees can effectively staff chat reference services, and can improve on their weaknesses through training. Keyes and Dworak (2017) analyzed the chat transcripts of student library assistants, paraprofessional staff, and professional librarians for content and comparative quality. Their results demonstrated that librarians outperformed other staff and students in grammar, signing off, providing sources, and searching for the patron, while students were more likely to provide greetings and maintain a courteous tone. Overall, the researchers determined that trained students were capable of providing chat reference services, as their chats were comparable in quality and content to paraprofessional staff and professional librarians.

**Virtual Reference Training**

The acceptance of student workers as a viable form of reference staffing is growing, but training is essential to ensure quality service. This is especially true for virtual reference services, as “the absence of a physically present patron and the different modes of communication may call for additional skills, effort or training to provide quality service on par with face-to-face reference services” (American Library Association, 2008, para. 3.4.1).

Several researchers have investigated the particular skills and competencies required to provide virtual reference services. Ozkaranmanli (2005) interviewed librarians about the abilities and attitudes that are essential for success on virtual reference. The librarians highlighted

...
communication skills and strategies, knowledge of reference works and sources, the ability to adjust to a new format, and the capacity to deal with the unexpected. Tucker (2003) generated a list of required competencies for chat reference during the development of a new training program. The list includes strong communication skills; the ability to conduct an online reference interview; expert Internet and database searching; facility in applying policies; an aptitude for assisting the patron in locating, using and evaluating information; and technical skills such as keyboarding, multitasking, and troubleshooting. Luo (2007) has created the most comprehensive list of chat competencies to date, grouped into three types:

1. Core competencies for general reference, including reference interview skills, knowledge of resources and searching skills, and instructional ability;

2. Competencies specific to chat reference service, including online communication skills, the ability to effectively use the chat software, and a customer service ethic; and

3. Competencies for general reference that are highlighted in the chat environment, including basic computer techniques, multi-tasking, working under pressure, and flexibility. (p. 205)

Libraries have adopted several training approaches to address these competencies. At minimum, chat reference training usually addresses the functional essentials of the chat software, service policies and procedures, and basic online communication skills. Common approaches include hands-on practice on the software, mock virtual reference transactions, introductions to chat etiquette and the chat reference interview, and orientations to institutional chat policies (Devine et al., 2011). In addition, Tucker (2003) advises incorporating research and computer skills training, including Internet and library database search techniques and the use of electronic resources. Westbrook (2006) recommends also incorporating recent research and theoretical developments in adult education, digital communication, cognitive psychology, and human-computer interaction. Kawakami and Swartz (2003) encourage trainers to provide supplemental training and policy documents in multiple formats to facilitate easy access during shifts, encourage review, and take into account multiple learning styles.

Luo (2009) investigated the effectiveness of traditional virtual reference training techniques through a survey of chat reference librarians. She discovered that the most effective approaches involved hands-on practice and experiences among trainees, such as role-playing exercises, reviewing actual chat transcripts, or asking questions of real chat services. Furthermore, Huston (2009) suggests trainers should not put too much focus on introducing the chat software, as most librarians are confident in their technology skills and comfortable with chat reference tools. To introduce the online reference interview, Caulfield (2005) recommends posing “tricky devil” questions to trainees. These deliberately ambiguous questions highlight the communicative limitations of chat that can contribute to a premature diagnosis of the user’s information need, emphasizing the importance of a thorough online reference interview.

Although best practices for virtual reference training are well-covered in the literature, few studies have focused specifically on the training needs of student employees. Langan (2012) reviewed Western Michigan University Libraries’ chat transcripts and found that many student
workers deviated from RUSA best practices. The students did not dedicate enough time to the reference interview and were too informal in their communication style. Langan stresses that it is essential to train students to maintain an appropriate professional tone and to coach student employees in the listening and enquiring stages of the reference transaction. To address these gaps, Langan recommends providing background information about why chat policies and best practices are in place, and guiding students through the reference interview to provide appropriate benchmarks. He also recommends practice assignments involving actual virtual reference transcripts (2012). This recommendation supports earlier findings by Ward (2003) that transcript reviews can increase awareness of reference standards among student workers.

**Virtual Reference Assessment**

Student workers’ contributions to virtual reference services must be continually assessed to ensure they are meeting service quality standards. Virtual reference services are commonly evaluated from two perspectives: the service perspective and the user perspective. The service perspective is concerned with the efficiency, quality, and cost-effectiveness of a particular service, with evaluations focusing on the volume of questions submitted or answered, the completeness and correctness of responses, and chat providers’ adherence to behavioral standards (Luo, 2008). The user perspective is concerned with the effectiveness of the service, such as users’ awareness and preference for virtual reference compared to other information sources; and patrons’ perceptions and feedback about the service, including satisfaction and willingness to return (Pomerantz, Mon, & McClure, 2008).

In addition to these traditional assessment approaches, library services are increasingly being evaluated from the librarian or staff perspective, including their attitudes toward different services and their experiences and job satisfaction (Casebier, 2006; Hendricks & Buchanan, 2013). Furthermore, evaluating a service provided by a consortium adds an extra layer of complexity, as the service must be assessed from the perspective of member libraries, through specific subsets of patrons or operators (Kern, 2006). To understand how the service is being used across the consortium, these types of evaluations often focus on the proportion of questions submitted by users at each participating library, the number of questions handled by each library’s operators, or how well each library is meeting quality standards developed by the consortium (Pagotto, Barrett, & Pereyaslavska, 2017).

**Case Study**

The Ontario Council of University Libraries (OCUL) is a consortium of Ontario’s 21 university libraries. OCUL leverages collective resources to purchase, manage, and preserve electronic collections, and provides access to them through digital infrastructure offered by Scholars Portal (SP), the consortium’s service arm. SP provides support for a wide range of content repositories, member services, and technical services in the areas of collections, resource sharing, research services, and digital preservation.

Ask a Librarian (AAL) is a virtual reference service managed by SP that connects students, faculty members, and researchers from participating university libraries across Ontario with real-time library and research assistance through chat. The service launched in 2011 as a
partnership among 7 OCUL libraries, and has since expanded to 13 of the 21 OCUL members. The service reaches approximately 364,000 full-time equivalent students and handles roughly 25,000 chats per year. Since 2014, the service has also been offered in French under the name *Clavardez avec nos bibliothécaires* (“Chat with our Librarians”) at 5 libraries. The service is coordinated by a dedicated SP staff member.

AAL is open 67 hours per week during the academic year. Staffing is managed through a collaborative model in which libraries provide staffing hours relative to their student populations and service usage patterns. During evenings and weekends, staffing is supplemented through the Virtual Reference Mentorship Program, an initiative in which OCUL hires current library school students and recent graduates across Ontario to work on AAL for 3-5 hours per week. Mentees who successfully complete a year in the program are invited to return for a second year.

**Hiring**

Candidates for the Mentorship Program must be current students in a Master’s-level program in library or information studies, or have graduated within the past year. They must also have completed a graduate-level course focused on reference or public service, meaning that most eligible students are in their second year of studies. Experience in customer service, hospitality, or the library environment is preferred. Mentees working on the French side of the chat service must be fluent in written and spoken English and French.

Short-listed candidates are interviewed online via Skype’s IM functionality to mimic the chat reference environment. The interview is structured into several parts:

1. General questions about past work experiences, focused on public/customer service;

2. Behavioral questions specific to virtual reference, asking how the candidate would respond to common situations or challenges;

3. Research questions requiring the candidate to navigate a member library’s website and identify appropriate resources; and

4. A practice chat, with the candidate acting as the chat provider. The interviewer poses an intentionally misleading question to see if the candidate will conduct a reference interview and clarify the information need.

Through this approach, the interviewer can assess the candidate’s comfort level with the online chat environment, evaluate their customer service skills, judge their search abilities and knowledge of electronic resources, and gauge their online communication skills. Through the mock chat, the interviewer can also estimate how the candidate would perform on the virtual reference service, appraise their technical skills (such as response time, typing accuracy, and message length), and estimate how well their approach conforms to best practices and behavioral standards for chat.
Training

Training on AAL takes place during late August over a single 8-hour day to minimize travel demands on the mentees, who reside across Ontario. Some sessions are delivered by SP staff, others by participating libraries’ local chat coordinators, and the remainder by experienced chat operators or mentees. This arrangement reduces the training demands placed on the chat coordinator, incorporates a range of perspectives, expertise, and experiences from across OCUL, and introduces enough variety to keep the mentees engaged.

As recommended in the literature, AAL’s standard training for librarians and library staff introduces the functionality of the chat software, service policies and procedures, and online communication skills, with lots of hands-on practice. To address the limitations of student workers, mentee training is more comprehensive: it introduces the consortial service model, covers online communication and customer service in greater detail, and expands the focus of training to include reference and research skills, with emphasis on the online reference interview and behavioral guidelines.

The consortial work environment. Given that mentees are generally unfamiliar with the consortial library environment, training begins with an introduction to OCUL and SP, including the consortium’s mission, the services offered by SP, and a detailed introduction to how AAL operates. A second-year mentee is invited to share their experiences in the mentorship program, including the challenges they encountered and how they overcame them, and provide advice on adjusting to chat reference. Mentees also receive in-depth training about how to answer questions from the 13 participating libraries, and are taken through a series of frequently asked questions to orient them to chat policies and procedures. Of particular importance in the consortial environment, the presenter emphasizes when mentees should pick up chats, and when they should leave them for a colleague to accept.

Chat software. The chat coordinator provides a demonstration of the chat software and explains how to use its key features. Each function is displayed in context through a live practice chat, submitted by another presenter. To familiarize mentees with the consortial reference model, emphasis is placed on recognizing which participating library the question originates from, library login procedures and how to access each partner’s licensed content, and where to find contact details and other useful information through library profiles within the chat platform. The mentees are also given time to engage in hands-on practice, during which they pair up and engage in a role-playing session in which one assumes the role of the user and submits a question and the other acts as the chat operator. The mentee in the operator role works through an exercise sheet, testing out the key functions of the software. Then the partners switch roles so that each mentee can view the chat interaction from both perspectives.

Reference and research competencies. To prepare mentees for answering a wide variety of questions, the training day has a strong reference and research skills component. One session addresses the differences between face-to-face and online reference interviews, and introduces specific recommendations for virtual reference transactions. An additional presentation covers the types of questions frequently posed through chat and recommends effective approaches for answering them. Resources covered in this session include the library catalogue, database and e-
journal lists, and research guides. Rounding out this section of the training day, mentees are taken through “research bootcamp,” which provides subject-specific research tips and introductions to key resources in various fields, such as health sciences and business. In each session, attention is paid to when mentees should refer questions to subject or functional experts to ensure quality service.

**Customer service and communication skills.** Mentees receive extensive training in online communication and chat etiquette, focusing specifically on the limitations of chat and the misunderstandings that arise online, especially in collaborative services. The mentees are also informed of common problems that occur during each stage of the reference transaction and provided with communication strategies to overcome them. Additionally, training stresses the need for instruction through chat, and outlines effective teaching techniques for the online environment. These lessons are reinforced through an interactive exercise that asks the mentees to review a past chat transcript, identify positive and negative aspects of the operator’s performance, and recommend how the transaction could be improved. Finally, to ensure that AAL complies with provincial accessibility legislation, the mentees also receive training in inclusive, accessible public service and are equipped with additional communication tips to serve patrons with disabilities.

**Follow-up.** Mentees are given access to a training environment where they can practice using the chat software at any time. SP staff are also available for additional paired practice. To increase their comfort level with the technology and reinforce chat policies and best practices, mentees shadow experienced operators during their first week of work in September. The mentees log in to the software, observe how operators decide which chats to pick up, and read through chat transcripts to see how the operators handled real questions. They also have the opportunity to learn from their colleagues by asking questions in the inter-operator chat area, not just during the shadowing sessions but throughout the year. At the end of the shadowing week, the coordinator follows up with the mentees, enquiring about their experiences and offering to clarify any questions that came up during the observation period. Throughout the year, the coordinator remains available to answer questions, troubleshoot issues, or provide refresher training as needed. Additionally, the AAL staff website provides documentation and archived training recordings for the mentees to review at their convenience.

**Assessment**

To verify that mentees are meeting service quality standards and to evaluate the effectiveness of the training program, the chat coordinator assesses mentee performance throughout the year. Following the mentees’ first shifts in September, she reviews their chat transcripts and offers suggestions to them via email about how they can improve. She continues to perform spot-checks throughout the semester. While the mentees’ transcripts are generally strong, they are more informal in their communication style than librarians, and they are prone to beginning their search for information without conducting a thorough reference interview and clarifying the information need. Therefore, they do not fully conform to the behavioral standards outlined by RUSA, but they do improve with experience.
Despite these weaknesses, a review of exit survey results from the 2016 calendar year indicated that the service provided by the mentees was rated as excellent in 77% of interactions, and excellent or good in 94% of cases (Table 1). Evaluations were higher than those for librarians and library staff, whose service was rated as excellent in 68% of transactions and either excellent or good in 89% of interactions.

Table 1

*Ask a Librarian Exit Survey Responses by Staffing Type: “The Service Provided by the Librarian Was…”*

<table>
<thead>
<tr>
<th>Service Rating</th>
<th>Excellent</th>
<th>Good</th>
<th>Satisfactory</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentees</td>
<td>226</td>
<td>49</td>
<td>14</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Librarians and library staff</td>
<td>594</td>
<td>183</td>
<td>55</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>Totals (N = 1162)</td>
<td>820</td>
<td>232</td>
<td>69</td>
<td>21</td>
<td>20</td>
</tr>
</tbody>
</table>

Survey results from the same period showed that users believed the mentees provided “just the right amount of assistance” in 95% of transactions, compared to 89% of transactions involving librarians or library staff (Table 2). There was no difference in users’ willingness to return when served by mentees compared to librarians or staff; patrons stated they would use the service again in 98% of all cases (Table 3).

Table 2

*Ask a Librarian Exit Survey Responses by Staffing Type: “The Librarian Provided Me With…”*

<table>
<thead>
<tr>
<th>Level of Assistance</th>
<th>Just the Right Amount</th>
<th>Too Little</th>
<th>Too Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentees</td>
<td>277</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Librarians and library staff</td>
<td>767</td>
<td>90</td>
<td>7</td>
</tr>
<tr>
<td>Totals (N = 1155)</td>
<td>1044</td>
<td>103</td>
<td>8</td>
</tr>
</tbody>
</table>
In the free-text comments at the end of the exit survey, the mentees’ willingness to help and their welcoming attitude were frequently cited by users. Mentees were often described as “helpful”, “nice”, or “friendly”, and it was common for patrons to leave feedback that the service provided was “awesome”, “fantastic”, or “amazing”. There were also some indications that the mentees may take more time to describe how to conduct library research, familiarize patrons with relevant resources, and provide model searches, as evidenced by these comments:

“[Mentee] was really super helpful! It’s [a] wonderful idea to both familiarize the student with resources they can use and also put the effort in to help find specific articles simultaneously with the student. I haven’t had all librarians do this with me when I’ve used this chat system…”

“I’ve used this chat service many times but I think this was the only time when the librarian really took the time to help me with my problem and did not rush me in anyway [sic].”

Negative comments in the mentees’ exit surveys mainly related to the limitations of the chat platform or disagreements with service policies. There were a few complaints that mentees were not able to find resources needed for the user’s assignment; however, we receive similar comments for librarians and library staff, so this complaint is not specific to mentees.

**Discussion**

The general trend towards providing more online or blended learning at academic institutions means that an increasing number of library users will never, or rarely, be on campus. Virtual reference is one of several services that provides important support for such users at the point of need (Coonin, Williams, & Steiner, 2011; Li, 2013; Summey & Akers, 2006). To be successful and scalable in serving both these and on-campus users, OCUL’s AAL service relies heavily on the mentee program for staffing.

<table>
<thead>
<tr>
<th>Staffing Type</th>
<th>Willing to Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentees</td>
<td>Yes: 283, No: 5</td>
</tr>
<tr>
<td>Librarians and library staff</td>
<td>Yes: 839, No: 20</td>
</tr>
<tr>
<td>Totals (N = 1147)</td>
<td>1122, 25</td>
</tr>
</tbody>
</table>

*Table 3: Ask a Librarian Exit Survey Responses by Staffing Type: “Would You Use This Service Again?”*
The AAL mentees perform very well on chat, with room for improvement, supporting the results of previous studies by Lux and Rich (2016) and Keyes and Dworak (2017). In accordance with the findings of Langan (2012), the coordinator’s occasional review of mentee transcripts reveals that the language and structure of interactions are often more casual than those of library staff, and that their reference interviews are sometimes incomplete, indicating that mentees are not fully following the RUSA guidelines. Despite these weaknesses, the student employees are consistently rated slightly higher than library staff in the exit survey, confirming studies by Faix (2014) and Stevens (2013) that users are satisfied with reference services provided by student workers.

User comments often cite the friendly and welcoming attitude of our student employees; contrary to research by Pomerantz, Luo and McClure (2006), it appears our students do display the personality characteristics necessary to successfully engage with the user. The conflicting findings may be attributed to the mentees being employed directly by our consortium, rather than by the vendor as in the case of NCKnows, or because the AAL training program emphasizes approachability and rapport-building in the reference transaction. Mentees may be purposely using a more informal style in an effort to be welcoming. Feedback also indicates that mentees may be taking on a teaching role, demonstrating how to use resources and modelling search strategies, providing support for Bodemer’s (2014) assertion that student employees can effectively provide instruction through chat. Possibly, instances of teaching may be more common among our mentees than in other studies because our students have an LIS background and are aware of the importance of instruction in the reference interaction.

The success of our mentees can be attributed to our holistic training program, which adheres closely to best practices from the literature. Mентee training minimizes demonstrations of the chat software, as Huston (2009) has found that library staff are comfortable with chat services and confident in their technological abilities; instead, training on the chat platform involves hands-on practice and transcript evaluation exercises, as advised by Luo (2009). The training also addresses areas in which students traditionally perform more poorly than librarians, such as the communication and reference interviewing issues identified by Langan (2012), to close the quality gap with librarians. Finally, by presenting common and potentially stressful situations and the strategies to deal with them, training attempts to address the attitudinal competencies recommended by Ozkaramenli (2005) and Luo (2007), such as working under pressure, flexibility, and a customer service mentality. This is reinforced by inviting past mentees to share their experiences and the week of shadowing before their initial shifts on the service.

Other libraries can benefit from several takeaways of the AAL mentee experience, and our unique training process in particular. A compact training program can adequately prepare student workers for chat reference work. Especially among student assistants with an LIS background or previous experience working in libraries, it is possible to cover the essentials of the training software, the online reference interview and research strategies, communication best practices, and policies and procedures in a single day. The chat coordinator can and should invite other librarians, staff, and student workers to present this content, as trainees benefit from hearing from a variety of individuals and learning from their diverse experiences. Finally, it is possible to effectively assess student workers’ performance using simple tools and techniques, such as exit surveys and spot-checks of transcripts.
There are additional considerations for chat services operating in the consortial context. The collaborative reference environment is usually new to student employees, and as such they must learn new workflows in order to provide strong service. Mentees must be briefed in depth about the operational model, policies, and procedures for the service, which are likely to be more complex than in single-institution chat services. Additionally, rather than equipping mentees with detailed knowledge about any one library, training must be broad and provide general approaches for navigating library websites, finding relevant resources, and searching in different tools or platforms, so that instructions are flexible enough to be applied to different partner libraries.

Although the current AAL training program appears to be effective, it is evident that we need to further emphasize and reinforce the listening and enquiring stages of the reference process and provide tips for question clarification. In addition, more formal and consistent evaluation of the mentees is desirable in order to ensure a high level of service. Consequently, we hope to undertake several steps in the coming year. Firstly, we plan to conduct an in-depth chat transcript evaluation project comparing the performance of librarians, library staff, and student workers, to determine how well their responses follow RUSA guidelines. We hope that this will provide more detailed and systematic findings than the occasional and informal spot-checks done to date. We also plan to develop and implement a rubric to provide more standardized and comprehensive evaluations and feedback to mentees at the end of each semester. Finally, we would like to incorporate assessment from the mentees’ perspectives, so that they can share their experiences and satisfaction levels with us.

**Conclusion**

Virtual reference is an integral component of library services for all users, especially off-campus patrons and distance learners, as it allows libraries to meet users at their point of need. In a time of financial belt-tightening and staffing shortages, student employees are essential to operate a high-quality, scalable, consortial virtual reference service. Student workers are a viable staffing solution; AAL exit surveys indicate that patrons are highly satisfied with the service provided by our mentees, and their transcripts are generally strong. Although mentees need to improve in the areas of online communication and question clarification, through a holistic training program and frequent feedback, they can ably meet service quality benchmarks. Our experience demonstrates that training and assessment does not have to be intensive; a compact training schedule and lightweight evaluation tools are effective, and can be adapted to scale and to incorporate feedback from users and the students themselves.
References


Using a Library Learning Object Repository to Empower Teaching Excellence for Distance Students

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Stefanie Metko  
Virginia Tech University

Abstract
In 2015, in response to the findings of an online learning needs assessment, two librarians and a web developer began creating a library learning objects repository. This repository would ensure that distance learners were receiving excellent library services, including library instruction. The team worked with the libraries’ digital media specialist to create an attractive interface and consulted with one of the library’s metadata specialists to create metadata that would help to make the repository easy to search and browse. Further plans include wide-scale sharing with the larger library community and continued growth in the number and types of objects in the repository.

Introduction

Virginia Tech is a comprehensive, public, land-grant university with over 33,000 students and is the state’s leading research university, with locations across the state and online. Building off the university’s three primary mission areas of learning, discovery and engagement, the University Libraries at Virginia Tech have sought to increase engagement on a local, regional, national, and global level through a number of reorganizations aimed at positioning the Libraries to be deeply embedded in University strategic initiatives. The Libraries are uniquely situated within the teaching and learning enterprise at the University and have been growing in their leadership within the educational content development space, as well as in the areas of library instructional design, library online learning services, and the curation and preservation of educational materials. In addition, the University underwent a massive structural and strategic reorganization beginning in late 2014, placing greater emphasis on metrics-based decision making and on connecting outcomes-based assessment to student and faculty success indicators. Secondary outcomes were also established: personal development, workforce development, knowledge creation, economic development, and embedded societal impact. The Libraries were charged with mapping their own strategic growth areas to these success indicators.

Odyssey (http://odyssey.lib.vt.edu/) is the library learning object and educational content repository developed and maintained by the University Libraries at Virginia Tech. In the planning stages since spring 2014, Odyssey formally launched to the Virginia Tech campus community in August 2017. Odyssey was created in response to campus changes and to fill specific needs within Virginia Tech’s library and campus: content that was modular and
adaptable to a variety of contexts, content that could easily be added to LibGuides and Canvas, and a platform that made the content easy to find and gathered it into one place. Additionally, Virginia Tech, a land-grant institution, increasingly views itself as a global land-grant university, one that extends its land-grant mission beyond Virginia to the entire world (Virginia Tech, 2015). To this end, Odyssey contains open educational resources that can support library instruction not just at Virginia Tech, but around the world. This case study will describe the development of Odyssey as well as applications to other long-term online learning projects.

**Literature Review**

Definitions of learning objects abound. Wiley (2002), in a widely-cited definition, defines a learning object as “any digital resource that can be reused to support learning” (p. 6). Because this definition is so broad, others have crafted more specific definitions. Weller (2007), for instance, notes that a learning object “addresses a clearly identifiable topic or learning outcome” (p. 27). Laverde, Cifuentes, and Rodríguez (2007) and Becker (2010) state that learning objects are self-contained. These definitions emphasize the learning object’s digital nature, purpose in learning, and potential for reuse. This reusable, modular nature of learning objects distinguishes learning object repositories from other digital repositories (Cervone, 2012). A learning object repository, then, “is an electronic database that accommodates a collection of small units of educational information or activities that can be accessed for retrieval and use” (Lehman, 2007, p. 60-61).

As higher education has increased its online learning offerings, libraries have turned to the creation of learning objects as a way to increase students’ engagement with the library (Kammerlocher, Couture, Sparks, Harp, & Allgood, 2011). Once a learning object is created, it can be reused in a variety of contexts at the point of need, facilitating alternative approaches to library instruction, such as the flipped classroom (Becker, 2010; Shank, 2003). Learning objects can also help libraries scale their instruction to meet the needs of increasing numbers of students, even with a limited number of instruction librarians (O’Neill, 2017).

There are several well-known learning object repositories featuring learning objects suitable for library instruction. MERLOT (https://www.merlot.org), for example, produced by the California State University system, features a wide range of learning objects from a variety of disciplines, including a Library and Information Services Community Portal with objects that can be used for library instruction. Likewise, OERCommons (https://www.oercommons.org/), an expansive collection of open educational resources, contains information literacy resources and a Library and Information Literacy group where such resources can be found. Other repositories are dedicated exclusively to library and information science, such as the ACRL Instruction Section’s PRIMO (http://primodb.org/). PRIMO features librarian-created, peer-reviewed teaching materials on a variety of information literacy-related topics. Other libraries are creating and maintaining their own learning object repositories to accomplish goals particular to their institutions (O’Neill, 2017).

**Uncovering the Community’s Needs**

When the authors, as well as a web learning environments application developer, joined the University Libraries at Virginia Tech in 2015, they were tasked with creating an online learning platform. The goal was to deploy high-quality library learning materials for new and
existing initiatives to meet the needs of both online and distance students and new general education courses and other curricular initiatives, such as digital literacy and ePortfolio. The original visionaries of the platform had by that time left Virginia Tech, so the authors were essentially beginning the planning process all over again. As they began to plan, they realized that there was much that was not known about the state of online learning at Virginia Tech, let alone the libraries. Therefore, in October 2015, the authors embarked on a wide-scale needs assessment to learn about current library use in online classes, as well as the needs of online and extended campus students.

Since Virginia Tech is a decentralized campus with multiple locations, and several units at the main campus were charged with what seemed like overlapping student and faculty clientele, the authors focused their efforts on identifying duplication as well as gaps in service. This needs assessment confirmed their impression that there was no existing learning object repository on campus that could serve the needs of library engagement, particularly as that engagement connected to new initiatives and services. Learning objects created within the library were scattered among a variety of platforms, including LibGuides, individual and library YouTube channels, the learning management system, and the library website. In addition, what they found solidified their commitment to creating a platform to support online learning in all its forms. Institutional data indicated that the number of students taking online classes had increased steadily in recent years, more than doubling from 2006-2016. This number included both students based at the main campus in Blacksburg and students based elsewhere taking online classes. When asked whether faculty required the use of the library for online classes, both students (64.7%) and faculty (74.9%) said that the use of library resources was not required for online classes. When students were asked why they did not use library resources in their online classes, 71% indicated that they were not required to use them, as would be expected, but 13.5% also indicated that they did not know how to use library resources. Faculty articulated a number of needs for a learning objects repository: it should be user friendly for both faculty and students, be visually appealing, contain resources that were relevant to their teaching, and be easy to search and browse. A learning objects repository would be a way not only to support these students with tutorials and other content that would help them learn to use the library resources but also to increase the visibility of library resources by making it easy to integrate training and tutorials into online classes.

Choosing a Platform

When it was time to begin developing the platform in spring 2016, the authors worked with their library’s web learning environments application developer to build a repository that was responsive to the needs uncovered in the needs assessment. As a first step, existing platforms and repositories were considered, beginning with OER Commons. This site is well known and would have given increased visibility to the content the authors created. However, OER Commons was soon rejected as an option: it would have required paying a yearly fee, and OER Commons would only be able to index an existing repository, not create one from scratch. In addition, since some of the content would need to be created specifically for programs and websites unique to Virginia Tech, it would not necessarily be useful to other educators and therefore not completely suited for inclusion in OER Commons.

The authors also considered adding learning objects to Virginia Tech’s institutional repository, VTechWorks, and building a forward-facing page that would pull the learning objects
from VTechWorks. VTechWorks was initially appealing because using it would have eliminated the need to develop a repository. However, in an exploratory conversation with the repository manager, the authors realized that VTechWorks was not the most appropriate place for the learning objects. For starters, learning objects are updated often, and an out-of-date object would likely need to be replaced without previous versions being kept or a new entry created, in contrast to VTechWorks’ file persistence. In addition, the addition of learning objects to the existing repository did not fit VTechWorks’ goals, and the authors realized that they wanted to have more control over the repository than they would have had by using an existing platform. Finally, using VTechWorks would not really save much time, as the user interface would still need to be built.

Once these existing repositories were decided against, the authors considered possibilities for developing their own. The major platforms considered were DSpace, Fedora/Hydra, and Omeka, as well as the possibility of building a repository from scratch. They decided against developing a repository from scratch since it would have required a considerable outlay of time and energy. Ultimately, Omeka was chosen. Omeka is easy to install and works with a common server architecture. In addition, it has easy-to-use plug ins, such as the ability to integrate with Shibboleth so that the university’s single sign on could be used for administrator log ins. The interface also allowed the customization of other features, such as custom data types, without having to do custom coding. Omeka was also ideal because file persistence was not needed since the learning objects are likely to be updated frequently. It also has an easy-to-use back end which makes it simple for librarians to be able to add most items to it, rather than having to ask the web developer to add items to it on the librarians’ behalf.

As with any technology, not everything about Omeka is perfect. Because it’s so widespread and runs on a technology that’s ubiquitous on the web, it’s a potential target for security issues. However, in the authors’ experience, bugs do get fixed quickly. Omeka was designed primarily for images, so incorporating html5 and videos has been somewhat complicated. While librarians are able to add most content themselves, any Articulate Storyline products must be sent first to the web developer, who adds them to the server and creates a record featuring a screenshot of the tutorial. Clicking on that images will bring up the link to the tutorial in a new window. Videos are pulled from the Odyssey YouTube page, which allows the use of YouTube’s captioning features. The use of YouTube also allows easy integration with the LibGuides platform. It was also necessary to create some custom metadata options, since Odyssey’s needs as a learning object repository were different from other repositories. Additionally, Omeka’s built-in search function was quirky (for instance, initially, a search string had to have at least 4 characters, which meant that a search for APA would not bring up any of APA citation content), so the web developer created a workaround. The built-in filtering system is part of the search functionality, so when it was determined that a standalone filtering system was needed, that had to be built. Despite these downsides, Omeka has able to give what was needed for Odyssey. Omeka also has the potential to allow the expansion of Odyssey in the future. A learning technologies integration (LTI) is currently in the works that will allow Odyssey to integrate with the Canvas learning management system, thereby enabling users to integrate learning objects into their classes easily. Additionally, OmekaS could give the potential to make different portals for different users, such as Virginia Tech and non-Virginia Tech users, easily directing them to the content they are looking for.
Features of Odyssey

All those involved in the creation of Odyssey wanted it to be both visually appealing and easy to use, so the authors worked with others in the library on the visuals and the metadata. A custom Omeka theme was used, and the authors worked with the library’s digital media specialist to create a unique visual look (Figure 1). Since Omeka is frequently used in libraries, it’s well documented, and the VT Libraries’ system administrators have experience working with it already, simplifying the theming process. Because a visually appealing repository would not be very practical if its items could not be easily found, the authors consulted with the libraries’ data curator on the metadata and tagging system. In addition to Omeka’s standard Dublin Core metadata, an additional field of item type was added to differentiate the item type from the file type. In addition to these chosen metadata fields, Omeka’s tagging system and the ability to create collections were also implemented. Initially, each tag was created as needed when an item was uploaded, but after the repository grew to about 20 items, it became obvious that this lack of standardization was making the tagging system inefficient. In addition, user-created tags tended to be ones that would make sense only to those within the Virginia Tech community, such as course abbreviations unique to Virginia Tech. Once the tags were standardized and some best practices for their creation were developed, the system became much more useful. Finally, Omeka’s collection feature made it easy to curate groups of objects for different users, such as first-year writing. Since each collection has its own link, it’s easy to direct faculty and students to resources that they will likely find helpful.

Another element that was important to consider was accessibility. It was essential to create something that could be used by everyone, regardless of ability, so it was important that the website as well as each learning object was accessible. The website itself is mindful of the needs of those using screen readers, and videos, which are pulled in from the Odyssey YouTube channel, are captioned. Articulate Storyline tutorials use both captions and alt text for images. The goal of making everything accessible is one that the authors are still moving towards; as they learn more about accessibility and add new types of content to Odyssey, they are likely to run into new challenges and plan to continue learning about accessibility and working with experts both within the library and on Virginia Tech’s campus.

In addition to making the content accessible, the authors wanted to make it as open as possible. All items that are created have their Creative Commons licensing information visible on the object, and when items are added to the repository, their licensing information is included in the metadata. The majority of the items in Odyssey are licensed with the CC-BY designation, and others are welcome to adapt and remix the content as long as they follow the guidelines of the CC-BY license.

In addition to creating robust metadata, Odyssey needed to be easily found by the Virginia Tech community. While having a repository would make it easier for librarians to direct users to the content and to integrate it into Canvas courses and LibGuides, the authors also wanted users to be able to discover it on their own. Since the Virginia Tech Libraries’ main library website was being redone in summer 2017, the authors took that opportunity to ask the web team to add a link from the library’s homepage, which they did. This link has helped to direct new traffic to Odyssey, both from those who stumble upon it and those who do not necessarily remember the URL but do remember how to navigate to it.
Figure 1. The Odyssey Home Page.

The Future of Odyssey

The authors’ immediate plans for Odyssey include continuing to add new content, particularly in areas where our library instruction is growing, such as digital literacy. Their unit in the library is embarking on a curriculum mapping project that will demonstrate areas where it’s possible to increase students’ interaction with library instruction, particularly through the creation of online content. In addition, Virginia Tech has long-range plans to build its programs at extended campuses, so additional online content could help to reach students there. They also...
hope to soon be able to implement the LTI that would enable easy integration of objects from Odyssey to Canvas.

**Conclusion**

While not every library will find it necessary to create a learning objects repository for their own library, there are several lessons to be learned. First, the need for collaboration is crucial when setting out on a project of this magnitude. Odyssey would not have been possible without the assistance of others in the library, such as the web developer, media design specialist, and data curator. It was important that the authors recognize their own limitations and reach out to those within the library who could help further the project.

While embarking on a large needs assessment may seem like the right place to start, it may also be wise to consider the landscape. For example, in the case of this project, the campus was changing so rapidly that the pace in which the changes were happening couldn’t keep up with the pace at which the researchers could process the data and act upon it. In addition, by the time partners are found, miscommunication and other pitfalls could damper any low hanging fruit that might have been uncovered earlier had a different approach been taken.

However, embarking on a comprehensive needs assessment did uncover very clear gaps in service that existed, particularly for distance and online students. Careful consideration of the needs of the population could inform decisions regarding content creation, the scope of the project, and ultimately whether it’s better to curate resources from other sources or if there is truly a need to develop something new. In the authors’ case, there truly was a need, not only on the campus but also within the field for new content to be developed. There was also an equal need for that content to be openly shared within the field so that others could build on that work in a way that could have an impact beyond Virginia Tech.

Another key takeaway is that a project like this will not happen overnight. Careful planning is the first step. Identifying a team’s capacity to sustain the project, administrative buy-in, the political landscape on a campus, and other factors that influence long-term success should be considered. This project took nearly two years from the planning process to the implementation phase and it is still a work in progress. It took both hours of work and passion for that work. Flexibility, both in terms of mindset as well as the schedule for accomplishing goals is key to a successful design, implementation, and maintenance of a project such as Odyssey.

Lastly, knowing the community and their needs and setting realistic goals for the project will go a long way in seeing the project to completion. It is important to note that it became clear to the authors towards the later stage of the project that it wasn’t possible to be all things to all people. In fact, the project became more meaningful with focused intent. In the planning process, setting time aside to think through scope and audience will alleviate later concerns and help the project to be successful.
References


A Literature Review Covering 20 Years of Research on Marketing Library Resources to Distance Learners

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Autumn Luscinski
Noodle

Abstract
The literature on marketing library resources to distance students reaches back to at least the mid 1980’s based on a simple EBSCOHost search across over 40 different databases. Authors of the present study sought to develop a comprehensive understanding of what our colleagues have learned via research about this critical topic. Because the web, as we know it, first materialized in the mid 1990’s with the advent of Netscape Navigator, we chose to limit our research to two decades. According to Thorpe and Holt (2018) the systematic literature review (SLR) helps researchers make sense of large volumes of information and allows for the translation and synthesizing academic research so that it can be utilized in policy or practical contexts (Para. 7). The current researchers considered this an ideal approach as we aim to develop a clear and comprehensive picture of the research on marketing library resources to distance populations.

Methods
Researchers chose to use a Systematic Literature Review approach as this method of assessment is designed to “identify existing gaps in a field of research and to make recommendations for closing these gaps” (Thorpe & Holt, 2018, Para. 1). Researchers examined scholarly literature in order to capture the comprehensive body of work representing research in this area, more specifically, studies, concerning the effectiveness of marketing efforts about library services directed towards distance learners. Searches were conducted across Pepperdine University Libraries’ database subscriptions including EBSCOHost databases, Scopus and Emerald. Pepperdine Libraries’ EBSCO Subscriptions include the databases listed in Appendix A.

The following search terms were used in various combinations: distance, marketing, library. Because the researchers wanted to be as inclusive as possible, our search terms were broadly cast. The following terms were tried but discarded because the search results were not affected: “distance learning,” online, outreach, advertising, communicating. The searches were limited to scholarly publications published within the last 20 years. Literature searches ultimately produced 51 scholarly publications - 46 articles, 3 books and 1 book-chapter. The three
researchers each read and assessed 2/3 of items on the resulting article/book/book-chapter list, thereby ensuring that each title was read and assessed two times.

Brief notes were captured and discussed in a Google Document; meetings among the researchers (who were not employed conveniently near one another) were held using zoom software, conference calls and emails.

**Research Questions**

What insight, if any, has been gained from research studies on the effectiveness of marketing library research tools to distance students?

What marketing methods, if any, have worked?

Does the success of marketing approaches seem to differ depending on the target population characteristics (for example: graduate students v. undergraduate, disciplinary differences etc.)?

**Surprising Findings**

Anticipating a substantial body of literature to examine, researchers mutually expressed disbelief that 39 out of the final 51 scholarly publications gathered did not provide assessment of marketing efforts. This, aforementioned literature, principally described the development and/or implementation of marketing plans. Often, these articles described promotions that were enacted as a result of preceding studies relating to student awareness of library resources. While such articles are enormously useful to librarians working with distance student populations, the researchers’ aims were to understand specifically what our library colleagues have learned from conducting research studies of marketing approaches, programs, and techniques.

**Marketing Project Descriptions**

The literature that described various marketing efforts without providing an assessment of their effectiveness represented more than two-thirds of the articles gathered. Numerous distance populations were represented, including undergraduate and graduate students and also numerous disciplines. Because these projects did not address the research questions posed in this study, they will not be discussed further in this paper, though they will be included in the reference list.

**Article Reviews**

A number of articles offered thorough descriptions of marketing efforts and practices but did not provide methodic research on the impact of the outreach programs. In this group of articles steps taken or plans made to analyze results were not specifically identified. Rather, observations might have been made regarding the success of communication efforts, for example in terms of increased numbers of reference questions received post implementation.
Amanda Bezet’s article (2013), “Free Prize Inside! Embedded Librarianship and Faculty Collaboration at a Small-Sized Private University,” describes marketing and assessing the embedded services at Everglades University over a 12-year period. Everglades University has three campuses in Florida with mainly non-traditional students and 72 online students out of 1,089 students. Marketing efforts for distance learning library services started with emails to individual faculty, a document detailing services mailed as a group email to all online faculty members and an online presentation in the university’s online software for online faculty members that was offered twice live.

In July 2012 a survey of 13 Yes or No questions was sent out to all online faculty members who had taught the previous academic calendar year. An example of one of the questions is, “Do you view it as a benefit that the university librarians have access to your online course(s) and can post announcements, threaded conversations, and shared documents?” 56.8% of faculty contacted replied and the survey had some disappointments, such as only 14% of the faculty that responded had requested that the librarians create customized library instruction for their course.

Despite the disappointments of the survey, the Everglades librarians are viewing it as an opportunity for growth. They also mentioned that surveys were not the only means of assessment. Informal assessment can come from f2f meetings with library advisory boards and other groups working with distance learning faculty/staff and students. In conclusion, findings from the assessment in Bezet’s article were from online faculty only and did not include student assessment. No future follow up assessment was mentioned in the article.

Dalal and Lackey’s 2014 article, “What if You Build It and They Still Won't Come? Addressing Student Awareness of Resources and Services with Promotional Videos,” describes librarians’ increased attention to marketing as a result of needs assessment investigations. The researchers gathered information from School of Education leaders as well as faculty and students in hybrid courses. Thereafter, face-to-face focus groups were held with student library patrons. Librarians expressed shock about students’ lack of awareness of library resources. A student was quoted, “I just wish there was a website made by a librarian for my course or my subject area that told me which databases were the best to use!” This specific student, was described by the authors as a “traditional library-loving” student, and “one of the Libraries’ cheerleaders” (p. 228). Authors lamented,

If these student focus group members were not aware of one of the Libraries’ best teaching-learning resources, the research guides, built in support of the course-integrated, assignment-specific instruction sessions, then how could these guides and other resources get on the radar of the university’s distance learners? (p. 228)

Librarians teamed with library student workers to create one-minute promotional videos. Media tools used included Camtasia Studio, a Kodak Zi8 Pocket video camera (flip camera), public domain film and music from Camtasia’s Library, the Prelinger Archives, CCmixter.org, YouTube’s audio library, and Jamendo.com. The completed videos were shared with select
faculty on the university’s two campuses. Their comments led librarians to host the films on YouTube and also embed them on the library’s Springshare research guides.

Dalal and Lackey describe the video production, editing and hosting procedures in detail, providing valuable information for colleagues who wish to try emulate their process.

The authors description of video promotion methods is somewhat vague: through “librarians, course instructors, faculty department meetings, student leaders, social media (YouTube, Twitter, Facebook, and Google+, as well as the library homepage and campus television), and word of mouth” (p. 235). Videos were also played during research instruction sessions. The videos did not go viral, Dalal and Lackey write. However, the most successful marketing approaches included student leaders, faculty collaborations and online learner orientation sessions.

A presentation to the Student Senate, whose members acknowledged gaining new information. Subsequently, research guide and YouTube hits steadily increased. Face-to-face presentations were also made to various faculty groups whose departments include fully online and blended courses. Collaborations with specific faculty followed. As a result, a video featuring the IbisWorld database was created and played to students prior to research instruction sessions for the College of Business Administration. Graduate Education and Organizational Leadership faculty requested a video on finding empirical articles. As with the business classes, students were required to view the film prior to instruction, effectively flipping the classroom session. The director of a new Online RN to BA of Science in Nursing wished for videos introducing individual librarians, resulting in a Know Your Librarian video series. Finally, a film was tailored to the specialized needs of online Music students. The libraries have received accolades for their support of distance students. Online students have found the library videos, co-created by students, clear and helpful. Though the authors don’t specify how this point has been communicated, the films have helped create a sense of connectedness among online learners. Moving forward the library is planning on more assessment, including conducting formal surveys to all distance learners and faculty.

Valerie Davis, Assistant University Librarian and Outreach Librarian for Agricultural Sciences at the Marston Science Library, describes the evaluation of her library’s describes marketing efforts to distance students at University of Florida as informal (2007. The distance population, difficult to define, Davis explains, who have complicated needs, include researching faculty, teaching faculty, extension specialists, extension agents, permanent staff, temporary staff, distance learning students, off-campus students, graduate researchers, and undergraduate students. These groups each had unique information and research needs a well as communication challenges. The specific size of this population, nor its subgroups, is not delineated.

The goals and objectives of marketing program were designed to alight with the institutional goals. The plan included the development of a quarterly newsletter “outlining new agricultural resources and services”, and instructions regarding general library services presented at face-to-face orientations. A University of Florida Libraries’ Marketing committee was formed which advised the creation of a faculty guide and “mailings” to the student population in the
future. Davis did not specify how the guide would be made available, nor what would be the frequency and content of the student mailings.

Davis acknowledges that electronic surveys would be ideal for effective assessment of marketing services, and is planning to conduct these in the future. At the writing of her article, however, evaluation of the new communication practices included feedback from face-to-face presentations, appraisal of interlibrary loan stats, Web hits, and reference questions.

Library website usage was hampered for 19% of users due to incompatibility with Firefox. One month after the newsletter distribution, hits on the Distance Services web pages increased 65 to 75%, reference questions increased by 5-10 emails daily for circa 7 days. Following face-to-face presentation visits by librarians, interlibrary loan and document delivery requests immediately increased.

Email responses confirmed the unique needs of each patron group outlined above. For example, extension personnel preferred email communication. Their need for local demographic and historic data led them to request a customized research website. Faculty and staff were more interested in databases, URLs, and eJournals. Students wanted electronic and print brochures outlining services and preferred the face-to-face presentations at orientations each term.

Preeti Gupton (2016) profiles National American University librarians’ marketing project PREP (Practice, Readiness, Engagement and Performance), developed by librarians together with Admissions department personnel. National American University, a for-profit institution with 36 campuses in 11 states, offers technical and professional degrees including AAs, BAs, and MAs. All 10,000 students engage in at least some form of online learning. Collaboration with the admissions team, which worked closely and at length with students, had long been a goal for the librarians as this provided enhanced opportunity to reach online learners.

PREP, first introduced to students in fall 2014, was revised and rolled out again June, 2015. The program includes 10 tutorials sent, one at a time, to students via marketing emails once enrolled. Topics cover information literacy skills, study and time management tips, computer, Internet and time management skills, professional development, and academic fundamentals. PREP segments were all housed on the library website. Admissions advisors, who maintained weekly contact with students, were encouraged to continue promoting the tutorials. Fifteen additional segments were added, allowing advisors to recommend specific, suitable tutorials to students, depending on their needs.

Key challenges to the PREP program included the uneven implementation of the program. Promotion of tutorials by admissions staff was voluntary, moreover, the staff was not uniformly trained. Additionally, students were not required to utilize the tutorials, nor even to open the emails. If students indicated unwillingness to engage with PREP, admissions personnel were advised to discontinue mention of the program. The admissions department also suffered from a high turnover rate, resulting in new advisory staff unfamiliar with the PREP program. Assessment of PREP was difficult, as a result. Furthermore, other initiatives were simultaneously launched by the university resulting in difficulty in tracing the cause of any
changes. The library, likewise, introduced other distance learner outreach programs at that time and, finally, usage stats for tutorials were only retained for some of the tutorials.

Gupton writes that the “greatest assessment tool so far has been anecdotal and informal feedback from admissions advisors and directors...” (p. 221). Advisors reported that the lowest new-student attendance rate was recorded at a campus where PREP was fully implemented. Additionally, of the 609 PREP emails sent to students, 588 were successfully delivered. Students who opened the email numbered 17.7% (104), but only 25, or 4.3%, clicked on the tutorial link. The author is pleased, however, that a quarter of students who accessed the email also looked at the tutorial, even though there is no evidence that the tutorials were completed.

Significant lessons include the “power and importance of persistent, personal outreach” (p. 223), according to the author. The project effected higher visibility of library services and awareness among admissions staffers of librarians’ services. Librarians also recognized the importance of quantitative assessments and the author projects such data collection in the future.

In his article, “Building Networks, Building Trust: Statewide Virtual Reference,” Hirko (2005) describes the development and implementation of Washington’s Statewide Virtual Reference Project that began in 2001. A brief section of this report refers to marketing efforts. This large-scale project, encompassed both public and academic libraries and their patrons. As a result, in this endeavor, distance learners included both public and university library patrons. No specific distance learning programs were targeted or identified. Marketing efforts here were largely unsuccessful because of lack of time to coordinate the events and identifying appropriate locations plus a belief the work required was onerous. However, this effort did not concern marketing services to end users, rather the marketing of Library Ambassadors, or, marketing representatives. Contract “Library Ambassadors” were hired to promote the VR service to constituent groups, however, their services were only requested by Homeschooling Group. Promotions consisted of face-to-face powerpoint presentations. Hirko does not discuss possible or actual influence of the Ambassadors’ presentations on adoption or usage of the virtual reference service.

Julia Leong (2008), Information Services Librarian at the University Library University of New England (UNE), Armidale, New South Wales, Australia writes that marketing approaches fall into three broad categories: “using the contact opportunities afforded by individual students who are seeking help; providing outreach information on the Web site; and proactively delivering information directly to groups of students” (p. 85). The distance student population at UNE is not closely described. UNE library’s outreach program, called Project Self Help focused on the first and third categories. Librarians sent bibliographies and books in response to students’ research questions. Additionally, in response to queries submitted via a web form or email, patrons were also sent a series of push emails describing relevant tools and resources, and including web links. At a specified time subsequent to the research request submission, librarians also phoned the students to ensure their research was successful. Responses from patrons were requested, but rarely received. Project Self Help was time consuming for librarians and consequently was discontinued. Leong writes that students benefited from the service. The author quotes a few positive comments from patrons. UNE
librarians continued to send introductory bulk emails, targeting peak research times during the semester, to distance students. Leong writes that informal student feedback was positive.

The author also describes an effort to get students to sign up for a library listserv set up for patrons or request RSS feeds. Librarians found that database usage spiked immediately after listserv postings.

In her article, “Marketing Research Relationships to Promote Online Student Success,” Lillard (2016) describes how the Nursing Department at Central Missouri State University reached out to their library liaison to participate as co-instructor in an online course, Nursing 4010, “Nursing Research” via Blackboard. This project continued for five years and was eventually expanded to include students in the criminal justice program. A web page rich with library/research information, links and tips was created and linked to the class Blackboard page. The Nursing Librarian communicated with students using the web-based course software.

Communications with students mostly consisted of invitations by the librarian to ask questions about research. Lillard does not indicate how many students were in the course nor exactly how many responded, except to call the latter number "few." The author writes that the few students who responded revealed a misguided perception that consulting with the librarian was equivalent to cheating. However, one student from the class did make an appointment to meet with a librarian in person.

A Likert survey was conducted; although the timing, objective, and participants are not described, concerning perceptions and opinions about library services relative to library communications, resource accessibility, and awareness. The two-sentence analysis of responses surmised that students theoretically wished for the librarian’s classroom presence, but a lack of proper marketing impeded utilization of library research tools.

McCallister and Peuler’s 2016 article “Behold the Power of the Donut: A Successful Case Study of a DE Library, Departmental, and Faculty & Student Collaborations” is a case study of various marketing efforts and publicity projects conducted by librarians at the Full Sail University Library in Winter Park, Florida. The university is privately funded; the library serves approximately 15,000 students, more than 2,000 faculty, and 40 degree programs. The authors do not indicate how many students are distance learners nor if their programs are exclusively online or hybrid, undergraduate, professional or masters/doctorate.

In 2011 new programs were implemented to more effectively support online students. Librarians wished to market these services, which included chat reference, expansion of the collection, a resource-mailing program, interlibrary loan, website update, online workshops and tutorials. Emails and announcements were delivered via social media and the library webpage. The authors write that these initial marketing strategies were not as effective as they had hoped. However, the article does not delineate what metrics would constitute “effectiveness” that would met their goals.

A subsequent marketing approach entailed librarians “crashing” university departments with donuts for faculty and brief presentations about new library services. Though this approach
only lent itself to face-to-face encounters, authors suggest that the effort eventually impacted online students because university departments, that included online courses were systematically approached. This point is not explicitly expressed in the article, however. McCallister and Peuler describe that the donut strategy eventually resulted in invitations for librarians to attend departmental meetings and inclusion in other programmed university-wide events.

Additionally, media-savvy library work-study student employees were recruited to create tutorials about services, write on the library blog, lead/create library events. One event listed in the article specifically includes distance students to further the idea of “library as community.” An open-mike and karaoke contest night was offered via GoToWebinar. On-campus screens and projectors allowed distance learners to “see” on-campus students. The specific attendance data is not presented, but the authors write that this event, inclusive of online students, scored a higher attendance that on-campus, face-to-face events.

Another library event inclusive of online learners was Graduate Launch (GL). An orientation for graduation, GL attendance is mandatory for students. For this program, Face-to-face students were able to meet in the library with representatives from various university departments, as well as vendors. Online students were able to participate in GL via FaceTime, GoToMeeting, and the video option of the AOL. Authors do not indicate how many students participated online, nor how the event was marketed to distance learners.

Authors indicate that satisfaction surveys communicated that campus community members’ needs were met by the library. A survey launch or process is not delineated in the article however.

In a two-part examination of marketing efforts, Pitts, Coleman, and Bonella (2013) and Bonella, Pitts, and Coleman (2017), respectively, describe their work done at Kansas State University (KSU). The earlier article, “Using Distance Patron Data to Improve Library Services and Cross-Campus Collaboration,” describes marketing strategies implemented, while “How Do We Market to Distance Populations, and Does It Work?: Results from a Longitudinal Study and a Survey of the Profession,” (2017) outlines findings from librarians’ assessment of the outreach.

KSU has 24,000 students, with 2,300 students taking classes only through distance education. Surveys were sent to 8,793 individuals in 2011 in order to determine their awareness of library resource and services. This group included all who had taken or taught an online course in the preceding academic year “(5,815 undergraduate students, 2,640 graduate students, 338 teachers)” with disappointing results (Bonella et al., p. 71).

After assessing the results of the 2011 survey, many changes were made at KSU. Reference services made chat reference a higher priority by increasing coverage during service hours, adding a Frequently Asked Questions (FAQ) database and making sure to mark distance learning FAQ with a special tag for easier viewing. Also, a distance learning page was specially created for the Libraries’ website.

Online library instruction was improved by implementing LibGuides as a content delivery platform for online instruction and also as a study guide for students to review the
materials covered on their own time. Also, a “Librarian Role” was created in the Learning Management System (LMS) for assistance in embedding library materials in class sites and also assisting with student questions received on class message boards.

Soon after the survey the library team met with distance education stakeholders on campus to discuss avenues for increased collaboration. Some of the collaborations included revamping the website page for distance learners and also efforts have been made to improve access to digital materials by launching Ex Libris’ Web-scale Discovery with a simple search box on the home page. Additionally, the database list was restructured to the curricular format, more electronic access to special collections was granted and ILL service access was improved.

Subsequent to the implementation of new marketing strategies, the same survey was distributed in 2014. The 4,922 recipients had either taken or taught a course online in the 2014 spring term, “(2,854 undergraduate students, 1,615 graduate students, 433 teachers)” (Bonella et al., p. 72). Though the authors don’t specify, the discipline distribution is presumably similar to the first survey, or has no bearing on the outcome. Likewise, the second survey population is approximately half of the first but this, presumably, has no impact on the findings.

Bonella et al. found substantial increases in awareness of and satisfaction with library services among all online library patrons from 2011 to 2014. Exclusively online undergraduate students reported a 15% increase in familiarity with library resources, a 14% increase in students who say they use the libraries “a lot,” and 19% more online undergraduate students were “very satisfied” with library services and resources (pp. 73-4). Graduate students responding to the survey, enrolled in both online and f2f courses, reported an over 15% increase in satisfaction with library resources; exclusively online grad students.

KSU has taken assessment of marketing to distance education stakeholders very seriously and has future plans for more surveys. A master matrix was created of all the current promotional efforts they have, contacts for those efforts, and a list of the locations and last update for all online university content that mentions library resources. This is to prevent the gradual decline that occurs over time after the initial push of these efforts.

Paul Tremblay and Zhonghong Wang (2008) write about Brooklyn Campus Library of Long Island University’s (LIU) remote graduate campus at Westchester located 35 miles away from main campus. Their article, “We Care - Virtually and in Person: A User-Centered Approach to Assessment, Implementation and Promotion of Library Resources and Services to a Remote Graduate Campus” asks the question of how to most effectively bring library resources, services, and support the curricula to a mixture of remote site users?

A quantitative survey asked population defining questions such as gender, age, degree sought, then more specific questions such as if remote students about library service satisfaction, physical delivery satisfaction, if they had received any formal LIU library instruction, computer competency and others. One question was open ended in which students were asked to give comments on their overall experiences with the Brooklyn Campus Library (BCL) and offer suggestions.
Librarians discovered that although the same online resources were available to both on and off campus students, the discrepancies of the service (interlibrary loan, reference, and library instruction) available to main campus population versus remote students were significant. Literature reviews indicate that many times a digital library is defined by a heavy emphasis on resources and an apparent lack of emphasis on librarians and the service they provide. There is an emphasis on technology and information resources and a very noticeable lack of discussion of the service aspects of the digital library. The search support available to remote services is not utilized and is replaced by the internet, decreasing the users ability to search digital resources properly.

A high percentage of students were not using any library services and were instead doing general searches on internet or using Google Scholar. A high percentage of students were not aware of BCL’s existence, nor its resources and services available to them. This puts them at a disadvantage as all students in various programs such as Psychology, Education, Business and Library Science are required to search, find, and use professional journals whose indices are accessible via online databases such as CSA, ProQuest, and Ebsco databases. The focus of project was to evaluate existing resources, identify unmet needs and implement solutions to help remote users achieve their academic goal, ultimately providing research tools and training to make the library experience relevant to remote users.

Based on survey responses, several ideas were implemented to improve the library experience for remote users. A key issue for remote users was the lag time in receiving physical library resources which was addressed in several ways. Articles began to be delivered via email as scanned attachments or via fax. They also changed physical delivery of books to USPS first class mail, which was more costly but cut delivery time in half. Barcodes used by students to access databases automatically expired each year, causing confusion among students and a great deal of work for librarians. They therefore began to delegate the administrative series to renew barcodes onsite. While databases were always available to off site students, their existence was relatively unknown. Therefore, the off site coordinator began to teach more sessions for individual classes and brought other library staff to orientation days. The librarians changed their training sessions to cover more relevant resources and services such as the use of the library catalog, interlibrary loan services of the BCL, Reference, Chat, and remote database access. Education and Psychology sessions also begin to cover specialized database searches such as ERIC and PsycInfo. Students were also taught how to obtain full text articles from citations, as well as further training in subject and keyword searching.

The library staff at Brooklyn Campus Library of Long Island University shared the following recommendations based on their experiences with survey questions and implementation of suggestions:

- Dedicated library personnel are needed for remote users needed for strong relationships with remote users
- Dedicated web presence on library website needed for remote users
- Library faculty and staff must constantly promote resources and services to remote users
Open communication channels and regular assessment of resources and services is necessary

Library staff should focus on core resources and services which affect remote users.

Conclusion

The purpose of this study was to determine which library marketing efforts were most effective in reaching distance learners in colleges and universities. A systematic literature review was conducted in which 51 books and journals were found in a comprehensive search. Each piece of literature was assessed thoroughly by two or three researchers, all of whom possess an MLIS and work in either an academic library or in the field on online education. The initial impressions of the researcher was one of surprise in that there were very few articles which included research on the phenomena of creating and assessing a library marketing plan geared towards online learners. The vast majority of articles did not include assessment of marketing efforts, but described outreach efforts or the creation and implementation of marketing plans. These citations are all listed in Appendix B with a brief note describing why researchers were unable to use the material. Ultimately, only 11 books and journals contained information directly relevant to the study, which made it difficult to draw any meaningful conclusion. This indicates a large gap in the literature suggesting the need for additional research in the future.

There were a wide variety of library types which were examined: academic libraries at undergraduate and graduate institutions which were private, public and for-profit. Medical and business libraries were also included in the literature review. These libraries varied greatly in size, population served and manner of reaching out to distance learners. It is hard to transfer this information and disseminate it for comparative value. Collaboration across academic libraries is a good idea for research standardization in the future. The researchers found substantial potential for new areas of growth in this field of study.
References


Appendix A

Pepperdine University Libraries' EBSCOHost databases:

- Academic Search Complete
- AHFS Consumer Medication Information
- Alt HealthWatch
- America: History & Life
- American Doctoral Dissertations
- Art Full Text (H.W. Wilson)
- ATLA Religion Database with ATLASerials
- Book Review Digest Plus (H.W. Wilson)
- Business Source Premier
- Communication & Mass Media Complete
- eBook Collection (EBSCOhost)
- EconLit
- Education Full Text (H.W. Wilson)
- ERIC
- European Views of the Americas: 1493 to 1750
- Film & Television Literature Index with Full Text
- Funk & Wagnalls New World Encyclopedia
- GreenFILE
- Health Source - Consumer Edition
- Health Source: Nursing/Academic Edition
- Historical Abstracts
- Library Literature & Information Science Index (H.W. Wilson)
- Library, Information Science & Technology Abstracts
- MAS Ultra - School Edition
- Mental Measurements Yearbook with Tests in Print
- Military & Government Collection
- MLA Directory of Periodicals
- MLA International Bibliography
- Music Index
- New Testament Abstracts
- Newspaper Source
- Old Testament Abstracts
- Philosopher's Index
- Primary Search
- PsycARTICLES
- PsycINFO
Appendix B

References gathered from database search that did not include research on marketing effectiveness.


More a book chapter about different kinds of distance learning librarians and the impact technology has on the job.


More about technology for distance education than library marketing.


Article talks about assessment of the needs of distance faculty, not assessment of marketing.


More about assessment of how librarians and distance instructors can nurture their relationship. There is marketing information, but no assessment of it.


No marketing and distance learning lightly touched on.


How marketing should be included in LIS student classes and how a google LIS students competed in the GOMC (Google online marketing challenge) google competition

*Article is about professional development of distance librarians.*


*Not a marketing assessment.*


*More about student and faculty expectations than marketing or assessment.*


*Book mentions distance learning pages 96-98 in conjunction with electronic reserves, but no assessment of marketing.*

Dermody, M. (2005). We cannot see them, but they are there. *Journal of Library & Information Services in Distance Learning, 2*(1), 41-50. doi:10.1300/J192v02n01_04

*No assessment of marketing; discussion about marketing.*


*Article on poster session on selecting a logo to market distance learning services.*


*It is a book to help library personnel create and develop a marketing plan.*

Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.

Not a marketing assessment.


Not a marketing assessment.


Preliminary set up of a marketing plan, but not a marketing assessment.


Not a distance learner marketing assessment. Librarians meet patrons f2f.


Not a marketing assessment.


Not a marketing assessment.


Not a marketing assessment.

**Not a marketing assessment.**


**Not a marketing assessment.**


**Guide for librarians working with distance learners. Does not include assessment.**


**Does not have marketing assessment.**


**Literature review of research evaluating the services.**


**Article talks about setting up an online tutorial in blackboard.**


**Survey of academic librarians regarding specific tools regarding marketing.**

No assessment in this article.


More a how-to than assessing student/faculty interest in the library being on social media and how effective posts are in reaching distance learners.


Article pertaining to customer service best practices from the business world.


No assessment of efforts.


No assessment in this article.


Rationale for the importance of marketing and the value of academic libraries in distance education and branding.
Abstract

The Standards for Distance Learning Library Services, created by the Association of College and Research Libraries, asks the distance learning librarian to be an advocate for an institutional culture of support for distance learners. The Standards make it clear that the distance learning librarian must initiate and participate in institution-wide projects. However, both individuals and the organizations in which they serve struggle with change, and such resistance to change is a major barrier to creating a supportive institutional culture and convincing colleagues to participate in collaborative projects. Librarians using the Standards to guide their work must understand how to strategically manage resistance to change. This article will discuss how one online learning librarian used leadership and project management practices to address resistance to change in the library organization and across the college. It gives practical recommendations for leadership and project management skills that will help distance learning librarians and others working to enact the Standards at their academic institutions.

Introduction

In summer 2016, the Association of College and Research Libraries (ACRL) released a revised Standards for Distance Learning Library Services. Among the Standards’ guidelines was a list of management functions to be undertaken by the distance learning librarian. These included “endeavoring to establish an institutional culture of support for distance learners” (Association of College and Research Libraries, 2016). Green (2015) notes, however, that “people, planning, program, policy, and budget issues” are barriers to implementing the technology and infrastructure needed for distance learning at higher education institutions. Furthermore, it is a major change for higher education institutions to transition from traditional, face-to-face learning into an environment where both distance and face-to-face learning co-exist, and sometimes compete. Change is difficult for organizations, and it takes work to overcome resistance to change (Kotter, 1999). Distance librarians must understand the challenges inherent in organizational change and address the associated difficulties in order to advocate for distance learning support in their libraries and across their institutions. How can a distance learning
librarian apply leadership and project management practices to address resistance to change in order to support an institutional culture of support for distance learners?

In summer 2016, the Online and Hybrid Learning Librarian (OHLL), the designated distance learning librarian at Drake Memorial Library at The College at Brockport, State University of New York, created a personal plan to use leadership and project management skills to overcome barriers related to resistance to change, and encourage the growth of a culture that supported distance learning at her library and college.

This paper begins with a review of relevant literature, setting the background for a case study. A discussion of leadership and project management skills for distance learning librarians describes the ways librarians can apply specific skills to strategically manage resistance to change. A case study details one distance librarian’s application of such skills to her work, and reports on early results. Finally, implications for distance librarians are explored, including the ideas of the librarian as facilitator, and participatory librarianship.

**Literature Review**

This review of literature provides context for how a librarian can apply leadership and project management skills to support a culture of distance learning. First, a discussion of distance learning’s implications for academic libraries and academic institutions provides background on the situation in which the distance librarian operates. Next, a review of relevant literature on characteristics of resistance to organizational change highlights issues important for librarians who want to be involved in change efforts. Finally, an overview of library literature’s emphasis on the importance of leadership points to how leadership skills overlap with project management skills, and sets the stage for the case study.

**Distance Learning, Libraries, and Change**

Change is central to the work of a distance librarian. Distance learning, including online and blended, or hybrid, learning, is transforming academic institutions that were conceived to deliver face-to-face learning opportunities. Librarians tasked with supporting their online, hybrid, and distance learning communities observe this change at the institutions in which they work. The growth of distance learning represents a change—for systems, values, and the very culture of an academic institution (Burich, 2004). Of course, change is not unique to distance librarianship. The development of technology has been spurring library change for decades, and library organizations have struggled to adapt (Bell & Shank, 2004; Youngman, 1999). The Standards for Distance Learning Library Services (Association of College and Research Libraries, 2016) acknowledged the need to address change, and directed libraries to respond to ongoing organizational change as new types of distance learning evolve. Radical change has become a fundamental aspect of librarianship. New Media Consortium’s (2017) *Horizon Report: 2017 Library Edition* identified embracing radical change as a significant challenge preventing academic libraries from adopting technology, and urged library leaders to take action. It suggested libraries use Kotter’s (1999) change management principles to take actions including “communicating urgency, developing a shared vision, [and] obtaining stakeholder buy-in,” among others (p. 34). Understanding how change affects organizations and people could be considered essential librarian knowledge.
There is a large body of research and writing on organizational resistance to change, including many books written on this subject alone (Dello Buono & Fasenfest, 2010; Harvard Business School Press, 2005; Harvey & Broyles, 2010; Palmer, 2004). There are many reasons individuals resist change. Kotter (1999) described some common reasons. When people are focused on themselves instead of looking out for the interests of the organization, or when the change is a violent break from their understanding of how they fit into the organization, they may resist. He posits that people may misunderstand change, or may believe that the change is not leading the organization down the right path. He suggests some individuals may resist when they believe the cost to themselves and the organization will outweigh the benefit. Finally, some people just feel uncomfortable with change, even when they realize that a change is good for both the organization and for them. Understanding these human reactions can help distance librarians recognize their own resistance to change, and can help them spot others’ resistance.

Bareil (2013), Hughes (2015), and others have challenged Kotter’s description of those who resist change. Bareil suggested that Kotter-inspired ideas about resistance to change position the resisters as fighting the change for the purpose of rejecting it whole-cloth. She points to a more modern view of change recipients as sense-makers who are ambivalent, and seek to understand the change through dialogue. Resistant or not, Bareil discusses how change recipients can position themselves as active participants in the change, and frame their resistance as feedback and a resource for those pushing for the change—they can enter into a dialogue about the change. Kotter (1999) seems to agree on the idea of participation as a way to overcome resistance to change. His recommendations for how leaders deal with resistance include taking a participatory approach to designing and implementing projects, and providing support to those affected by the change. Distance librarians can take a participatory approach by seeking and supporting such dialogue and offering feedback to those who are implementing change efforts related to online or other types of distance learning, including provosts, deans, and IT professionals.

**Change and Relationships**

Kanter, Stein, and Jick (1992) described three distinct roles involved in the process of change: change strategists, change implementers, and change recipients. Change strategists focus on how the organization is connected to the environment in which it operates, and change implementers are project managers who execute the nitty gritty efforts related to the change. Change recipients “bring their own interests, goals, and group memberships to the change table,” and sometimes resist change (p. 17).

Distance librarians are likely to be change recipients. First, they are affected by distance learning-related changes to the institution’s systems, services, and culture. Second, they have limited opportunities to influence the ways in which they are affected by the change. They do not decide whether or how distance learning is rolled out on their campuses. As such, they can experience change resistance themselves, feeling personally resistant to change. Librarians can use this position to affect the culture of support for distance learning. They can empower other change recipients by modeling adaptation and aligning with other change recipients, such as faculty, administrators, and students. They can draw on their understanding of resistance to
change to empathize and facilitate sense-making dialogue between fellow change recipients and the change strategists and change implementers.

Relationships are important for distance librarians who want to empower fellow change recipients, so they must build leadership skills that allow them to connect with community members. Burich (2004) and Boatright (2015) suggest the librarian should create a purpose and a vision, and identify key stakeholders at the institution before cultivating relationships with groups and people. Kotter (1999) described a leader as employing a vision while actively growing relationships with others in order to develop the networks that allow for change to be implemented. Considering who delivers services and who cares about these services can help the leader identify key stakeholders and navigate the “complex web of aligned relationships” (p. 6). A distance librarian’s list of potential key stakeholders in distance learning includes various groups across the academic institution, including IT, faculty instructors, instructional designers, and administrators (Burich, 2004).

**Leadership Skills for Librarians**

Leadership skills are considered important for librarians. The Institute of Museum and Library Services (2017) includes leadership in its list of “21st Century Skills” for librarians and museum professionals. The American Library Association (ALA) (2009) includes Transformational Leadership, characterized by leaders working together with their supporters to achieve shared goals, in its list of core competencies for librarianship. (Hicks & Given, 2013). However, a 2016 needs assessment for management education and training in the librarian profession—a review of online course descriptions for almost all of the ALA-accredited graduate programs in library and information science in the United States—indicates a leadership skills crisis: though leadership skills have become significantly more important for information professionals, there is a dearth of formal, required management and leadership education and training (Singh & Vorbach, 2017). Whether or not distance librarians receive formal leadership training as part of their librarianship degrees, they need to pursue leadership development on the job. Modern leadership theory stresses the importance of the situations in which leaders act and their interpersonal relationships (Müller & Turner, 2010), so training is important, as it is clear that leaders are not born, but must develop their leadership capabilities and work to understand their organizational environment. Since librarians who are not in a position of authority can be leaders (Boatright, 2015), distance librarians need to be sensitive to the need for leadership in their libraries and on their campuses, and consider how they can step up to lead.

But if distance librarians must develop their leadership skills, with which skills should they begin? Creating and using a vision, building relationship based on mutual respect, and actively seeking open and direct communication are three skills featured in library leadership literature, as well as project management literature. As a set, they complement each other, and could be a good starting point.

Ammons-Stephens, Cole, Jenkins-Gibbs, Riehle, and Weare (2009) and Boatright (2015) described the ability to create a vision as an essential aspect of leadership development. Librarians who create a vision for their work can draw inspiration from it, and use it make decisions in a deliberate way. Boatright (2015) suggested librarians create a personal value
statement incorporating their library’s mission, syncing their personal values with their professional work. Armed with a value statement, librarians can create a summary of purpose and vision, and use it to communicate their value to others in the library organization, and across campus. This idea is not new, of course; librarians have always used the philosophical tenets of librarianship to drive their work. The point here is librarians can create their personal vision and then deliberately and overtly refer to it as a guide when things get difficult, such as in times of great organizational and societal change. Others have proposed similar actions, such as Bell and Shank (2004), who called on librarians to re-envision their learning and teaching roles in order to adapt to changes in academia, and Lankes (2011), who proposed a mission statement for librarians: “to improve society by facilitating knowledge creation in their communities” (p. 13). Matarazzo and Pearlstein (2016) also consider the ability to create a vision as an essential skill for leaders, while Horine (2013) and Milosevic and Martinelli (2016) discuss its importance for project managers, as well.

Project management is commonly mentioned in the library leadership literature as a vital area of knowledge, and one that positions the librarian as a member of a collaborative team (Boatright, 2015; Jange, 2012; Library Leadership & Management Association, 2017; Matarazzo & Pearlstein, 2016; Online Computer Library Center, Inc., 2014; Stewart, 2017). The ability to manage projects was highlighted in the American Library Association (2009) and Institute of Museum and Library Services (2017) publications. In 2015 the Online Computer Library Center (OCLC) and the Institute of Museum & Library Services jointly published the Competency Index for the Library Field, listing leadership and project management as two competencies essential for library management, noting that non-managers can be leaders by applying “solid project management skills” (p. 11). Discussions of project management competencies highlight the importance of leadership as critical to project success (Geoghegan & Luewicz, 2008; Müller & Turner, 2010).

Project management (PM) “is the application of knowledge, skills, tools, and techniques” to a “temporary endeavor undertaken to create a unique product, service or result” (Project Management Institute, 2017). PM is considered best practice for librarians today, and librarians use PM approaches, skills, and tools in various ways. Some find success in applying formal PM, while many more use ad hoc PM methods successfully, such as project planning and establishing communication plans (Howath, 2012).

Drilling down into discussions skills for leaders and project managers, there is a great deal of overlap. Relationship building, the creation of a vision, and communication skills are common to both sets. The ACRL Standards (2016) specifically refer to project management and the importance of creating goal-based projects. A project manager who has embraced a leadership role is able to improve project performance by leading, even when they lack “documented, formal authority,” a situation familiar to many librarians, by creating relationships with teams that span the organization (Anantatmula, 2010, p. 14). Aronson, Shenhar, and Patanakul (2013) point out the importance of a clearly articulated project management vision. Milosovec and Martinelli (2016), and Horine (2013) listed communication skills as essential project management functions, and the American Library Association (2009), Ammons-Stephens et al. (2009), Düren (2013), and Institute of Museum and Library Services (2017), and
the Library Leadership & Management Association (2017) cite communication skills as elemental to leadership.

Which communication skills would allow distance librarians to initiate and engage in discussions about change, and advocate for participatory change efforts? Direct, two-way, mutually respectful communication and the ability to create a vision in order to share it with others are two skills that may be critical. Ammons-Stephens et al. (2009) proposed that librarians should be able to be active listeners who refrain from being judgemental while being able to provide constructive feedback. Lankes (2008) argued that librarians have an ethical obligation to facilitate conversation between their community stakeholders and the library organization, and pointed to 'participatory librarianship' as a way to allow others to create knowledge. LLAMA (2017) describes communication as the ability to interact with stakeholders “clearly and efficiently and using active listening for consistent, mutual understanding” and includes team building in its list of 14 competencies, and describes strong communication skills and the ability to rally a group around a vision as necessary abilities (p.1-2).

Implementation

In the summer of 2016, after the revised ACRL Standards were released, the OHLL created a personal mission statement for her job, and then wrote a plan for how she would contribute to establishing a college-wide culture supportive of distance learning. Soon after, her plan would need to be completely changed. This case study describes how, in facing the barriers of institutional change and personal limitations, she developed a plan for applying specific leadership and project management skills to her work.

Distance Learning Librarianship at The College at Brockport

The College at Brockport, a public university, is a member of the State University of New York, and is located in western New York state. Total enrollment in the 2016–17 year was approximately 7,100 undergraduates and about 1,100 graduate students. Distance learners at Brockport are mostly students enrolled in asynchronous online courses, with a very small number of distance students enrolled in online courses that involve a synchronous, regularly scheduled meeting in an online classroom environment. Many students in online courses live on campus, and the number of true distance students is a small fraction of total online students, though the number of distance students has grown rapidly in recent years. During the 2012–13 academic year there were no completely online degree programs and 154 sections of online courses were taught as part of face-to-face programs. By the summer of the 2016–17, there were 15 completely online degree and certificate programs, instructors had taught 278 online sections that year, and at least a hundred more online sections were slated for the upcoming fall term. Drake Memorial Library created a new position, the Online and Hybrid Learning Librarian (OHLL), a non-supervisory, tenure-track faculty librarian position, and hired a librarian to support distance learning library services as part of the integrated public services team in October, 2015. This was the OHLL’s first professional position in an academic library.

Creating a Mission Statement
In summer 2016, several months after she began working at the College, the OHLL read the revised ACRL Standards, and began a plan for how to use them as a guide for her work. Writing a professional mission statement, creating short-term project goals for building support for distance learning, and identifying leadership skills to develop were her first steps.

The OHLL wrote a personal mission statement for her role, which aligned her personal values with the library’s mission, vision, and values. This visioning action was a continuation of her professional growth process. Before deciding to apply to library schools several years prior, the OHLL had written a personal statement to guide her career: “I want to be part of a collegial community that values intellectualism, working to improve people’s lives—and not sit at a desk all day.” The OHLL reflected on this, along with the mission statement of Drake Memorial Library (2017)—“empower our intellectual community to excel in the discovery and creation of knowledge, art, and scholarship.” She also considered Lankes’s mission statement for librarians, which had informed her work since 2011. Since the role of OHLL was a new one at Brockport, and because she was new member of the College community, she wanted to explain her role and purpose. She wrote an OHLL mission statement she could speak out loud and type into email messages: “My mission as the Online and Hybrid Learning Librarian is to empower Brockport’s online and hybrid learning community members by helping them create knowledge. I am not the librarian who supports online and hybrid learners, I’m just one of many Brockport librarians who does this.” The OHLL began looking for opportunities to speak this mission statement aloud in meetings with teaching faculty and administrators. Opportunities included: face-to-face one-shot information literacy instruction sessions where she spoke this aloud to students and their instructors; new faculty orientation; anytime she introduced herself at professional development events, such as those held at the Center for Excellence in Learning and Teaching; introducing herself to administrators; and attending any meetings at which teaching faculty were present.

Creating her mission statement and writing reflectively in a private journal about her professional work helped the OHLL come up with ideas for how to center her work around the Standards’ requirement to create a culture of support for online and hybrid learning at the College and within the library organization. The OHLL created a list of shorter-term measurable goals, based on the Standards, and began designing plans for achieving those goals. Examples of these short-term goals include: create a plan for ongoing evaluation in order to understand the needs of online and hybrid instructors, conduct a needs assessment of online and hybrid teaching faculty, and create a plan to market library services to instructors of online and hybrid courses.

As she took the first steps in implementing her plans to reach her short-term goals, and as she came to better understand the library operations and current campus and library cultures for supporting distance education, she realized goal setting and project plans were not enough. Over the course of the next year, she identified four leadership activities essential to meeting her short-term measurable goals. These activities were: explicitly align all work to the library’s vision, develop relationships with key stakeholder groups, and communicate in a direct way. In developing these leadership abilities, she hoped to improve her chances of meeting her short-term goals, despite organizational challenges in the library and the ongoing technological change inherent in distance education. Developing an OHLL mission statement was a good first step in casting vision, but she knew that was just a start. In order to enact her mission and truly empower
Brockport’s online and hybrid learning community members by helping them create knowledge, she would need to develop and strengthen relationships with strategic campus partners.

Identifying Important Relationships

When she began her job in October 2015, the OHLL identified potential allies with whom to partner. She had studied the College to understand what groups and individuals were involved in the support of distance students, and had identified a list of important potential collaborators. The list was long, and included faculty, students, departmental administrators such as deans and faculty chairs, the College’s Center for Excellence in Learning & Teaching, library personnel, the Information Technology help desk, IT’s Academic Systems team responsible for administering and supporting users of the learning management system, and high-level administrators, including the library director and the Chief Information Officer. It also included a group that met monthly, which called itself the Hybrid-Online Support Team, and which was convened by the administrator who oversaw the logistics of scheduling online and hybrid courses at the College. The Hybrid-Online Support Team included teaching faculty, IT staff, and the OHLL, and functioned as a discussion group and idea exchange.

While she knew she would need to continue participating in ad hoc meetings and groups across campus, she chose to narrow her efforts to focus on developing a relationship with a few groups. Choosing the groups was easy. She was already a member of two, and by focusing her leadership activity efforts on her work in those groups, she would be able to participate more fully in them. She hoped this would lead to a better understanding of the current culture of support for distance students, and help her start to affect it. The groups were the IT Academic Systems team and the Hybrid-Online Support Team.

Leadership as Embedded Librarian with the Academic Systems Team

In the fall of 2016, the OHLL was impacted by organizational change, when she was temporarily reassigned because of sudden personnel shifts in the library and IT organizations. During the 2016–17 academic year, she spent 50% of her time working with IT’s Academic Systems team. This team, which was responsible for the administration of the learning management system and learning technology user support and training, was overtaxed. One team member was preparing to take a maternity leave, and the manager was made interim Chief Information Officer. The OHLL was asked to pitch in to help the team provide faculty support related to online teaching.

For the OHLL, leaving behind 50% of her library duties to do this meant facing uncertainty. Practicing her leadership and project management actions helped her to cope with being a change recipient and the resulting uncertainty. In keeping with her professional mission to empower the online and hybrid learning communities to build knowledge, she conceived of her temporary role with the Academic Systems team as that of an embedded librarian. Keeping in mind the library’s mission, she drafted a proposal for her work with these IT colleagues, which she was able to use as a communication touchstone with the team’s manager, referring to it in order to discuss her progress and ask for guidance throughout the year. Direct communication with the Academic Systems’ manager was critical to understanding whether her role was satisfying the team’s needs. The OHLL’s choice to understand her work with this team
as that of an embedded librarian is an example of how she integrated the change into her conceptualization of where she fit within the organization. Though it meant extra work to fit into a new team and envision a new job while still keeping up on library-centric duties, framing it as librarianship allowed her to envision how her work was what was best for the College.

Through her work with the Academic Systems team, the OHLL strengthened her relationship with a group that provides crucial support for distance learning at the College. She dedicated most of her time with this team to maximizing the work of the team’s Instructional Technologist. The OHLL’s partnership with the Instructional Technologist, a fellow change recipient who had just been asked by administrators to design training for online instructors for the first time, led to the creation of a new mini-course for instructors interested in teaching online at her institution. Instructors who are introduced to fundamental online teaching concepts and training are better at online teaching, so supporting the establishment of this training helped grow support for distance learning at the College.

As an embedded librarian, the OHLL modeled adapting to change and acted as a partner for the Instructional Technologist, facilitating her knowledge creation. Being directed to create a new training service quickly was a challenge, and meant a fundamental change to the Instructional Technologist’s job. The OHLL facilitated conversations between the Instructional Technologist and the administrators who were pushing for this change. She also provided more traditional librarian services, connecting the instructional technologist to information about course creation by providing online resources, and by facilitating a meeting with a technologist at another institution who had created a similar course. Embodying participatory librarianship, the OHLL collaboratively brainstormed ideas and acted as a sounding board and alpha tester. The OHLL facilitated participatory change efforts by initiating and encouraging conversations between the administrators mandating the training and the Instructional Technologist who was designing it. Direct and mutually respectful communication was essential to this part of her work. She kept the team’s manager apprised of her work through email, regular written reports, and in-person check-ins. She initiated conversation between the team’s manager and the Instructional Technologist at critical project points.

The OHLL’s temporary assignment ended in summer 2017, and she returned full-time to library-centric duties. The time she spent embedded in the Academic Systems team allowed her to better understand the nature of support for distance learning instructors, and the needs and challenges in that area. This information and relationship allowed her to take on a subsequent leadership role by chairing a search committee for a new addition to the Academic Systems team, further strengthening the relationship between the library and IT.

**Applying Skills as Liaison to Hybrid-Online Support Team**

After beginning her job at the College, the OHLL was invited to attend monthly meetings of the Hybrid-Online Support Team (HOST) by the administrator convening them. She envisioned herself as a liaison representing librarian interests, and her attendance gave the OHLL, and thus the library, vital information about the state of distance learning and associated support at the College. In these meetings, discussions between IT staff, administrators, and faculty who were teaching online and hybrid courses ranged from teaching faculty expressing
concern about the challenges their students faced in using technology to the Academic Systems 
team members’ ideas for training faculty in online teaching.

Initially, the OHLL attended these meetings passively. Reflecting on how to apply her 
leadership skills to improve key stakeholder relationships, the OHLL set out to establish better 
communication between the HOST and the library faculty. She created two formal 
communication channels. First, because minutes from the HOST meetings were not disseminated 
beyond the group’s membership, she began taking notes and personally emailing them to the 
librarian listserv. Second, she initiated a monthly report of relevant library activities to the HOST 
meeting. One to two pages of brief stories from the librarians about recent library support for the 
College’s online and hybrid learning communities, The “Drake Memorial Library Report: 
Empowering Online & Hybrid Learning Communities” was distributed to the HOST members 
and presented at HOST meetings. The OHLL also shared each final report with the librarians. 
The report followed the same format each month, and its header took language from both the 
Standards and Drake Memorial Library’s mission (2017): “This report tells just a handful of 
stories about how Drake Memorial Library has recently supported the online and hybrid learning 
communities at the College at Brockport. These stories highlight how the library meets a range 
of informational, instructional, and community needs, and provides direct access to library 
personnel.”

The results of the two new channels of communication have not been quantified. 
However, anecdotal evidence suggests improved information sharing between the members of 
HOST and the library. Each HOST monthly meeting now features a substantive discussion of 
library services spurred by discussion of the report, and each month, librarians get news about 
campus-wide support for online and hybrid learning, and they have the opportunity to reflect on 
their online and hybrid support work in order to contribute to the report. In the future, these 
reports will serve as a record of the changes in services for online and hybrid learning at the 
College. By aligning her communication efforts with the library’s mission, she made her time 
with this group more valuable and effective.

Discussion

Drake Memorial Library had hired the OHLL to help ensure excellent online and hybrid 
learning at Brockport, and the expectation was for her, as a tenure-track faculty librarian, to 
define her role and communicate it to her colleagues, including her supervisor, the director of 
integrated public services. Library operations and service structures made it a challenge to define 
her role and communicate her concept of it. The other public services faculty librarians were 
assigned liaison areas to departments, and they were exclusive owners of service delivery to 
departments that had online and hybrid learning programs. The librarian liaisons to departments 
with online programs had established valuable relationships with program teaching faculty, and 
the library had positioned these librarians as owners of services for those departments. The 
OHLL was not a liaison to any departments with online or hybrid learning programs. In addition, 
communication challenges abounded. Liaison librarians were overloaded with liaison duties as 
well as other responsibilities related to tenured librarianship, such as scholarship and service, not 
to mention duties related to other library services. Convening meetings to discuss envisioning a 
new approach to delivering online services was a challenge in this environment.
By actively engaging with other stakeholder groups outside the library, the OHLL was able to create a role as liaison between these groups and the liaison librarians. Facilitating information exchange between the library and these groups is an essential step in building a relationship. The OHLL intends to continue cultivating these relationships, and to use her experiences with these groups as a model to establish relationships with other groups of key stakeholders. Future efforts could include partnering with change recipients to create new participatory groups, such as an online student advisory board for the library and discussion groups for faculty who teach online, hosted by the library.

**Conclusion**

This case study describes work in progress. It’s not clear if the culture of support for distance learning at the College has improved. The OHLL plans to continue reflecting on her professional mission to find ways of integrating leadership/project management actions in her work. In the future, the OHLL could attempt to measure attitudes and infrastructure related to distance learning. A formal assessment plan for online and hybrid faculty’s library-related needs, a project currently in process, is one way she plans to do this.

Though this librarian’s specific circumstances were unique, elements of her situation should be familiar to other distance learning librarians. Adapting to a changing job description, paying attention to relationships with distance learning stakeholders, and the need for changes to library operations and improved relationships with library colleagues are 21st-century-librarianship realities.

Further examination about the relationship between change and vision may be useful for distance librarians who are seeking ways to create a culture of distance learning support. There is a body of literature that focuses on the power of vision as a key element of leadership. Exploration of the intersection of change and communication, and change and participatory engagement of stakeholders, may prove valuable for distance librarians. Librarians who deliberately apply leadership skills to their work may find it useful to research participatory librarianship, and the failure of leadership efforts.

LLAMA (2017) suggested that case studies about foundational leadership competencies applied in libraries would illuminate their value to librarians. This case study contributes to the scholarly conversation about distance librarianship leadership, and would be complemented by additional case studies about applying the same leadership competencies to distance librarianship at other institutions.

Distance librarians can build their own professional missions or value statements. Then, reflecting on their own leadership competency, develop a plan to improve their leadership by aligning their work to the missions of their institutions, investing in relationships with key stakeholders in distance learning, and focusing on communication. This will enable them to address the effect of distance learning change, helping others cope, and modeling adaptation, which may ultimately improve support for distance learning at their institutions.

Alternatively, distance librarians interested in applying other leadership actions in an effort to encourage a culture of distance learning support can find inspiration in Kotter’s (1999)
recommendations for how leaders deal with resistance through education and support. Actions could include:

- modeling an inclusive approach to their own change projects, soliciting and including stakeholder input throughout;

- putting pressure on key collaborators to include others in the design and implementation of change projects;

- connecting with change leaders on campus to find out what support the institution can provide to those who will be affected by the change; and

- offering to provide technology or information literacy-related training for change recipients affected by the growth of distance learning, such as IT personnel, students, and teaching faculty.

A distance librarian must recognize when their key collaborators are resisting distance learning-related change, so they can participate in the change process. This sort of participatory work is essential to librarianship, and positions the librarian as a facilitator and mediator.

Change is a complicated problem, and there are no easy solutions for overcoming change resistance. Leadership and project management skills can provide tools to attack the problem in an organized way. They are not silver bullets, but they can be framework for addressing the challenges associated with change in a positive, proactive way.

As Kotter (1999) points out, change requires the creation of a new system, and such an activity always demands leadership. Being a librarian leader today means embracing the responsibility of helping the library organization weather constant change (Matarazzo & Pearlstein, 2017), and taking on the roles of change agent and technological innovator (Bell & Shank, 2004). A distance librarian enacting the Standards should expect to lead, and should invest time and effort in seeking leadership development.
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It's a Win-Win-Win: Using Human Peer to Peer Networks to Reach Learners Where They Are

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Abstract

In the Spring 2017 semester, an instructional designer, a writing center coordinator, and a director of distance library services initiated a pilot project for a seven-campus, eight-satellite center, public university system to cross-train virtual writing tutors in baseline research skills. This case study describes the collaborative pilot program’s progress, challenges, lessons learned and grounds the process in peer learning theory, exploring its growing acceptance in academic libraries.

Introduction

Distance learners deserve equitable support services and desire high touch engagement. Academic libraries have for decades worked to improve and provide robust library services to students online, overseas, at satellite centers and campuses, as well as those connecting via various synchronous technologies such as interactive television, video conference, and video call. Some common methods employed by academic libraries to connect with distance learners include live chat, embedding themselves and/or learning objects in their institution’s learning management system (LMS) and appointing specific staff to serve as liaisons to distance or online learning units. While the success of these efforts varies widely based on institution, faculty relationships, funding, and numerous other factors, scale is frequently cited as a primary challenge. How can you reach large numbers of geographically dispersed students within the limits of staff capability? Another common challenge facing all academic librarians, regardless of service population, is the barrier of library anxiety. This phenomenon, when paired with an increased distance between the student and their physical campus library, presents several layers of challenge that may be partially addressed by cross-departmental collaborations and the intentional application of peer learning theory to the distance library services toolbox.

Background

In the summer of 2016, the author was entering her second year in Off-Campus Library Services (OCLS). OCLS is a Department of University College (UC). UC is an administrative unit of the University of Maine at Augusta, the third largest in the University of Maine System and an institution dedicated to providing access to high quality distance education in the state of Maine and beyond. UC’s primary focus is supporting distance learners and the faculty who instruct them, providing instructional design, technology, media, proctoring and many other wraparound services to the public universities in Maine.
In mid-summer, the author’s in-progress research on peer learning in the academic library environment converged with an invitation from a colleague, one of University College’s Senior Instructional Designers, to pilot incorporating baseline research skills into the existing training for UC’s virtual peer writing tutoring service. The pilot would be a potential first step in moving the virtual writing tutoring lab toward offering multidisciplinary tutoring services and could potentially signal a return of integrating students into academic library services in the public universities of Maine, as had been done at the University of Maine at Farmington in the past (Furlong & Crawford, 1999). In addition, the added skills that tutors stood to gain were desirable to the virtual writing lab coordinator, due to her emphasis on tutor professional development and offering resume-building experiences. This pleasant convergence of benefit to students, professionals, and peer tutors represents well the triple win that the application of peer learning theory in higher education has the potential to produce.

**Literature Review**

The literature published in information and library sciences publications and/or written by librarians on peer learning theory has steadily grown during the two years that the author has been following the topic. Writing Center literature, however, still has a considerable head start in the study and theory of participatory learning. It is encouraging to see the increased interest on the part of academic librarians in particular, though this is tempered to a degree by the motivation of some to use it solely to help solve staffing shortages. The following review is chunked into two segments based on discipline and the segment focusing on library literature is divided into four subcategories.

**Literature from the Field of Writing and Writing Centers**

Muriel Harris’ (1995) “Talking in the Middle: Why Writers Need Writing Tutors” is a frequently cited article and foundational in its argument for writing tutors specifically and its explanation of the benefits of peer learning theory more generally. Harris emphasizes the value of introducing a “middle person” (p. 27) into a student’s learning process and establishes four primary roles of this intermediary: “encouraging independence in collaborative talk,” “assisting with acquisition of strategic knowledge,” assisting with affective concerns,” and “interpreting the meaning of academic languages” (pp. 30-36). Harris’ work draws heavily from Kenneth Bruffee, and his seminal article, “Peer Tutoring and the ‘Conversation of Mankind’” (1984). Bruffee, a pioneer in developing the theory and conceptual framework for collaborative learning, discusses the social context of learning and the importance of providing opportunities for students to form and participate in peer groups as a model learning community. Francesca Gentile, in a more recent work, draws on these principles of collaborative learning to recommend ways to integrate the concept from the beginning in first year English courses and to “emphasize what writers learn from meeting and talking with other writers” (2014, p. 37) Hughes, Gillespie, and Kail (2010), present findings from an extensive study - the Peer Writing Tutor Alumni Research Project - examining the experience gained by former peer tutors and how that addition to their liberal arts education affected them after leaving the institution. The authors describe numerous professional development gains acquired by former peer tutors, including strengthened listening
and analytical skills and improved capabilities in both workplace and domestic environments. The literature in the writing disciplines on peer learning and peer tutors is robust; what is included above is a selection of works that most influenced the author’s thinking during the pilot phase.

**Literature from the Field of Academic Librarianship**

Academic librarians who have published on this topic tend to approach it more practically and the research tends to fall in four broad categories. A large number of articles and book chapters focus on students who are trained to help other students with research (as in the case of the author’s goal). A smaller number focus on students assisting with or providing library-related instruction. A third group concentrate on the professional development benefits of library peer leadership and tutoring opportunities. Finally, outreach and marketing are the focus of several pieces on peer learning in the academic library environment.

**Peer research programs.** In their book chapter, Kristin Meyer and Jennifer Torreano (2017) provide an excellent overview of their conversion of the Mary Idema Pew Library from a traditional academic library space with traditional professional staff and faculty librarians providing front line service to a student-centered facility complete with a “Knowledge Market” and student research consultants and user experience student assistants providing all front of the house staffing. Meyer and Torreano discovered that “the number of librarian consultations has gone up since the research consultant program began” (p. 43) and demonstrate that there should be no concern of student research assistants competing against or replacing librarians. The successful efforts of Grand Valley State’s peer research consultant program is also described by O’Kelly, Garrison, Merry, and Torreano (2015). In this earlier publication, the authors give an excellent history of prior peer learning efforts in academic libraries and provide data on their own program’s progress and goals. Seven librarians from Coastal Carolina University present an earlier case study of the peer reference model implemented at their Kimbel Library (Faix et al., 2009). Despite being motivated by funding and staffing shortages, the authors note the many benefits to students achieved through the program, including students increased “pride in work” and their evolution into “library ambassadors.” (pp. 100-101). The authors also report increased morale among the professional staff. A recent title, *Peer-Assisted Learning in Academic Libraries* (Rinto, Watts & Mitola, 2017), includes five chapters dedicated to peer research and reference programs. Representative institutions are Gettysburg College, Indiana University, Michigan State University, Southern Illinois University and Hope College (p. vii). Each chapter includes institutional context; descriptions of program details such as recruiting, supervising, and training methods and materials; and program assessment, outcomes, benefits and lessons learned.

**Peer instruction efforts.** Moving now to the second category of literature, the author points first to Brett Bodemer (2014) and his publications as instrumental in approaching the perhaps even more significant leap to entrust students with instruction roles. Bodemer has applied peer learning dynamics to both reference and instruction contexts in his work at the Robert E. Kennedy Library at California Polytechnic State University. Regarding instruction, Bodemer notes that “expert librarians are prone to over complicating basic instruction, when the real trick is to turn absolute essentials into terms and processes that students understand” (p. 164). His LibRAT (Library Research Assistance Technician) program is also described in the
earlier article “They Not Only CAN But They SHOULD: Why Undergraduates Should Provide Basic IL Instruction” (Bodemer, 2013), where Bodemer builds a solid argument for the pedagogical soundness of using students for basic instruction and demonstrates both the reasons why this is a positive idea and the capability of students to perform the tasks required. Bodemer’s program as well as four others are included in the Peer-Assisted Learning in Academic Libraries book referenced above. In the chapter dedicated to Utah State University’s Library Peer Mentor Program, the authors share several valuable lessons learned, one of which is the simple power of listening to students. Another lesson, repeated in almost every article on the topic, is that leading peer learning programs take time and requires dedicated staff, both in the sense of character and formal title or responsibility (Martin, 2017, pp. 55-61). In the chapter describing University of Nevada, Las Vegas (UNLV) Libraries’ Mason Undergraduate Peer Research Coach Program, the authors note that “one major implication… is the impact it has had on student learning…. Student are experiencing more individual attention and have more opportunities to ask questions and receive feedback” (Rinto, Watts, & Mitola, 2017, p. 73). Including students in instruction may seem risky, but there is literature and data to support applying to participatory learning techniques and theory to the classroom in addition to a one to one tutoring setting or a service desk.

Professional development benefits. Many of the articles already referenced include sections articulating the varied benefits realized by student participants in academic library peer learning programs. Melilli, Mitola, and Hunsaker (2016), in “Contributing to the Library Student Employee Experience: Perceptions of a Student Development Program” describe their research on perceived benefits of a UNLV libraries co-curricular workshop series for student employees. Research outcomes included the finding that “regardless of the category of the workshop, students found the workshops to be valuable to more than one area of their life,” (p. 435) illustrating the multifaceted effect peer learning programs can have on student skill development.

Peer outreach programs. The last major category of academic library literature addressing participatory student learning initiatives are those that highlight the inherent marketing benefits of increasing student agency and engagement in the library realm. In “Libraries Across the Sea: Using a Virtual Presence and Skilled Student Assistants to Serve Students Abroad,” Chan et al. (2015) detail their successful initiative to create a virtual presence along with a personalized, warm touch service experience for their students studying abroad. The responsibility of staffing an international satellite library location is large for a student worker, but the authors achieved success by carefully structuring the interview process, the training and the ongoing supervision of their student employees. These students literally were the only face of the library for the study abroad students other than the supplementary digital resources created by the librarians. In the only historic or present example of peer learning in academic library that the author found within her own public university system, Katherine Furlong and Andrew Crawford (1999) relate the conundrum of finding themselves with a newly renovated library building and the latest technology, but with very few students interested in using their services. Furlong and Crawford’s solution ended up being a partnership with the University of Maine at Farmington’s Writing Center tutors to train them in what they termed a “library survival course” and empower them to spread the word about the library’s offerings to their fellow students and tutoring clients. They summed up the results in this manner: “Through peer interaction, we have turned some of the library’s biggest skeptics into effective advocated of library services. And
that’s what marketing is all about” (p. 26). Both the Students Lead the Library (Arnold-Garza & Tomlinson, 2017) and the Peer-Assisted Learning in Academic Libraries (Rinto, Watts, & Mitola, 2017) anthologies devote entire segments to peer outreach efforts. Also of note is Krista Bianco and Joannah O’Hatnick’s (2017) essay “Aligning Values, Demonstrating Value: Peer Educator Programs in the Library” for its broad view of how peer education programs and academic libraries can function together and its exploration of “the overlap and juxtaposition of values and value between academic libraries and peer educator programs” (p. 57). Finally, the author recommends Annie Donahue, Carolyn Gamtso and Kim Donavan’s (2017) concise, but nearly universal list of lessons learned from their Peer Research Mentor Program at University of New Hampshire Manchester Libraries.

Discussion

The Virtual Academic Writing Lab Tutors (VAWLT) service was an existing peer writing tutor option for University of Maine System students. It was designed as an inventive, access-focused supplement to campus or place-based writing tutoring. VAWLT was created by an instructional designer and is coordinated by a former campus writing center director. As the pilot collaboration between the author and VAWLT progressed, the acronym letter “L” was changed to represent “Library,” as reflected in all of its current marketing (University College, 2017).

The author’s goals for this pilot were to increase the reach of her department, while maintaining its reputation for high touch student and faculty service; to enlarge student tutors’ skill set and increase their agency; to decrease the number of students experiencing library anxiety and/or library/librarian avoidance; and to market all campus librarians and library services. Operating a small one to three-person department intended to serve an entire public university’s distance learner population means that creativity and collaboration are essential to helping as many learners as possible. When all the VAWLT tutors are cross-trained in library skills, there will be four to six more ambassadors spreading the word. There will also be more potential for a two-tiered approach to student research help requests: baseline and frequently asked questions can be more often resolved prior to reaching an academic librarian, while in-depth inquiries may be able to be addressed more thoroughly after referral. The collaboration also provides increased opportunity for VAWLT tutors develop professional skills, improve their own writing and be more mindful of the connection between research and writing as they work with student clients. Reducing the fears of adult learners (Cleary, 2012), of students new to online learning (Brown, Hughes, Keppell, Hard, & Smith, 2015) and of students with library-specific anxiety (DiPrince, Wilson, Karafit, Bryant, & Springer, 2016; Gross & Latham, 2007) was a very prominent goal for the author in researching peer learning theory initially and in the design of the pilot. Established and perceived hierarchies must not stand in the way of students getting the help they need. Lastly, as seen in the literature review, peer tutors and their clients have great potential to become word-of-mouth and/or official marketers of academic library services. The author determined this to be an important goal due, again, to her small department size, the diverse and dispersed nature of her target audience, as well as the need to promote physical campus libraries whenever possible.

The author began drafting the training module by creating learning outcomes and then collaborated with another academic librarian at UMA to delineate essential content. The author,
the UMA librarian, and an instructional designer worked together to map content to learning outcomes and later crafted corresponding assessments. The author then wrote the bulk of the training, eventually creating a module with eleven lessons designed for writing tutors to receive an estimated eight hours of online training. Assessments include multiple choice questions, reflective responses and student-created screencasts. The training emphasizes a referral model in which student tutors triage questions based on their complexity and the tutor’s comfort level. The module was also created to be Creative Commons licensed, and Universal Design principles were applied for maximum accessibility. The library skills module was initially placed into WordPress using the LearnDash plugin and the first VAWLT tutor completed the module in this format. The module has now been transferred to Google Classroom and the content is at present being formatted into a digital, open access textbook. The author used the training module as her project for her completion of the American Library Association Immersion Teaching with Technology 2017 program, completing numerous heuristic and instructional design evaluations of the content and format.

Other touch points beyond the creation of the training module have been required to advance the pilot. The author began joining weekly VAWLT staff meetings whenever possible and works closely with the tutor who completed the training, eventually supervising that tutor for a significant portion of his hours each week. The author also joined the College Reading and Learning Association (CRLA), purchased their *Handbook for Training Peer Tutors and Mentors* and began immersing herself in the corresponding literature in preparation for VAWLT seeking CRLA certification in the future. She and the VAWLT coordinator are also researching possible diagnostics for future specific screening and identification of tutor candidates with strong potential in the library skills crossover. In addition, the author and the VAWLT coordinator are exploring the clearest ways to co-manage tutors and communicate efficiently. Revising the library skills training module, increasing the number of tutors who have completed it, and completing the open access textbook are immediate goals for the Spring 2018 semester. The author also intends to incorporate the READ scale into the training, with the goal of clarifying and strengthening the existing referral model (Gerlich & Berard, 2007; Vassady, Archer, & Ackermann, 2015).

**Conclusion**

Adding baseline library skills and an academic librarian to the VAWLT concept showcases the best of blended librarianship in the distance context. The first year of the pilot has also highlighted the value of partnerships outside the academic library and the necessity of including student voice in library service marketing. Successes achieved thus far include completing the first version of the research skills tutor training module, having one VAWLT tutor complete the module in its entirety and work a full semester after completion, adding the author to the leadership team of VAWLT, increasing her interaction with all of their tutors, and gathering feedback from several training reviewers and the ACRL Immersion 2017 cohort to incorporate in the next revision of the library training. Finally, the minimal anxiety on the part of the author’s academic librarian colleagues about the initiative has been refreshing. The increase in academic librarian research on peer learning as well as pre-planning communication efforts may have helped ease concerns. It does remain to be seen whether any concerns will arise later if
the pilot is determined to be successful and worthy of continuing and growing. Naturally, feedback, whether positive or negative, will be important to learn from and to collect.

Many lessons have been learned already. As with nearly any pilot, the best plans and intentions must flex to unanticipated circumstances such as personnel shortages and funding changes. Retaining the central vision and goals of a project, but being willing to adjust timeline and expectations are essential to moving forward despite challenges. The author and her collaborators also learned that, for successful integration of the library element into the existing peer learning model to occur, it was also needful for the author to join the overall leadership of the VAWLT and to interact with all the peer tutors, regardless of whether they had completed the library module. Relationships and frequent communication are key elements of any peer service program and a holistic approach is wise. Tutors who had not yet completed the library module were still very aware of the pilot progress and this allowed them to make referrals for research help or faculty support more than once. Another lesson learned - or perhaps more confirmed - was the importance of instructional design (ID) skills in the realm of distance library services and in any peer service program. The support of professional instructional designers and the addition of basic ID knowledge to the author’s skill set was crucial for completing the training module and will be just as necessary during future revision.

The privilege of working closely with students in providing service to other students is difficult to overstate. The energy, creativity and fresh perspective that participatory learning infuses into academic library work is likely key to the future of the profession. Peer tutors can transform what could be viewed as mundane or repetitive interactions into an important interdependence experience. What’s more, in the current reality of higher education’s enrollment challenges, two of the constants are students’ desire for highly social, engaging academic environments (Collier, 2015; Crone & MacKay, 2007; Learning House, 2017; Strong, Harvey & Robinson, 1995) and their need for the ability to build skills that employers need the most (Breitwieser, 2016; NACE staff, 2016; Partnership for 21st Century Skills, 2006; Schanzenbach, Nunn, Bauer, & Mumford, 2016). Peer learning and service programs provide both. As Hughes, Gillespie and Kail said, “Undergraduate peer tutors are creating one of the most important experiences in their educational careers, a complex, multi-faceted experience whose influence persists not just years but decades after graduation” (2010, p. 13). Even if the effort must start small, as in this case study, it is time for academic libraries to widely embrace peer learning and to continue applying its theories in ways that advance the cause of building student confidence and adding a crucial social context to their learning.
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Working out the Bugs: Piloting Library Instruction in an Online Entomology Graduate Program

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Abstract

Like most of its peer institutions, the University of Nebraska-Lincoln Libraries faced the challenge of meeting the needs of a growing number of students taking online courses. The author, hired as the new Virtual Learning Librarian in January 2016, was charged with creating a new Virtual Learning Program. This tutorials-based program was first fully implemented in a fully online Entomology graduate program. This paper summarizes the development of the Virtual Learning Program, how it was adapted to the Entomology program, and the initial results from the first semester of implementation.

Background

For the past several years, the University of Nebraska-Lincoln Libraries faced the same challenge as many other academic libraries: a steady increase in the number of fully online courses and students requiring asynchronous library support. Between 2013 and 2014, the University experienced a 22 percent increase in fully online student credit hours (Niemic, 2015) and an analysis of data provided by the University’s Office for Online and Distance Education revealed that approximately 58 percent of all enrolled students (approximately 25,000 at the time) took at least one online course and approximately 11 percent of these students took their courses fully online (Cano, 2016).

In addition to the need to better serve fully online students, faculty within the Libraries’ Reference and Instruction Services (RIS) department realized that virtual learning should not be restricted to online courses. The department was receiving an average of over 300 one-shot instruction requests per academic year and the relatively small number of RIS faculty (approximately one for every 1,000 students) was having difficulty meeting that demand. Furthermore, there was a lack of standardization of instruction, leading to a challenge meeting the requirements of increasingly complex assignments and needs. While the University Libraries did offer a half-semester credit-bearing course, few departments required it and decreased enrollment led to the course’s discontinuation.

Consequently, the Libraries converted a vacant faculty line to create a new Virtual Learning Librarian position, charged with creating a fully online library instruction program, and hired the author to fill this position effective January 2016. The author, in collaboration with the RIS Chair and the Libraries’ Instruction Coordinator, expanded the role of the Virtual Learning
Librarian position to include the development of all asynchronous library-related instruction as part of a comprehensive Virtual Learning Program.

Soon after, the Libraries converted another vacant faculty line to create a new Learning Resources Design Librarian, filling the position in January 2017. The primary charge of this position is to develop program-level library-related curriculum materials. Along with the author and the Instruction Coordinator, the Learning Resource Design librarian forms the core teaching and learning team within the RIS department. This collaboration has led to the creation of a workflow through which Subject Specialist librarians can submit requests for instructional assistance as diagrammed in Figure 1. Given the need to move more library instruction online, the Virtual Learning Program is central to the work being done by this team.

**Figure 1.** Workflow when request received from Subject Specialist librarian.

### Developing a Virtual Learning Program

In developing the new Virtual Learning Program, the author had two primary goals:

1. Integrate the library instruction organically into courses
2. Incorporate principles of active learning

Regarding the organic integration of library instruction into courses through the LMS (currently Canvas), the author’s goal was to reduce the perception of library instruction as “outside” of the course. Rather, he proposed building an iterative library instruction curriculum, diagrammed in Figure 2. Besides the practical benefits of reaching a larger percentage of students than traditional “one-shots,” this approach also provides access to library instruction for the duration of a students’ program rather than front-loading it at the beginning of their time at the University. Furthermore, this approach is consistent with established best practices (York & Vance, 2009) and work already being done at numerous institutions and often reflected in the literature in the form of case studies, including one at the University of Nebraska Medical Center’s McCoogan Library (Hartman & Fial, 2015).

Figure 2. Virtual Learning Program stages with sample objectives.

This trend towards creating tutorials-based online library instruction also includes the incorporation of active learning techniques, the research on its benefits is substantial. As Chickering and Gamson (1986) explained:

Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves (p. 3).

Bonwell and Eison (1991) summarized this by defining active learning as “instructional activities involving students in doing and thinking about what they are doing” (p. 5). Bonwell and Sutherland (1996) advanced this work by providing a framework to “allow faculty to consider their course objectives and teaching style and to determine through self-reflection what
active learning strategies best meet their needs” (p. 4). This framework included the development of course objectives, integration of an instructor’s personal style, minimizing the risk of failure, correctly perceiving the instructor’s role, and assessing students’ experience (Bonwell & Sutherland, 1996).

The research on the application of these principles includes online courses. In recent years, however, research on active learning has shifted its focus to the online classroom. Koohang (2012), for instance, recognized the growth in online postsecondary enrollment (10 percent per year compared to two percent for the traditional classroom) and proposed a systemic model of active learning in online environments based on the existing body of active learning research. Koohang (2013) then applied factor analysis to validate this model. Some researchers have shared their personal experiences integrating active learning into an online course. For example, Donovan (2005) shared the professor’s experience with creating active learning environments in their online classrooms and recommended best practices. Similarly, Varela and Westman (2014) shared how their use of active learning in an online course led to better learning outcomes than the face-to-face section through the promotion of online discussions and use of web-based tools to complete assignments. The research has also shown that students support these efforts. In Koohang et al. (2016), for example, the researchers conducted a study of undergraduate and graduate students enrolled in online courses and “all elements of active learning received above average to high mean scores indicating learners’ favorable view of the importance of the active learning elements in the design of online courses” (p. 24). This affirmed the importance of designing online classes with active learning in mind.

This also extends to online library instruction. Dewald (1999) included active learning as criteria for good online library instruction practices, writing that “[a]ctive learning in an online tutorial may be defined as exercises conducted by the student online, whether this involves using online forms to review material…or sending online worksheets or quizzes to the librarian….” (p. 27). Lorenzen (2001) further defined active learning and applied it to several library instruction scenarios. More recently, Walsh and Inala (2010), summarize existing research on active learning and develop practical examples of how it can be applied in library instruction. Detor et al. (2012) conducted a survey of undergraduate students who had experience both passive and active learning information literacy instruction and found that active instruction produced more positive effects on student learning.

The author began to develop online library instruction tutorials that promoted active learning based on this existing body of knowledge in late Spring 2016. After initially creating tutorials on the Guide on the Side open source platform, the author decided to adopt Springshare’s LibWizard tool, which is an updated and enhanced version of the company’s LibSurveys product. He made this decision because the Libraries already used Springshare as a vendor (e.g. LibGuides, LibInsights) and LibWizard improved upon the features of Guide on the Side that promote active learning. Specifically, LibWizard provides the ability to create interactive tutorials integrating a variety of content (e.g. live websites, images, embedded videos) in individual slides and the ability to assess students’ learning through a variety of assessments. The platform also provides valuable analytics to aid in the assessment of the tutorials’ success. While these tutorials were initially rolled out as part of the University’s Educational Administration department’s fully online “success center” (Yao, Wilson, Garcia, Defrain, &
Cano, 2017), it was when some issues within a fully online graduate Entomology degree program was brought to his attention that the opportunity arose to demonstrate the benefits of the new program.

**Integrating the Program into Entomology**

Towards the middle of the Spring 2017 semester, the Entomology Graduate Program Manager met with the Entomology Subject Specialist to discuss issues that professors were identifying in students enrolled in fully online graduate program. According to the Program Manager, the professors observed the following:

- Students demonstrated ignorance regarding the Libraries’ resources and services
- Students lacked basic research skills, including locating reliable sources
- Students had difficulty properly citing their sources on research assignments
- Students were unfamiliar with copyright laws and guidelines on the use of images and other media in projects
- Students were experiencing difficulty meeting the department’s expectations for academic writing.

While purely anecdotal in nature, these observations matched those made by faculty in other departments and the Entomology librarian sought out the input of the Learning Resource Design. Following the process outlined in Figure A, the Learning Resource Design Librarian quickly brought the author and the Instruction Coordinator into the conversation. Soon, a meeting was held that included the Program Manager, a senior Entomology faculty member, the instructional designer assigned to Entomology, the Entomology Librarian, the Learning Resource Design Librarian, the Instruction Coordinator, and the author. During this meeting, the author summarized the Virtual Learning Program and it was agreed that a suite of tutorials would be integrated into the BIOS/ENTO 406/806 Insect Ecology course that is the prerequisite for the other courses in the two-year graduate program. The specific topics covered in these tutorials would be:

- Creating basic library-related accounts
- Introduction to the Libraries catalog
- Introduction to subject-specific electronic databases
- Introduction to Google Scholar
- Basic citation skills, focusing on APA format
- Overview of University’s academic integrity policy
• Criteria for evaluating resources

The author incorporated these lessons into 15 short tutorials grouped into four modules, which are listed in Appendix A. The author worked closely with the Program Manager to identify the best content for the individual tutorials and instructional designer to best present the tutorials in Canvas. After several months of ongoing discussion, the completed modules were included in the “Research Orientation” section of the Fall 2017 online section of BIOS/ENTO 406/806 Insect Ecology, taught by the Program Manager who holds the rank of Lecturer within the Entomology department. These modules, as was the rest of the research orientation, were required as part of the course and included in students’ grades. While the students had some flexibility in completing the modules, they were encouraged to do so within the first few weeks of the program. Of 43 students initially enrolled in the course, 41 completed at least one of the individual tutorials and just under half completed all of them (there were some issues with data-collecting as will be summarized in the Challenges section).

Challenges

Given that this project was the first in the new Virtual Learning Program, the author undertook it fully expecting that challenges would arise. The first of these challenges was no surprise. Namely, unlike with his previous work in Educational Administration, the author had no knowledge of the subject matter in Entomology. Consequently, he had to rely heavily on both the Program Manager and the Entomology librarian when designing slides and exercises specific to the field of study. This required much asynchronous collaboration but, for the most part, the process was smooth as the lines of communication remained open throughout the design phase.

Another expected challenge was record-keeping. From the outset of the project, it was decided that the tutorials should include a record of completion so that students do not have to needlessly retake the tutorials in future courses. At the time the discussions began, the author was optimistic that the Libraries would have some form of badging program implemented by the Fall 2017 semester to provide this record of completion, but administrative decisions made by the University’s Information Technology Services (ITS) department required that program to be postponed. Several options were discussed, including the creation of a “master course” containing all tutorials to which the current course would link but, in consultation with the instructional designer, it was decided that this option would be cumbersome and highly confusing for students. Ultimately, the “low-tech” option of maintaining a simple Excel spreadsheet was agreed upon with the understanding that this solution was meant only for the pilot phase of this project.

The non-scalability of the spreadsheet option was demonstrated within days of the course opening. Per the request of the Program Manager and the Learning Resource Design Librarian, the author included their email addresses as recipients for the tutorials’ certificate of completion. This resulted in dozens of emails coming into their inboxes and both quickly asked the author to remove their email addresses from the tutorials. While this was mostly an inconvenience (and a semi-humorous one at that), it quickly became apparent just how unsustainable this solution was as the author struggled to keep up with documenting students’ completion and giving proper
consideration to their feedback. Furthermore, FERPA-related policies prevented the author from storing the spreadsheet in a cloud-based folder or emailing it through unsecured email, thus making it difficult to track which students had completed the tutorials. Ultimately, the author negotiated the creation of a secure Box folder through ITS to store this spreadsheet and provided access to the others involved in this project.

Another unexpected challenge was the integration of the tutorials into Canvas. While the individual tutorials were organized into modules and saved in Canvas Commons, the tutorials themselves could not be integrated directly into Canvas because the Learning Tools Interoperability (LTI) feature was not active for the Libraries’ Springshare products. Activating this feature would have required permission from ITS and the approval process would not have been completed in time for the start of the course. Therefore, the author initially included the tutorials as external URLs within the Canvas module but the Program Manager and instructional designer concurred that the appearance was confusing for the students as they may not have intuited that they were supposed to click the link to access the content. Furthermore, Canvas issues a warning regarding unsecured external content that too closely resembled an error message, thus increasing the likelihood that students would be confused. Consequently, the author and the instructional designer worked together to create individual pages for the tutorial that included the introductory text, learning outcomes, and instructions on creating the external URL.

Despite these challenges, the overall implementation of the tutorials in the pilot phase of this project went well and this is affirmed by the generally positive feedback given by the students who completed them.

**Early Feedback**

Student feedback was sought through two means. First, the individual tutorials included a form through which students can offer their comments. This initial round of feedback largely focused on specific issues encountered, such as:

- Some confusing or ambiguous wording in questions included within the tutorials
- Some technical issues, including the audio in embedded videos being too low
- Perceived clunkiness in some tutorials

For the most part, though, the initial feedback was positive and included comments such as:

- Easy-to-navigate
- Very informative
- Very helpful
- Quick and easy
More detailed feedback was gained in a required follow-up survey distributed by the instructor. These results, included in Appendix B, were overwhelmingly positive in regard to the tutorial-based modules. Furthermore, numerous comments were included by upper level undergraduates in the course to the effect that they wished they would have been exposed to the tutorials earlier in their studies.

**Next Steps**

Based on the experiences gained during the pilot project, the following steps are being taken for the Spring 2018 and Fall 2018 semesters:

- Permission has been received from ITS to activate LTI in Springshare products and tutorials will now be fully embedded in Canvas modules
- The author has accelerated the rollout of a Libraries-only badging program and is working with the Instruction Coordinator on this project
- Additional lessons based on the initial tutorials have been identified and are currently in production.

Furthermore, the author and his colleagues want to be able to continue to publish the work being done in this project. Consequently, a formal research project is being designed with the intent of gaining IRB permission to formally survey and/or interview students outside of the courses for the purposes of future publications.

**Conclusions**

At the time of this writing, the first semester of this pilot project is coming to an end. Therefore, it is very difficult to truly assess the success that the integration of the tutorials will have on the long-term success of the students in this program. Based on the early feedback, however, it is evident that there is sufficient proof of concept to continue working on scaling online library instruction within the Entomology graduate program and expanding this approach into other academic programs. The challenges experienced during the design and implementation phase and feedback gained during the semester will inform the next steps in this project, summarized in the subsequent section, as the author and his colleagues continue to improve the quality of online library instruction to students.

Should colleagues at other institutions seek to reproduce this project should heed the following lessons learned by the author during the design and implantation stages of the pilot project:

- Ensure that this a strong working relationship among several stakeholders, especially the course instructor and instructional designer
• Collaborate closely with colleagues in the development of instructional resources, especially in specialized fields of study

• Try to anticipate logistical and technical issues and seek to proactively find solutions to them when possible

• Develop a good project management plan and ensure that there is good workflow during all stages

• Take all feedback constructively, regardless of how it is delivered (especially by students).
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Appendix A: Entomology Instruction Modules

- Module 1: Getting Started with the Libraries for BIOS/ENTO 406/806 Insect Ecology
  - Tutorial: Introduction to the University Libraries
  - Tutorial: Navigating the Libraries’ Website
- Module 2: Creating Libraries Accounts for BIOS/ENTO 406/806 Insect Ecology
  - Tutorial: Creating a My Library Account
  - Tutorial: Creating a Delivery Account
  - Tutorial: Creating a Printing and Copying Account [for on-campus students]
- Module 3: Conducting Research for BIOS/ENTO 406/806 Insect Ecology
  - Tutorial: Introduction to Scholarly Research
  - Tutorial: Using Quick Search [the Library Catalog] to Find Resources
  - Tutorial: Introduction to Academic Search Premier
  - Tutorial: Electronic Resources for Entomology
  - Tutorial: Introduction to Agricola
  - Tutorial: Introduction to BIOSIS Citation Index
  - Tutorial: Introduction to Google Search
  - Tutorial: Evaluating Resources
- Module 4: Avoiding Plagiarism for BIOS/ENTO 406/806 Insect Ecology
  - Tutorial: Fundamentals of Academic Integrity
  - Tutorial: Introduction to APA Style
Appendix B: Tutorial Survey Responses

Q1: The tutorials were easy to navigate.

Q2: The tutorial menus (left-hand text) were well organized and intuitive.
Q3: Information provided throughout the modules was sufficient to help you answer the in-module questions.

Q4: The tutorials provided a useful introduction to entomological research.
Q5: You are able to apply what you learned in the tutorials to complete your class assignments.

Q6: After completing the tutorials, how likely are you to use the library's Entomology-specific resources for future classes?
Mind the Gap! Making the Leap to Reach Distance Students through On-Campus Events

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Abstract

When a mid-sized library at a private university held its first robust research-support event, a huge portion of the student body was noticeably absent— the distance population. Academic libraries are charged with providing distance learners the same services and resources as on-campus learners. This means that “service excellence in distance librarianship” should include conducting outreach programs for distance learners that parallels outreach programs for on-campus learners. This case study tracks the process of rethinking an on-campus event to incorporate distance learners. It is designed to communicate how a shift in thinking can create opportunities for outreach experiences by transforming existing events, and/or extending programs the first time they are made available.

Introduction

“I see you, online students! I see you out there!” The librarian looked from the crowd of students in front of her, directly into the camera. She could not actually see the faces of the online students, but she let them know they were not forgotten as they saw her smiling directly at them through their screens. They were a part of the biannual library research event which, six months prior, was not accessible to anyone outside the physical library. In the months between the two events, the librarians brainstormed to “mind the gap” between the online and on-campus students, and involve them all.

This paper will describe the process of rethinking an on-campus outreach and instruction event to include distance students. It will explore the importance of extending outreach to distance students, describe the initial research event that was held for on-campus students, and follow the thought processes and steps involved in reshaping the event to be more inclusive. The results of this process were positive on many levels. By prioritizing outreach to distance students, librarians can create new ways to connect with the distance population, feel a stronger sense of community with people who are not on campus, and help distance students succeed at immediate challenges in their studies.
Distance Student Outreach is Necessary

The Association for College and Research Libraries is adamant in its standards that students should have “resources, services and personnel available… regardless of their physical location” (Association of College and Research Libraries, 2016). Research indicates that, in the eyes of distance students, libraries often fail to meet this standard. Distance students lack both an awareness of library resources and a feeling of support from their libraries (Huwiler, 2015). This not only reflects poorly on libraries, but affects distance students’ chances for academic success. The literature suggests that students’ experience with the library can play a role in student retention (Cannady, 2015), so outreach to the distance population can have great implications.

Library outreach serves many purposes, including building a connection between the library and students, and empowering students to leverage the resources available to succeed in their studies. Although outreach to distance students presents unique challenges (Holloway, 2011), it is imperative that librarians prioritize extending outreach efforts to this population.

In her piece, “Library Services for Distance Students: Opportunities and Challenges,” Anja G. Huwiler (2015) reviews literature to conclude that libraries must prioritize easy access to services, tailor marketing strategies, and decrease the division between on-campus and distance students. The event described in this paper was transformed to advance the above goals. By instructing distance students about the resources that are available through a format that is easily accessible to them, they can feel a greater sense of support from their libraries and grow as individual researchers. Their improved ability to use the library’s resources also increases the library’s relevance and the value of the resources it provides.

The On-Campus Event

The initial outreach event, named Conquer the Blank Page, was based on an event that started in Germany called the Long Night against Procrastination. Both events had the same goal: to create a space and support system that encourages students to get a head start on their final papers and projects. Although, unlike the Long Night against Procrastination, Conquer the Blank Page was not an all-night event, it ran late into the evening and provided a variety of resources to students on campus.

Conquer the Blank Page had four distinct features: instruction, personal consultations, destressing resources and a space to begin writing. Instruction was presented in the form of six brief presentations by librarians and writing coaches. The presentations lasted about fifteen minutes each, including time for audience questions. Students were free to come and go to the sessions that interested them, and each session was repeated three times over the course of the event. Librarians and writing coaches were available during and between sessions to meet with students individually to discuss specific assignments. For some attendees, the highlights of the event were the destressing station, where they could relax on a massage chair and color stress away, and the snack area, which was complete with healthy and unhealthy food options and hot beverages.
For a successful event, the librarians initiated strategic collaborations with faculty members and academic support from the earliest planning stages. Key faculty members were identified, with special interest given to those who taught core courses with substantial papers as a central assignment. By working with the faculty members, the date of the event was selected to purposefully meet the students’ needs between their readiness to work on their assignments and having adequate time to develop a quality paper. These faculty members were particularly supportive of the event and encouraged students to attend by offering extra credit to attendees.

Another vital collaboration was with the academic writing support center. Campus writing coaches were invited to be a part of the planning committee and helped design an instruction and support program that complemented the research presentations given by librarians. The instruction sessions included topics such as “starting your search” and “plagiarism.” The librarians prepared and presented three sessions on research, while writing coaches presented three writing-focused topics. The result was a robust introduction to research and writing resources.

In addition to faculty collaborations, the event was marketed through a variety of outlets. The librarians used university level resources, such as the event calendar and all-student email list-serve, to reach students in commonly accessed digital spaces. The event was also promoted through social media sites, on the library homepage, and through a LibGuide that was developed specifically for the event. In addition to these marketing strategies, the library offered incentives beyond the services and resources that made up the event. Three prize packages were made available for a raffle, and any student who demonstrated participation and answered a two-question reflection survey was entered to win.

On the night of the event, students were given a paper passport that detailed the instruction sessions and consultation options, and contained a map of the library that highlighted important areas of event. The passports doubled as proof of attendance for students who were offered extra credit for participating and who wished to be entered in the raffle. Students would receive a stamp for each consultation appointment and instruction session they attended.

The reflection survey indicated that students were very happy with the event, and every survey respondent indicated a willingness recommend it to a friend. Students provided consistent feedback that the event was “very helpful,” “informative,” and “professionally done.” They also provided suggestions on how to improve the event, such as expanding the hours, changing the timing of the event in the term, and requiring less paperwork, in reference to the passport and stamp set-up. The most consistent complaint was that the event was not available to distance students. Therefore, our goal for the next semester was to offer the event to both distance and on-campus students.

The Event, Reimagined

Following the Conquer the Blank Page event, a debriefing committee was created to explore ways to improve the event and open it to distance students. After a review of the distinct features of the event, instruction, consultations, destressing and writing, the committee decided to divide it into two separate events. The first event, renamed Jumpstart Your Research, would
be held earlier in the semester and focus on research methods, including instruction and consultations. The second event, called the Write-In Event, would be held toward the end of the semester and serve as an encouragement for students to put pen to paper, with writing support and destressing resources.

**Bringing it all Online**

Once the concepts of the two events were established, the committee aimed to extend the events to the online community. Jumpstart Your Research posed many challenges, including how to provide real-time instruction and consultations, how to offer proof of participation so professors could offer extra credit, and ways to encourage distance students to start their papers. The Write-In was tricky because the librarians needed to provide incentives for students to participate without extra credit.

**Creating a Digital Space**

The committee discussed several ideas for bringing the instruction sessions to the online students, such as broadcasting the sessions on Google Hangouts or airing them in the learning management system within specific classes online. It became evident that the library needed a unique digital space that wasn’t open to the general population, but was accessible to all students at the university. The campus Center for Teaching and Learning (CTL), which oversees the Blackboard learning management system for the university, joined the committee meetings to broaden the scope of the conversation. Through these conversations, the librarians learned about a Blackboard organization, which is a unit in Blackboard that is similar to a course, but is open for all current students to self-enroll and is not tied to semesters. Within the organization, the librarians would have access to Blackboard’s video conference tool, Collaborate Ultra, which would offer recordable live streaming, screen sharing, and chat sessions. Additionally, the Blackboard organization provides discussion boards, announcement postings, and content areas where the librarians can embed media and link to resources. The Blackboard organization would provide an ideal digital space that would be open to all the students at the university, but closed from the wider reach on the internet.

The librarians decided to name the organization the Library Resource Center (LRC). Students could enroll by simply searching for the organization from their Blackboard portals. Once a student was enrolled in the LRC, she could participate in the event and remain enrolled to participate in future events. The LRC became home base for both the Jumpstart your Research and Write-In events.

**Instruction Sessions**

As with Conquer the Blank page, the librarians and writing coaches offered several brief instruction sessions. Based on reviews from the first event, the instruction sessions were spaced further apart to allow more time for questions, and were only given twice throughout the event. To include the distance students, each session was streamed live through Blackboard Ultra and recorded for future views. During the instruction sessions, two librarians monitored the online chat system through Blackboard Ultra to field questions from the online community. Librarians
typed answers that were simple or specific to a student, and verbally shared typed questions that were applicable to the broader audience with the presenter.

An additional online-only instruction session was added specifically for distance students. This session reviewed resources and services that are of unique interest to the distance population, including nationwide reciprocal borrowing options, interlibrary loan and online reference tools. This provided distance students an opportunity to address their concerns about accessing resources and services from a distance.

**Proof of Attendance**

The initial on-campus event had used a physical passport that enabled students to provide proof of attendance to the event. Although the passports were well-designed and functional, many students found that having a piece of paper stamped was cumbersome, and there was no simple plan for stamping a piece of paper for distance students. To meet these challenges, the librarians adopted a digital badge system through the LRC. Students who attended the event in person or online could login to the LRC and complete a simple reflection survey. Once the survey was completed, the students would receive a digital badge within the Blackboard system that they could send to their professors to earn extra credit.

**Consultations**

A big aspect of both the Jumpstart and Write-In events involved individual consultation appointments with librarians and writing coaches. Collaborate Ultra was a useful tool for bringing individual assistance to online students. The librarians created a Collaborate Ultra session that was open for students to enter throughout the duration of the events. A student who wanted to discuss her or his particular research would login and be greeted by the smiling face of a librarian. The librarian would review the question to determine whether it would be better handled by a librarian or a writing coach. The student would then be placed into a breakout room, which is a private digital space within the Collaborate Ultra session, with the proper support person. The librarian or writing coach would be able to share her screen, upload files, and speak directly to the student as necessary.

**Destressing Stations**

On campus, destressing resources were available to students, including massage chairs, coloring sheets, and colored pencils. The librarians hoped to offer options to the distance students, so they created a space within the LRC to post items to help students relax and focus. A digital fireplace with crackling sounds was embedded into the LRC, coloring sheets with positive messages were made available to print, and a link to a Spotify playlist was added with study-friendly songs recommended by students who registered to the event. Additionally, students could access links to puzzles and mind games to help initiate the thought process.

**Snacks**
Students who attended the event in the library were able to enjoy a selection of snacks and hot beverages at each event. Because food is often a big draw for students, the librarians wanted to extend this portion of the event to the distance population. They decided to offer mini care packages to all distance students who pre-registered for the event. Each care package contained a hand-written note of encouragement and support, candy, a tea bag and a stress relief moldable foam. The mini care packages served many purposes. They provided students with an incentive to enroll in the LRC in order to pre-register for the event, offered a personal point of connection with the library, and, hopefully, provided a pick-me-up through sugar and caffeine.

The librarians were concerned that, with nearly 9,000 online students attending the school, the request for mini care packages would be overwhelming. To temper this possibility, they advertised them as being available while supplies last and all students who pre-registered would be included in a drawing for an Amazon gift card. The gift card drawing was meant to provide incentive regardless of mini care package availability. Pre-registration for this event did not exceed the library’s ability to meet the demand for care packages, but the librarians learned the time and money involved in providing this service, and the gift card drawing can remain as a back-up incentive if the events become more popular.

**Marketing the Event**

Marketing for the blended online/on-campus events was similar to the marketing plan for the initial on-campus event. Librarians contacted professors in advance and encouraged them to promote the events to their students and to offer extra credit incentives, if possible. The events were added to the university calendar and promoted through the all-student email blast. In addition to these methods, the librarians created an online registration that was aimed primarily at distance students. The registration was created through Google Forms and asked for their name, email address, mailing address, student level, and the name of their favorite song to listen to when they study. The song suggestions were added to the Spotify study playlist.

Students had to actively enroll in the LRC to participate, so the librarians created a brief tutorial video that demonstrated the two steps required for enrollment. The registration form was posted only within the LRC so that students had to enroll in order to register. The librarians hoped this would encourage students to enroll in the LRC in advance of the event so they would be more likely to attend.

**Post-Event Survey**

The librarians created a simple survey for students who attended the event. The responses were positive, but were few.

**The Result**

Shifting the on-campus event to an online space was an exercise in creativity and involved stepping out of a comfort zone. While the logistics sometimes felt daunting, the results were exhilarating. Several students shared their appreciation for the outreach, and many expressed that they learned about new resources through the event.
There were several aspects of the event that would benefit from greater attention, including improved marketing techniques and better assessment of the outcomes. Christine Tobias and Amy Blair (2015) note the importance of assessing the “availability, appropriateness, and effectiveness of distance library services” (p. 149), and this particular event could be improved by evaluating how well it supports these goals.

Ultimately, the shifting of this particular event to the online space was just the beginning of a new way of thinking. The librarians will now approach future events with a new confidence that distance students can be an active part of what happens on campus. The librarians hope to make the transitions smoother, more accessible and available to an ever-greater extent. They now have a permanent space in students’ Blackboard homepages through the LRC. They have a method for sitting in front of the students to conduct reference interviews and individual consultations. They can now confidently share study music, destressing resources, and food. The digital badge system has piqued the interest of professors across campus who are considering applying the concept to their courses. The librarians also have a closer relationship with the academic support team and several professors. These ideas can serve as launch pads for increasingly creative outreach methods, develop a greater sense of community, both on and off campus, and improve direct assistance for students for their immediate research needs.
References


Bringing Scale and Structure to the Online Information Literacy Program

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Abstract

This case study provides insights into how one academic library scaled and structured its information literacy program for a rapidly growing online learning division. Particular attention is paid to strategies for reaching learners who bypass portions of the liberal studies requirements and techniques for designing information literacy modules taught by the instructor of record. This case study demonstrates how this library’s online information literacy program reached a new population of students while creating efficiencies with staff time. Attention is also paid to aspects of the program still under development, such as additional modules and a comprehensive assessment strategy.

Introduction

The student population at Champlain College consists of two categories of students: mostly full-time, on-campus students who are nearly all undergraduates, and online students, many of whom are working professionals taking classes part-time, enrolled in both undergraduate and graduate programs. The online division, Continuing Professional Studies (CPS), has seen rapid growth in the past few years thanks in part to discounted tuition rates with employees of corporate partners and their spouses (Straumsheim, 2015). There are now more than 3000 students now study online at Champlain College, compared with just 1000 in May 2015. (Champlain College History, 2017). While the Champlain College Library has been delivering information literacy instruction in a programmatic way for many years, the programmatic approach is new to the online environment. Like Champlain College, libraries around the world are confronting challenges in delivering information literacy instruction to online students in a scalable, sustainable manner.

Appalachian State University and the University of Utah are two examples of institutions whose libraries use a scalable online course to deliver information literacy instruction to all students already enrolled in a required liberal studies course. Libraries at both schools are able to reach dozens of sections of their targeted course each semester without expending the time to have a librarian teach in each class individually (Johnson, 2017; LeMire, 2016). To help ensure the meaningful adoption of this course by as many First Year Experience instructors as possible, the library at Appalachian State University has partnered with selected faculty members to “evangelize” for the program among their colleagues in exchange for a stipend (Johnson, 2017, p. 266). Meanwhile, the University of Utah program uses a “train-the-trainer” model to engage with new instructors of the targeted liberal studies course (LeMire, 2017, p. 18).
The library at the Institute of Technology Tallaght designed a reusable learning objects-based instruction program around their information literacy framework using a structure that moved students from basic to advanced skills. The program at this institution saw reusable learning objects present in 35 undergraduate courses, including in mandatory courses for first-year students. While librarians and teaching faculty worked collaboratively on developing some of the reusable learning objects, that material was ultimately uploaded to an internal content-sharing repository so that teaching faculty could add it to their courses independently (Russell, Ryder, Kerins, & Phelan, 2013).

**Information Literacy at Champlain College: The Limits of Bringing an On-campus Program Online**

The teaching librarians at Champlain College reach on-campus, undergraduate students at least seven times during their undergraduate careers through in-person or hybrid information literacy instruction. This instruction is scaffolded, sequential by design, and embedded into an on-campus liberal studies program known as the Core. The Core is highly structured, meaning that most students will complete the entirety of the college’s information literacy program. Online undergraduates, however, complete a less structured liberal studies program as part of the requirements of CPS majors, meaning that the order and timing in which students take courses is somewhat less predictable. More importantly, many students transfer in at least some of their liberal studies courses; CPS markets itself specifically to students with some college experience or an Associate’s degree already.

This scaffolded, sequential in-person information literacy program is staff intensive. The college does not employ a librarian dedicated to teaching information literacy in the Core Division. Instead, eight librarians with various job descriptions teach several classes each semester and participate in activities such as assessment, lesson planning, instructional design, and professional development around teaching. The vast majority of on-campus classes are taught during traditional Fall or Spring semesters, and instruction schedule and workload expectations are based on that calendar. The undergraduate calendar in CPS, however, consists of six terms throughout the year with limited breaks, a schedule that would place a strain on the teaching librarians if they were to delivery information literacy sessions in that synchronously online.

As the scaffolded information literacy program taught in the Core Division would not be appropriate for CPS due to curricular differences, and as the library would not have the staffing to significantly increase the number of sessions taught through synchronous, online instruction (and to provide training and professional development so that all librarians can provide high-quality instruction online), the administration of Champlain College Library opted to develop a brand new, comprehensive information literacy instruction program for CPS students. This program would be designed in a way sustainable of staff time and scalable to adjust to any growth of the online student population.
A New Information Literacy Initiative for Online Undergraduates

Making an Initial Pilot a Reality

Before even beginning to develop an information literacy program for CPS undergraduates, the Champlain College Library was already delivering online instruction in the form of four short, module-based lessons for students enrolled in four Core courses that some on-campus students take during their sophomore year. With librarians teaching instruction sessions in the remaining four sophomore year Core courses (students take four of the eight overall), this approach allows the information literacy program to efficiently reach all sophomore students twice during the semester. The two modules associated with Fall courses both focused on the ethical use of information: in one, students completed a module in which they considered the ethical questions invoked by musical mashups, and in the other, students examine the use of simulated footage in the documentary *An Inconvenient Truth*. Both lessons include content pages, a short video clip, and two discussion board postings each.

Upon being introduced to this content, the Dean of CPS commissioned the library to incorporate those two modules into a liberal studies course titled Ethics in the Profession. These two modules were imported as originally designed, replacing an entire week’s worth of content in its entirety. In order the determine the efficacy of that lesson, a librarian took over teaching that course for a week, managing discussion board communication and grading student participation once the week had completed. This pilot project began in the Spring B 2015 term and was incorporated in one or two classes each term from that point forward.

A librarian taught this original lesson from Spring B 2015 through Summer B 2016. Towards the end of that pilot period, the lesson was redesigned with the goal of increasing its applicability to information ethics questions that students would encounter in their future careers. The lessons around mashups and *An Inconvenient Truth* moved forward, though four discussion boards were reduced to a single, extensive prompt that requires students to analyze the two case studies that were presented. From there, students move into an annotated bibliography assignment in which they explored an information ethics question or case study of specific relevance to their major. This assignment asks students to bring theory into a practical situation and also asks them to demonstrate evaluation and synthesis skills.

As part of the process of moving this module from being a pilot project to being course content taught and graded by the faculty of a record for the course, support documentation was created. This documentation drew on the experiences of librarians in teaching this module over several terms, providing tips on managing the discussion board along further context on the pedagogy and design choices behind the lesson.

Planning for an Online Program

While one of the goals of this information literacy program was to manage the library’s staffing needs by removing the responsibility of teaching information literacy lessons online, the fact remained that a librarian would still need to envision, design, pilot, assess, and redesign every module. Turnover in late 2015 provided library administration with the chance to develop
a new position, Digital Learning Librarian, focused on developing and maintaining just such a program. Just like most librarians at Champlain College, this position requires teaching in-person information literacy sessions in the Core Division and participation in activities serving primarily the on-campus community such as print collection development, committee work, and programming. The fact that this position is not the “Continuing Professional Studies Division Librarian” reflects a deliberate choice, specifically in that providing reference and outreach services to CPS students and faculty was to remain a responsibility shared by everybody in the library.

The new Digital Learning Librarian started in January 2016 with the pilot lesson in Ethics in the Workplace already well underway. Early priorities when moving into this position were developing the more permanent version of the Ethics in the Workplace lesson as already described and identifying additional courses for information literacy modules in order to build a more comprehensive program.

In consultation with the Dean of CPS, librarians identified several courses that might be a good fit for information literacy modules. Intercultural Communication, Critical Reading & Expository Writing II (CREW II), and Introduction to Statistics are classes that, along with Ethics in the Professions, many students have to take and relatively few are able to transfer in substitute credit for. Critical Reading & Expository Writing I (CREW I), meanwhile, is a class that many students are able to skip due to transfer credit but that was identified as an important area to build skills for students who had less college experience than their peers. The need for enhanced information literacy instruction in CREW I and CREW II was bolstered further after a review of the library’s reference question log revealed several research and bibliographic questions coming from students enrolled in both courses.

Fairly early into the planning and development process, it became clear that the Introduction to Statistics class would not be a fit for the Information Literacy program at this time. While interpreting datasets and understanding the economics of data collection are two topics that an information literacy program might explore, those did not fit into the current design and learning outcomes of the course in a seamless way.

Building Students’ Essential Bibliographic Skills

When considering the information literacy needs of students enrolled in CREW I, it made sense for the lesson to focus on fundamental bibliographic skills such as developing keyword strategies and navigating library databases to select articles and ebooks. Students in that class reported in a pre-existing reflection assignment that they generally had relatively little experience with library searching, particularly at the college level. This differed somewhat from the philosophy of the Information Literacy program in the Core Division on campus, as that program does not offer any lessons that teach bibliographic skills exclusively. However, the module developed for CREW I does make use of active learning techniques, a favored pedagogy in the library’s on-campus curriculum. Most of this lesson involves students completing activities, which include creating keyword grids for an upcoming Argumentative Paper assignment and conducting searches for ebooks and articles based on the keywords they develop. A reflective prompt was also included, encouraging students to talk through what they learned by completing
these activities. Unlike the Ethics in the Professions module, the CREW I information literacy module was taught by the instructor of record from the start, even while it was technically in pilot. Ongoing communication with the instructors who teach this course has been important both for moving it out of pilot and for monitoring its ongoing success. Faculty display a sense of ownership and expertise with this content just as they do with other portions of the course and demonstrate comfort with teaching and grading it.

The Online Information Literacy Program Takes Shape

With two information literacy lessons already present for many students in their CPS undergraduate curriculum, one early in the academic progression, CREW I, and one relatively late in the academic progression, Ethics in the Professions, the next step was to develop lessons that fit into the middle of a student’s academic progression and created additional opportunities for transfer students. Two classes are targeted at this stage of the information literacy program: Intercultural Communication & Social Interaction/Digital Age. Levering the range of experiences a student is going to bring at this midpoint in the curriculum, both of the lessons focus on how students create and interpret information in personal, academic, and professional contexts.

Bringing What Works On-campus to the Online Sphere

In the on-campus information literacy program, Champlain College librarians teach two lessons that focus on how students consume and create information. The theory of filter bubbles, taught as part of one freshman year on-campus lesson, was identified as an important and eminently translatable topic to teach online students. The Intercultural Communication information literacy module was originally developed around Eli Pariser’s TED Talk “Beware online ‘filter bubbles’” along with a discussion of its implications in their own information consumption habits. To wrap up that module, a small part of a sophomore year on-campus lesson was incorporated into this new lesson, specifically having students draw a digital selfie in which they visually demonstrate the information they do and do not share about themselves online.

Upon presenting this lesson to the Dean of CPS, she was interested in the learning outcomes but was unsure if Intercultural Communication would be the right fit. Instead, she proposed incorporating the lesson into Social Interaction/Digital Age. While Social Interaction/Digital Age is taken by fewer students than Intercultural Communication, this move will result in the lesson being taught to an audience already exploring closely related topics, and it allows for the lesson to continue development should an opportunity emerge in the future to place it into a class with a larger reach.

This information literacy module will be piloted in Social Interaction/Digital Age for the first time in Fall B 2017. In this pilot, the instructor of record and a librarian will team teach the lesson, allowing the instructor to provide input on how the module fit into the broader curriculum and the librarian to gain an understanding of how online students react to the lesson in order to write support documentation.
A Lesson Developed during ACRL Immersion

In Spring 2017, the Digital Learning Librarian was a participant in the Association of College and Research Libraries (ACRL)’s Immersion program on the Teaching with Technology track. Through the course of this program, a new information literacy module more appropriate to the curriculum in Intercultural Communication was developed. In this lesson, students look at one or more information objects on women in the workplace from different post-World War II time periods in the United States. Then, through a guided discussion, students reflect on the perspective that their information source offers and the perspective their source lacks. Students compare the source they read to sources other students read, and they conduct outside research on the topic to build a better rounded and more nuanced understanding of the topic. The goals of this lesson are to teach students synthesis, analysis, and evaluation skills.

With the full support for this lesson from the Dean of CPS, this lesson will be piloted in Fall B 2017 in two out of five sections of the class. Similar to Social Interaction/Digital Age, this module is being team taught by an instructor and a librarian.

Future Pilots

A short lesson has been developed for CREW II focused on information evaluation in the context of source type, and there are plans to conduct a pilot in 2018. There has already been some collaboration between the library and CREW II faculty related to connecting students with library resources and tutorials, and piloting an information literacy module will be the next step of this partnership. CREW II is taken by all students who take CREW I, but it is also taken by many students who are able to skip CREW I due to transfer credits, making it an essential cornerstone for reaching a wide swath of students for a structure information literacy program.

There is also a proposal for an information literacy module in the upper-division course Writing in the Workplace. This proposed lesson, focused on searching for Creative Commons and public domain images for professional communication projects, will reinforce search and evaluation skills taught in the CREW courses (and provide them for the first time for students able to skip them) while also introducing instruction around copyright and attribution as relevant to the professional world.

Impact of Program on Students and on Library Faculty

Student Reach

This information literacy program has allowed the Champlain College Library to reach students in CPS undergraduate programs without devoting the staff time to teaching synchronous lessons. In the Fall B 2017 Term, 155 students were enrolled in course section in which an information literacy module was present. When it comes to the course wherein the library has had a presence the longest, Ethics in the Professions, 518 students have been enrolled in a section of that course in which an information literacy module was taught between Spring B 2015 to Fall B 2017. Meanwhile, 140 students were enrolled in a section of CREW I in which the information literacy module was taught between Spring B 2017 and Fall B 2017.
The asynchronous nature of these modules means that students can access them for review at any point during their seven week class session. Unless a student skips the embedded assignment entirely, they have multiple opportunities for exposure to and review a course’s information literacy instruction. Compare this with the face-to-face lessons taught on campus and the online, synchronous sessions occasionally taught in graduate courses in which students are only exposed to the content once.

**Efficiencies for the Library**

While developing an online information literacy module might be time-intensive initially, a stable lesson does eventually create efficiencies with staff workload, specifically around the instruction session. In Fall B 2017, seven course sections in CPS contained information literacy modules but were taught by faculty of record. If a librarian had been embedded in those sections, it would have been much more difficult to allocate staff time to the two pilot courses at the same term. Further, the courses with information literacy modules taught by instructors of record had, between them, three more section offered in Fall B 2017 than were offered in Fall A 2017, which might have necessitated last minute training or job duty changes. Because of the flexible information literacy modules, a variable number of students can be taught each term with minimal changes in librarian workload.

**What is Still Missing from this Program?**

**Programmatic Assessment**

Most assessment of this program thus far has either considered the program’s general impact or constituted more informal review as part of the pilot process. It is essential to develop a summative assessment program for online undergraduate students similar to the assessment program in place for their peers studying on campus. Multiple assessment options are currently under consideration.

*Student learning outcomes assessment pegged to instructor grading.* Canvas allows for the creation of outcomes that can be linked to individual components of rubrics (“How do I align,” 2017). These outcomes might exist for an individual course, for a sub-account, or for the entirety of an institution’s account (“How do I create,” 2017). This simple utility would allow the library to view students’ average grades on a rubric entry relative to a learning outcome across multiple classes. Champlain College Library already uses a developmental information literacy rubric for assessment purposes (“Technology & information literacy,” 2014). Champlain College Library could turn entries from that document into account-level outcomes and link them to several rubrics in the CPS undergraduate curriculum. If that approach were used, a passing score on a synthesis rubric entry for a research paper might indicate an Emerging level competency on the learning outcome Interpreting and Using Information (“Technology & information literacy,” 2014). This data set would be particularly relevant for longitudinal assessment across students’ academic careers.
Librarian-led assessment of student artifacts. Champlain College Librarians already conduct assessment of student artifacts for the on-campus information literacy program in the Core Division (Carbery & Leahy, 2015, pp. 74-76). This librarian-led assessment analyzes how a representative sample of students meet information literacy competencies using a developmental rubric (Carbery & Leahy, 2015, pp. 75-76). This method of assessment informs instructional design and redesign efforts (Carbery & Leahy, 2015, pp. 85-86). The library could adapt the same basic approach to analyzing the information literacy skills of CPS undergraduate students. The major limitation would be staffing, as this would increase the number of artifacts librarians assess in a given year. It is important, though, to have a full understanding of online students’ information literacy skills during the continued development of the online information literacy program. Thus, it might be possible to allocate staff time to that purpose, especially in light of the amount of staff time that the current program saves.

Major-specific Information Literacy Instruction

Identifying the demand for information literacy modules in major-specific courses will play an important role in later stages of this program. Currently, only one course, Social Interaction/Digital Age, primarily targets students enrolled in specific majors (the B.S. in Web Design and Development and the undergraduate certificate in Organization Development, though it is also available as an elective). Based on reference questions and discussion with the major’s Program Director, Business Administration students have been identified as another population potentially in need of major-specific information literacy instruction. Developing one or more information literacy lessons for students enrolled in such classes will increase the scope and impact of the program and perhaps provide the chance to reach any students who bypass the liberal studies curriculum entirely.

Future Directions for Research and Practice

Designing an online information literacy program with program-level assessment in mind is one area worthy of further research and experimentation. Learning management systems provide powerful affordances in assessing program-level outcomes based on faculty of record grading of student work. An online information literacy program might be built around these tools, articulating each criterion on each assignment rubric to a program learning outcome. Such an approach might disrupt the more informal instructional and curricular design process discussed in this paper but would create great benefit to the librarian with clearly defined program learning outcomes who is using an instructional design technique such as Backwards Design.

While this program is designed around reusable learning objects exclusively, there is also a need in the literature for further comparative research related to identifying the best modality for teaching specific information literacy concepts online to specific populations. Case studies or research projects that compare multiple approaches to teaching information literacy online (reusable learning objects, synchronous online sessions, embedded librarians, etc.) either across institutions or at the same large institution would provide evidence so that librarians could choose the right technique for a desired outcome.
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Showing Students We Care: Using Empathetic Marketing to Ease Library Anxiety and Reach Distance Students

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Abstract

Marketing to distance students can be particularly challenging, but a new marketing trend called empathetic marketing provides academic libraries with a new and innovative way to reach these students. Empathetic marketing focuses on the core emotional needs of students and demonstrates how the library’s staff and services can help meet those needs. This article explores how using empathetic marketing in outreach efforts to distance students builds a connection between the library staff and distance students and can help alleviate library anxiety for distance students.

Introduction

Empathetic marketing—showing users how a company can meet their core emotional needs—is the latest marketing trend. When libraries use empathetic marketing to demonstrate how library services and staff can meet students’ emotional needs, it helps students feel more connected, shows them that people know and care about what they are experiencing, and lets them know that library staff can help them in a variety of ways. While all college students have similar needs, distance students have some unique experiences, feelings, and needs. Using empathetic marketing to reach distance students demonstrates to them that library staff know about these needs and can help meet them. Since this is a fairly new concept in marketing, little has been written about using empathetic marketing in a library context. This article will discuss ways libraries can adapt empathetic marketing in a library setting to reach distance students.

While outreach to all students is an ongoing effort, academic librarians are continuously looking for new ways to reach out to and connect with distance students. Distance students decide to take online programs for many reasons; convenience and time constraints being only two of those reasons. Most distance education students are also juggling jobs, families, and a myriad of other demands on their time and attention. Marketing efforts to distance students should stand out and really grab their attention. Marketing to distance students can be particularly challenging because these students are rarely, if ever, on campus. Not only does empathetic marketing provide a unique way of reaching students, it shows students that library staff genuinely care about them, their success in school, and the other things that are going on in their lives. Seeing how much library staff care and discovering the library resources and services that will help them succeed in their academic endeavors can also ease their apprehensions about asking library staff for assistance. Showing that library staff sincerely care about students can be a valuable way to help alleviate library anxiety for distance students.
What is Empathetic Marketing?

Mark Ingwer (2012) has laid the groundwork for this latest marketing trend in his book “Empathetic Marketing: How to Satisfy the Six Core Emotional Needs of Your Customers.” According to Ingwer, empathetic marketing is essentially showing people how a company and its products and services can meet their core needs as outlined in Maslow’s Hierarchy of Needs: physiological, safety, belonging/love, esteem, and self-actualization. Not that one marketing piece speaks to all of the core needs, but focuses on one or two at a time. This shows customers that the company is providing services and products that will meet their core needs. It is not about getting customers to use the company’s services, but about helping them see how the company’s products and services make their lives easier or help them be better versions of themselves—about connecting with customers on a deeper and more emotional level. Showing that the employees know the customers, know what they need, and care about making sure their needs are met in ways that make sense for the company. In his explanation of the importance of empathetic marketing, Ingwer states:

I contend that emotions and resulting behaviors are the foundation for satisfying complex psychological needs. Our individual well-being—self-esteem, success, relationships, and happiness—is a result of our meeting emotional needs. An individual’s needs are satisfied when he or she is connected meaningfully to others, and through those connections comes to find his or her own unique value and identity. It is a ceaseless, evolving, lifelong endeavor. Needs are at the root of our triumphs and setbacks in our personal lives, and as we’ll see time and time again, they also affect many of the consumer decisions that fuel commerce. The central premise of this book is that businesses must have an intimate and conceptual framework for understanding these emotional needs and a passion for meeting them at every step of the way. (p. 2)

Sometimes people are unaware of how much of an impact their emotions, feelings, and needs have when making decisions and in how they view themselves and others around them. Libraries can easily incorporate emotional needs into their marketing strategies. By showing students that library staff and resources can meet their needs in ways they may not even realize, library staff are demonstrating an understanding of students and their needs and showing a vested interest in their academic success. This builds a connection between the students and the library staff.

To understand and properly utilize empathetic marketing, one first must understand empathy. According to Hoffman (1984), “Empathy has been defined in two ways: the cognitive awareness of another person’s internal states (thoughts, feelings, perceptions, intentions), and the vicarious affective response to another person” and “. . . in empathy, one reacts affectively to events impinging on someone else” (p. 103). In other words, empathy is knowing what people are experiencing and reacting to those experiences and feelings. Kemp, Bui, Krishen, Homer, and LaTour (2017) explain empathy as “an other-focused emotion which involves attempting to understand the plight of others through perspective taking” (p. 91). True empathy can only be expressed by understanding (or trying to understand) the feelings and experiences of others. Academic librarians know what it is like to be a student, and how much stress and pressure there
is at different times during the semester. Incorporating those experiences and feelings into marketing efforts is what empathetic marketing is all about.

Moving library marketing to a more user-centered and empathetic approach helps build a better and stronger connection between the library staff and the students, and shows that the library staff cares about students and their success. “Too many companies create corporate-centric, rather than customer-centric, content. The former is about you; the latter is about what you do for your customer—a subtle yet critical shift” (Handley, 2013, p. 70). Marketing the library’s services to distance students should be more about how the resources and services improve their lives and assist with their coursework, not about increasing usage statistics. Focusing on users also shows a concern about them and their success as students. Making this shift towards being patron-centric allows the library staff to see how the library’s resources and services can be most beneficial to students.

Because empathetic marketing focuses on the patron or customer, marketers must really understand their users to create effective empathetic marketing strategies. This deeper understanding not only facilitates empathy, but it also builds a deeper connection between entity and customer. When customers start to feel and realize this deeper connection, they will trust the entity more. According to Handley (2013), some companies have found success in using marketing pieces to answer questions rather than to push products, and by doing so show a deeper understanding for what the customers really need. This can be a great way for libraries to reach distance students through empathetic marketing—answering their questions about the library and its services. By being proactive and answering these questions before students even realize they have them, library staff are showing an understanding of the students, what they need, and what will help them most in their academic endeavors.

In “No Empathy, No Service” (2013), Tripp describes how to start thinking about marketing from a more empathetic viewpoint.

First and foremost, you have to reframe the way you see the people you serve—stop calling them your target market—or any name that turns them into a statistic or a bullseye. Instead, consider them to be people: the people you hope to serve, your stakeholders. That reframe alone opens your eyes and leads you into a different type of engagement with them. (p. 62)

In higher education, it becomes really easy to think of students as numbers or as groups, but to effectively utilize empathy in marketing efforts it is essential to re-humanize the students. It is important to remember that they are single parents working on homework after their children go to sleep; they are working multiple part-time jobs and going to school part time so that they can get a better, full-time job; that they are young twenties out on their own for the first time and trying to figure out adulthood while taking classes. Showing them how libraries and library resources can make their lives easier is important in reaching them and helping them succeed.
Core Needs of Distance Students

There are several ways that libraries can help meet the emotional needs of distance students. While some of the needs in the hierarchy seem more relevant at some times more than others, all of the needs eventually need to be met (Ingwer, 2012). Libraries can start their empathetic marketing efforts by focusing on the more prevailing emotional needs of distance students and then move to some of the lesser or less urgent needs. Addressing the more urgent needs will give students a sense that all of their needs are being met and will also show them that library staff are in tune with what distance students need most.

One of the prevailing emotional needs of distance students is esteem. While one could argue that esteem is a core need for all, it is particularly relevant for distance students, because they are developing new skills, acquiring knowledge in a field of study, trying to excel in their coursework, and interacting in an online environment. Esteem is considered a major emotional need that is interrelated with the other needs in the hierarchy and affects many aspects of how people relate to others and make decisions. Ingwer (2012) explains that:

the potential ‘big three’ of emotional needs—relatedness, autonomy, and competence—drive human behavior. We simultaneously need to be closely connected to others, maintain our uniqueness and individual control over events, and feel like we have our wits about us to make things happen. Those three needs satisfied together typically result in the list-topping need: higher self-esteem. (p. 29)

Self-esteem plays a large role in the need of esteem, but is only one of the pieces. Francis (2010) explains that esteem “is addressed through self-esteem, confidence, achievement, respect of others, and respect by others” (p. 142). She goes on to explain that:

Esteem can take several forms in the library. For some patrons, the importance of the library is seen in the respect they are shown by the library staff. . . The library is also a place for patrons to increase their knowledge, which will correspond to an increase in self-esteem. Also, through the use of the library, patrons develop confidence in the skills necessary for research, such as performing a search in a database or evaluating a source. (p. 142)

When reaching out to distance students with empathetic marketing, a focus on showing students how to effectively use library resources will target the emotional need of esteem. Demonstrating a respect for distance students can also impact the esteem of the students as well as develop a deeper rapport between the library staff and distance students.

Another major emotional need for distance students is self-actualization. Ingwer (2012) defines self-actualization as the “realizing of full potential” (p. 31). Part of realizing one's full potential sometimes involves life-transitions and personal growth. All students are in a point of transition in their lives. Most people begin a degree program because they want to better their life or make a change in some way. “Look for opportunities in life transitions. People are constantly redefining themselves, especially when transitioning to new life phases. They are
looking for ways to express their new selves” (Ingwer, 2012, p. 97). Therefore, this emotional need of self-actualization or personal growth would be a key way to reach all distance students.

Because growth in many ways relies upon both personal strength and social support, it is arguably the most difficult need to satisfy. It is the product of successfully balancing the needs along the continuum. Growth is our need to positively evolve our abilities, competencies, and attitudes in an attempt to better realize our best self. The need is satisfied through intrinsic motivation, meaning, to grow toward our ideal selves, we have to first imagine who that ideal self is, and take the necessary steps toward achieving that self. (Ingwer, 2012, p. 104)

In most cases, students are taking classes in order to better themselves in some way. Empathetic marketing can highlight for students how the library’s resources and services could help them in this season of growth and self-actualization.

The need for belonging is another core need for distance students. Because of the nature of online learning, it is very difficult for distance students to build connections with others in their classes and to foster a sense of community, to truly feel like they belong. Students who are new to the online education environment often feel like everything is foreign and new. “…imagine what it would feel like if everything in the world felt foreign or alien…Feeling invisible is among the psychologically most desperate predicaments in which a person can find him- or herself” (Ingwer, 2012, p. 132). Librarians can help ease that feeling by assisting students in learning how to navigate in the online environment and with the online library resources. Feeling connected to the college community is a large factor in student retention and success. Finding ways to help students feel more connected and like they belong “can help [them] avert the distress of feeling alienated” (Ingwer, 2012, p. 159). Another factor that could contribute to distance students not feeling like they belong is that “many distance students assume that they do not have equal access to services and resources because of their location and/or status, and an active marketing campaign is required to increase their awareness and usage of library services” (Bonella, Pitts, & Coleman, 2017, p. 83). Using empathetic marketing to help students discover library services and resources available to them (and all students) can emphasize the fact that they do belong and have the same access as all other students at the institution.

Addressing the needs of distance students through empathetic marketing demonstrates that librarians are concerned about the whole student, and not just about their academic success. Francis (2010) describes the importance of focusing on the student as a whole to help them succeed.

We cannot let ourselves become obsessed solely with providing information literacy instruction to students. We must focus on the student as a whole individual. This requires time and energy focused on addressing their needs beyond the time we see them during instruction sessions. This places importance on topics such as library anxiety, the library as place, and user experience. By looking to Maslow’s Hierarchy of Needs and working with the whole student, we will be able to reach them and aid their development into information literate individuals. (p. 142, 159)
Librarians cannot only be worried about students finding the information they need. That might be the students’ lowest priority. Library staff need to show students that they genuinely care about the students’ success and that they understand that students have a lot more going on than just coursework.

While the standards of an information literate student can be seen within self-actualization, we must consider the varied and hierarchical needs of students. We cannot address information literacy in isolation. Therefore, in instruction and daily interaction with students, we must also give attention to their more basic needs, for it is only after the fulfillment of those needs that an individual can focus on those skills required for information literacy. (Francis, 2010, p. 140)

**Alleviating Library Anxiety of Distance Students**

The needs described in Maslow’s Hierarchy of Needs correlate with the feelings and emotions behind library anxiety. In her article about library anxiety, Mellon (1986) describes that “Further examination of the data indicated that students’ fears were due to a feeling that other students were competent at library use while they alone were incompetent, that this lack of competence was somehow shameful and must be kept hidden, and that asking questions would lead to a revelation of their incompetence” (p. 163). The study also indicated that “a feeling of inadequacy in comparison to others can cause a continuing incompetence when students do not ask questions because they fear revealing their ignorance” (p. 163). The findings of this study show that one of the main underlying fears driving library anxiety is related to students seeming or feeling incompetent. This fear directly relates to the needs of self-actualization, esteem, and belonging. If students feel that they are incompetent, especially in comparison to others in their class, this will affect their view of self and their sense of belonging with the group. By helping alleviate these library anxieties, librarians are also meeting some of the hierarchy needs. Mellon (1986) found that the best way to alleviate library anxiety is for librarians to build a connection with students. In her study, she found that librarians “were unaware of the importance students placed on ‘getting to know the librarian’ and ‘realizing those people really want to help me’” (p. 164). Showing empathy to students is one of the best ways to build that connection and, in turn, alleviate some of their library anxiety.

Some library anxiety for distance students may also stem from the need for safety. While distance students may be comfortable using online software and resources, communicating online can sometimes create anxiety, especially when asking for help. In their study of students who are non-library users, Connaway, Radford, and Dickey (2007) found that students are apprehensive about asking for help through the chat or instant message service because they are unsure of who they will be communicating with. Some of the non-users expressed that “chatting with an unknown person might ‘creep them out’” (p. 26). They also discovered that “personal relationships with librarians emerge as important” (p. 26) in students’ comfortability with using the chat or instant message service. All of these insights reiterate the importance of building relationships and deeper connections with distance students. Having that connection and relationship will help students feel less anxious or apprehensive about asking for help from the library staff when they need it.
The “big three” emotional needs mentioned earlier (relatedness, autonomy, and competence) are also closely related to the main causes of library anxiety for all students. Because students do not want to seem incompetent, they might be hesitant to ask questions, especially in an online environment where all the students in the course will see their question. Since it can also be difficult to build connections in an online environment, distance students will be hesitant to do anything that might jeopardize their reputation or an opportunity to connect with someone in their class. By providing ways for students to ask questions anonymously or privately, librarians can help alleviate some of the anxiety about asking for help. The librarians can also use the questions posed privately to fuel future outreach—answering the questions before they are asked. Addressing aspects and causes of library anxiety in a general way (not connected to a specific person or query) may show distance students dealing with library anxiety that they are not alone in their feelings and that the anxiety should not deter them from seeking assistance. Mellon (1986) discovered that, “The literature indicates that acknowledging the anxiety and its legitimacy, and then providing successful experiences to counteract the anxiety, is the most effective method for treatment” (p. 163). Discussing library anxiety and creating conditions that will ease the anxiety will help library staff build a rapport with distance students and demonstrate empathy towards them and their anxiety.

Empathetic Marketing in Libraries

How can academic libraries start incorporating empathetic marketing? The good news is that many libraries are probably already using a bit of empathetic marketing in their efforts. An easy first step is to consider how students might be feeling and what they might be experiencing during specific points in the semester; acknowledge those feelings and experiences; and show students how the library staff, services, and resources can assist them during those times. For example, a library might highlight reference consultations during a time in the semester when students are working on research assignments. A simple post such as, “Feeling stressed about a research assignment? Working on multiple research assignments and not sure where to start? Make a research appointment with a librarian. The librarian can help you get started and point you towards resources that will be most helpful.” Acknowledging the stress and the anxiety of not knowing where or how to start can go a long way in building a connection with distance students. Reaching out to them at their point of need can show them that library staff want them to ask for help and are willing to assist.

Some libraries are already utilizing empathetic marketing to reach their students. According to Neuhaus and Snowden (2003), the library staff at Rod Library at the University of Northern Iowa recognized the need to focus on the student instead of the resources during their instruction sessions, so they focused more on librarian-student interaction and less on the functionality of the resources. “The goal of these revamped orientations was to convince incoming freshmen that their information needs could best be met by utilizing library resources. The message was made succinct—by using the Rod Library you will decrease your frustration and increase the quality of your efforts” (p. 195). They also use the phrase “Make your life easier” on all of their promotional items (p. 197). The Rod Library staff focused more on the core needs of their students and emphasized that the library staff want to help and want to ease stress for the students.
Conclusion

By moving to a more user-centered focus such as empathetic marketing, library staff demonstrate to students that they care about the students and their academic success. Building this deeper connection with students through empathetic marketing can also alleviate some library anxiety and encourage students to ask for assistance as needed. Connection is extremely important when working with distance students. The article “How to Reinvent Marketing and Make It Noble Again” (2012) emphasizes the role that empathy plays in building this important connection, by explaining that “ultimately, you have to let empathy, intuition and authenticity drive you. Without them, you will have no real connection to the people you serve as a marketer” (para. 18). While empathetic marketing is a new trend that has not yet been adopted by many academic libraries, its impact on student success and interaction with the library staff and resources makes it a valuable tool for reaching distance students.
References


Mortal or Moodle? A Comparison of In-Person vs. Online Information Literacy Instruction

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Abstract

The purpose of this study was to evaluate the efficacy of online and in-person instructional methods for teaching research skills, as well as to determine student preferences for each method. Undergraduate students received librarian-led research skills instruction either through an online course management system or in person at the library. Students were surveyed about their experience and format preference, and their grades on a subsequent literature review assignment were collected. The online group’s scores were significantly (p=0.002) higher, and a majority of eligible participants stated a preference for the online format. Many of the students in both groups reported increased skills and confidence in conducting speech-language-hearing science research following the library instruction. The results of this study support the possibility that online instruction may be more effective than in-person for improving performance on a literature review assignment and is preferred by on-campus students for learning information literacy skills.

Introduction

Students enter a classroom with an attitude towards learning shaped by previous experiences and expectations. This is true for the online classroom, too. For some students, learning online might present real or perceived challenges that require extra effort to overcome; for others, the virtual classroom could be a welcomed change of pace. Both groups will need to adapt to the environment in order to succeed in the increasingly digital world. Professionals who are required to complete continuing education activities could find that much of that learning is facilitated online; therefore, all students, even those who take the majority of their classes face-to-face, could benefit from exposure to that environment. Furthermore, librarians and faculty should study not only the academic performance of students online but also their attitudes towards it.

This study is focused specifically on undergraduate speech pathology students. Practicing speech-language pathologists have unique information-seeking needs that could be addressed with information literacy instruction. The American Speech-Language-Hearing Association
(2016) includes information literacy in its *Standards and Implementation Procedures for the Certificate of Clinical Competence in Speech-Language*. These guidelines require that “the applicant must have demonstrated knowledge processes used in research and of the integration of research principles into evidence-based clinical practice” (Standard IV-F, para. 1), which includes assessing and applying research in practice. This standard suggests that a strong foundation in information literacy needs to be established in the undergraduate curriculum; however, Nail-Chiwtetulu and Ratner (2007) and Betts (2015) observed that professional speech-language pathologists lacked the necessary information literacy skills to consult scholarly literature. Library instruction in the speech-language-hearing sciences curriculum should prepare future professionals by incorporating advanced information-seeking strategies, such as locating and evaluating resources found online. The researchers implied that continuing education programs for professionals should include an information literacy component, and that librarians could fulfill that role. Some professionals could opt to participate in continuing education webinars or virtual workshops, and participating in online learning as a student would prepare them for that. Silk, Perrault, Landenson, and Nazione (2015) suggested that the instruction environment try to mirror the environment learners will be practicing within, so preparing future speech-language pathology professionals to be successful and independent online learners could benefit them in their careers.

Online learners meet learning outcomes and can transfer research skills from the online environment to their own research process. When online students and face-to-face students received similar instruction in their respective environments, they generally performed equally on assessments (Anderson & May, 2010; Brettle & Raynor, 2013; Greer, Hess, & Kraemer, 2016; Lantzy, 2016; Mery, Newby, & Peng, 2012; Nichols, Shaffer, & Shockey, 2003; Silk, Perrault, Landenson, & Nazione, 2015). Silk et al. (2015) observed that learners in both groups demonstrated an understanding of empirical research while the online learners were more likely to correctly locate and identify empirical research. The researchers posed that this result is due to the fact that students watched a video about finding empirical research and then instantly applied that skill in the library databases, whereas face-to-face students do not always have that immediate opportunity. Brettle and Raynor (2013) agreed that the availability of an online tutorial could reinforce new skills and help students practice using the online databases.

Researchers are also interested in whether or not online students feel as confident in their learning compared to their face-to-face peers. Silk et al. (2015) compared self-reported self-efficacy levels of students who completed online modules to those of students who received face-to-face instruction and found that both methods increased the students’ perception of their own skills. Churkovich and Ooughtred (2002), however, observed that online learners experienced a decrease in feelings of confidence around their research skills; but these students were isolated from reaching out to a librarian for help during the instruction. The majority of respondents to Ismail’s (2016) survey of students indicated that they least prefer online learning, but the author admitted that these students were not actively engaging in online learning and could have little context for it. Ismail suggested that students should be educated about the benefits of online learning and that librarians make an effort to be present in the online classroom. A learner’s level of technical proficiency could also influence their confidence in engaging with online learning objects (Chen & Williams, 2009).
One aspect of online learning that students do prefer is the independent and self-paced nature of it (Johnston, 2010; Zhang, Goodman, & Xie, 2015). In a 50-75 minute face-to-face, one-shot instruction session, a librarian sets the pace of learning and scaffolds concepts and skills for the learner. In the online environment, students can move between modules and watch videos repeatedly; online students can also revisit modules to review strategies when attempting their own research (Silk et al., 2015). In survey responses students indicated that online tutorials helped them with future assignments (Johnston, 2010), perhaps because they could return to the modules at their point of need.

A potential option for on-campus students is blended instruction methods that combine elements of face-to-face instruction and online learning (Churkovitch & Oughtred, 2002; Kraemer, 2007). In a blended course, students complete activities online or watch videos and then attend a workshop. This approach appeals to learners who prefer a variety of learning objects and to work at their own pace. Investigations of student learning preferences revealed that some learners will choose to engage with a combination of auditory, visual, and textual objects, and time online as well as in the classroom could provide that variety (Ismail, 2016; Jackson, 2014; Johnston, 2010; Zhang, Goodman, & Xie, 2015). Zhang et al. (2015) incorporated elements of a flipped classroom approach into their library instruction. Students independently completed online modules and could receive help from librarians at face-to-face workshops; in future semesters, the face-to-face workshops were mandatory, which allowed students to become comfortable with the material independently while still providing hands-on time.

This study attempted to reveal how students’ attitudes and research performance are influenced by moving learning online while still providing ample availability to assistance from librarians, in-person or virtually. Specifically, it investigated how students who are enrolled in a face-to-face class responded to virtual library instruction, compared to their peers who received entirely in-person library instruction. Research performance was measured by scores received on a literature review assignment, while attitudes were measured with a survey created by the researchers. The literature review assignment score was deemed an appropriate measure of research performance because the grading rubric used by the instructors to assess the assignment included elements that correspond to skills learned in library instruction. The goal of this study was to illuminate the strengths of delivering instruction online and in-person so that librarians can design instructional materials that align with students’ learning styles and preferences. While many studies about online learning involve only distance students, this study assessed on-campus students’ perception of online learning. The results will allow librarians in a variety of settings to provide better service to both traditional distance learners and on-campus learners who may prefer an online-learning format for library-related content.

Method

Participants

The participants in this study were a total of 38 undergraduate students (18 years of age or older) at a mid-sized (5,099 student FTE), private university. All participants were completing their academic program on campus. All participants received library instruction and completed a
literature review assignment for a grade as part of their regular coursework in a semester-long university course. Out of the 38 participants, 28 completed the research survey.

**Materials and Procedure**

Prior to the start of the research project, participants enrolled in one of two sections of an upper-level undergraduate professional writing course, taught by different instructors from the speech-language-hearing sciences department and offered in-person at the main university campus. The primary element of the study, investigating the effect of library instruction method on literature review quality, involved all participants. One section \( n = 14 \) received the traditional one-hour library research instruction session from a librarian in a library classroom, while the other section \( n = 24 \) received similar instructional content online through Moodle, the course management system utilized by the university. For the rest of the paper, the first section will be referred to as the in-person group while the second section will be referred to as the online group. Library instruction occurred towards the beginning of the Spring 2017 semester. At the end of the semester, all students completed a literature review assignment, and the instructors shared anonymized grades for this assignment with the researchers.

The library instruction contained content in the following areas: distinguishing between different types of sources (such as scholarly article, magazine article, etc.), forming a research question, identifying appropriate keywords from the research question, conducting database searches with correct usage of Boolean operators and effective usage of limiters such as publication date, distinguishing between primary and secondary research, constructing correct APA-format citations, conducting cited reference searches, and utilizing more than one database to retrieve articles. The in-person group received the instruction synchronously in a library classroom and worked through practice exercises and activities during the class session. The online group received the instruction asynchronously and completed exercises and activities that they submitted in Moodle and which were subsequently graded by the librarians. See Appendix A for additional details about the content and format of the library instruction.

The secondary element of the study, determining students’ perceptions of and preferences for online versus in-person instruction, involved a subset of the participants. Four to eight weeks after receiving the library instruction, students were given a brief electronic survey to measure their self-reported skills and confidence in conducting speech-language-hearing science research compared to before the library instruction. Participants who had received in-person library instruction in a previous course were also asked which instruction method they preferred. The researchers created the survey and the course instructors distributed it to their students. Completion of the survey was anonymous, voluntary, and in no way affected the students’ course grades. Eight participants who had received in-person library instruction completed the survey \( (57\%\text{ response rate}) \), and 20 participants who had received online library instruction completed it \( (71\%\text{ response rate}) \).

**Results**

Due to the small sample size and the anonymization of the literature review scores, our statistical analysis was limited. The literature review scores between the in-person and online
groups were compared using a two-tailed t-test for independent means. There was a statistically significant ($p = 0.002$) difference between the scores of the two groups, with the online group’s scores being higher. Table 1 contains descriptive statistics of these grades. A post-hoc power analysis using the means, standard deviations, and sample sizes of the two groups yielded a finding that this t-test had 87.4% power. In other words, we only had a 13.6% chance of not finding a difference when in fact there is one. Power calculations are more effective when conducted prior to recruiting participants, but we were not able to do so because we had no control over the number of students enrolled in the course.

Table 1

<table>
<thead>
<tr>
<th>Literature Review Assignment Scores (out of 100)</th>
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<tr>
<td>Group</td>
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<tr>
<td>Online</td>
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<td>In-Person</td>
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The remainder of the results are mainly descriptive, coming from the survey responses. A majority (85.0%) of students in the online group reported attending at least one other library instruction session in prior semesters, and 35.0% reported attending three or more sessions previously. In the in-person group, 100.0% had attended at least one previous library session, with 50.0% reporting three or more previous sessions. This variable is another factor besides library research training that may have influenced literature review performance as well as students’ attitudes towards library instruction. As a whole, the online group explored a wider variety of online literature databases in completing their literature review assignment. Out of a list of ten databases, nine were used by at least one online group student, while only five were used by at least one in-person group student. See Table 2 for a list of the databases that were used.
A primary aim of the survey was to measure students’ self-assessment of their skills and confidence in conducting speech-language-hearing sciences research compared to before the library instruction. In the online group, eight students (44.4%) reported that their skills were either “somewhat better” or “much better” following the library instruction, while nine (50.0%) reported that their skills were “about the same.” Only one (5.6%) student reported that their skills were “somewhat worse” after the library instruction, and none reported that their skills were “much worse.” Seven (87.5%) students in the in-person group reported “somewhat better” or

<table>
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<th>Number of Participants</th>
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</tbody>
</table>

\(^a\)Seeker is the library’s discovery tool, powered by EBSCO Discovery Service.

Table 2

**Self-Reported Databases Used in Completing the Literature Review Assignment**
“much better” skills, with one (12.5%) “about the same” and no “somewhat worse” or “much worse” responses. The distribution of responses was almost exactly the same for the question that asked students to report their confidence in conducting speech-language-hearing sciences research compared to before the library instruction. The only difference was in the online group, where there were no responses of “somewhat lower” but one (5.6%) response of “much lower” confidence.

Lastly, the survey asked those students in the online group who indicated receiving in-person library instruction in previous semesters to state their preference for the in-person or the online format. Out of 16 students who responded to this question, two were not qualified to answer because they reported no previous library instruction. Of the remaining 14 respondents, only one (7.1%) preferred the in-person format while the majority (92.9%) preferred the online material. When asked to comment on their preference, students gave a variety of reasons. The major reason given for preferring the online format was that the students could complete the instruction at their own pace and at their convenience, with the ability to stop and start as opposed to completing it all in one sitting. The student who preferred the in-person format indicated that they liked having hands-on support from the librarian while completing practice exercises.

Discussion

While this study produced interesting results, due to the design and sample size limitations it is best viewed as a pilot project that should stimulate further research. The statistically significant difference between the literature review grades of the online and in-person groups suggests that the online format may be more effective for library research skills instruction, but there were many potential confounding factors. We could not control for variations in the instructors’ application of grading rubric criteria in assessing the assignments, additional research support the students may have received over the course of completing their assignment, or any other potential influences. However, that finding is still compelling in light of the result that a majority of students who had experienced both instructional formats preferred the online method. Perhaps being able to engage with and complete the material at their own pace and convenience, the main reason these students gave for this preference, led to greater comprehension and absorption of the skills being taught. This possibility is also supported by the conclusions of Johnston (2010) and Zhang et al. (2015). Future studies could investigate the effect of instruction format not just on overall literature review scores, but also on performance in the specific elements of the rubric that correspond to skills taught in the library instruction.

Further supporting this suggestion is the finding that the students in the online group reported using a wider variety of databases in conducting research for their literature review assignment than the students in the in-person group. This result could indicate that the online library instruction made students more aware of all the databases available, or perhaps increased their confidence in using unfamiliar databases to a greater extent than the in-person students. If that is the case, then it is somewhat contradictory that a greater percentage of the in-person students reported increases in their skills and confidence than the online students. One potential influencing factor is that online students had continuing access to the instructional content for the remainder of the semester, enabling them to review the materials again at any time. Students in
the in-person group received a printed handout at their class, but if they lost or disposed of that they had nothing to refer back to later. We did not collect data on this continuing access to instructional materials, but that would be an illuminating data point for future studies.

It was encouraging to find that nearly all of the students who completed the survey reported increased skill level and confidence in conducting speech-language-hearing sciences research following the library instruction. This finding suggests that library instruction regardless of method is useful to students, in accordance with the conclusions of Silk et al. (2015). The only student who reported reduced skill level and confidence was in the online group. It may be that the student was confident about their skills going into the library instruction, but when they encountered the material realized they did not know as much as they thought they had and as a result became less confident. This student had not received any previous library instruction, which may also help explain why they were less confident than their peers who had received one or more previous library sessions.

It would be interesting in future studies to explore whether the online or in-person format is preferable for a student’s very first library research skills instruction experience. Since this study was the first instance of online, asynchronous library instruction as a direct alternative to an in-person session at this institution, all students who were qualified to report a preference for one method or the other in our study had received in-person instruction first. Obtaining a sample of students who had first received online library instruction would illuminate whether the preference for in-person vs. online format is influenced by prior experience. Based on the inexperienced student who reported reduced skills and confidence following online instruction and the student who reported a preference for in-person instruction due to the hands-on support from librarians, it may be that online instruction is preferred by more experienced students for whom the material is more of a refresher of previous skills, whereas the in-person format is preferable to less experienced students who need more support while learning the material for the first time. Ismail’s (2016) findings support this theory.

Finally, it is clear that the students in this study who had experienced both methods of library instruction preferred the online format. However, this preference may not be generalizable to all students. It is important to keep in mind that this course is an upper-level one, with most students taking it in either their third or fourth year of undergraduate study. Additionally, as mentioned above, the fact that these students had all received in-person library instruction prior to completing the online modules means that their preference cannot be generalized to students who have never received library instruction before. That said, the overwhelming preference of our participants for online instruction suggests that librarians should consider utilizing this format for some classes, even if the students are on campus.

Limitations of the Present Study

As previously mentioned, a major limitation of this study is the amount of confounding factors that could provide alternative explanations for the statistically significant difference in literature review scores between the in-person and online groups. The two sections of the speech-language-hearing sciences course were taught by different instructors, meaning there could have been slight variations in delivery of the overall course content and the grading of assignments.
Additionally, as the sections were offered at different times of day with different instructors there is a chance that the two groups of students have an underlying difference that influenced their decision to enroll in their particular section. Another limitation is that although the researchers made every effort to ensure the instructional content of both the in-person and online sessions was directly comparable, it could not be exactly the same due to the difference in medium. At the request of the course instructor the online students received a grade for completing their library instructional content, while the in-person students did not. As a result the online students may have paid more attention to the material because they were more invested in learning it. This issue could be addressed in future studies by administering a graded exercise to the in-person group.

**Conclusions and Future Studies**

The results of this study suggest that students who have received library skills instruction both online and in-person prefer the online format. Further study is needed to determine if this preference is influenced by the order in which those formats are encountered or by the amount of previous experience. Additionally, our results support the possibility that online library skills instruction may be more effective than in-person instruction for improving performance on a literature review assignment. Even if the difference in this performance was not due to the instructional format, it is encouraging that many of the students in both groups reported increased skills and confidence in conducting speech-language-hearing science research following the library material.

This study has revealed several areas of opportunity for further investigation, including whether or not instructional format preferences vary based on level of previous library research experience. The researchers were authorized by the university’s Institutional Review Board (IRB) to extend the present study through the Fall 2017 semester, so these data will later be supplemented by a second participant sample. We look forward to exploring the new results from this follow-up study.
References


Ismail, L. (2016). Removing the road block to students' success: In-person or online? Library instructional delivery preferences of satellite students. Journal of Library & Information Services in Distance Learning, 10(3), 286-311. doi:10.1080/1533290X.2016.1219206


CONDUCTING A LITERATURE REVIEW

Professional and technical writing in any field frequently requires reference to existing literature. Proposals, articles, and research reports usually include literature reviews that establish background and support for information presented in the current report. Citing literature provides support for your statements, making your statements more credible and demonstrating your knowledge of what is being done in the area of your research.

All statements of opinion or argument should be backed up by evidence. For example, the statement, “Poverty profoundly affects child development in many ways,” should be supported by research evidence. That evidence can be found by a search in several databases covering the areas of speech-language pathology and audiology, such as ERIC, Sociological Abstracts, ComDisDome, Linguistics and Language Behavior Abstracts, Social Services Abstracts, and PsycINFO.

The Research Scenario: You must conduct a literature review on communication disorders of children with autism. You are particularly interested in several possible interventions for increasing communication initiation to promote socialization. Two possible approaches seem to have potential, the Picture Exchange Communication System (PECS) and sign language. You decide to do your literature review on this topic.

To start you would need to determine terminology you will use in your research to locate answers to your question.

Based on the research scenario above, you will find it easier to do secondary research if you phrase your thesis as a question. Write a research question for a paper on that topic:

And then you must choose a database. What sources will you use to do your research for this paper?
Let’s begin today’s searches with Seeker. This is a library search tool which searches journal articles, books, newspapers and more.

Locate articles on autism and the Picture Exchange Communication System.
How many records did you find?

You are interested in articles that talk about either PECS or sign language as an intervention. How would you add sign language to the search? How many records did you get?
Remember: When combining synonyms, use the Advanced Search and connect the terms in the same search box using OR.

Your search should look like this:

Let’s add our term social development. Does the result list change?

Use the “Subject” link on the left-hand side of your results to get ideas of additional terms to add to your search. You notice two terms that you think will help narrow down these results even further to get more relevant results.

How can you add social skills to your search?

Look at Number 7 “Sign language versus picture exchange communication system in language acquisition in young children with autism.” What is this?

Let’s narrow your results down to scholarly (peer-reviewed) journal articles published in the last 15 years.

To be even more specific we can add the term children. Should we truncate the term children? Child*
Let’s look at some records.

Look at #7: A Smart-Phone Application and a Companion Website for the Improvement of the Communication Skills of Children with Autism: Clinical Rationale, Technical Development and Preliminary Results

- Who is the author of the article? In what periodical does it appear?
- What is the volume number? Pages? Date?
- Is the full text of this article available online?
- Would this article be acceptable for a literature review? (What are the criteria for inclusion in your paper?)

#8: Effects on Communicative Requesting and Speech Development of the Picture Exchange Communication System in Children with Characteristics of Autism

- Who is the author of the article? In what periodical does it appear?
- What is the volume number? Pages? Date?
- Would this article be acceptable for your literature review? Is it primary research?
- Is the full text of this article available online?
- Does this article have a doi?

#18: Meta-Analysis of PECS with individuals with ASD: Investigation of Targeted versus Non-Targeted Outcomes, Participant Characteristics, and Implementation Phase

- Would this article be acceptable for your literature review?
- Is this article a primary research study? How could it be useful?
- Is the full text of this article available online?
- Does this article have a doi?

Open a new window. Let’s also look at Communication Sciences and Disorders Information Service (ComDisDome).
Try the same search in ComDisDome.

#5: Communication Intervention for Children with Autism: A Review of Treatment Efficacy

Is this primary research?  
Is this article full text electronically?  
Does it have a doi?

The Goldstein article seems right on target. You would like to see similar articles.  
How can you find additional articles on this topic?

Use the references in the article to find additional sources.  
What is the time relationship between the Goldstein article and the references?

Use the Journals tab on the library homepage to find articles from citations.

Can you find the following items from the reference list at the end of an article?


Use Google Scholar and Web of Science to search for authors who have cited a particular article.

Do a search in Google Scholar to see if anyone has cited this article:

Sometimes you will not have a full citation. You read an article in the *New York Times* about a gene for stuttering. Would you be able to cite a *New York Times* article in a literature review? Can this article be helpful?

**On the Trail of a Gene for Stuttering**

A study comparing identical and fraternal twins in Australia found evidence that stuttering and its severity may have a genetic basis.

The study, presented last week at a convention of the American Speech-Language-Hearing Association in San Francisco, found that inherited traits seemed to play a much stronger role in stuttering than environmental factors.

Working from a database of 3,758 subjects compiled by the Australian Twin Project, a team led by Dr. Susan Felsenfeld, a professor of speech pathology at Duquesne University in Pittsburgh, found 91 pairs in which at least one twin stuttered.

After interviewing the stutterers and their twins, the researchers found that both identical twins were about two and a half times as likely as fraternal twins to be stutterers.

While this finding was similar to an earlier survey, data from the interviews were used to rank stutterers in terms of severity and emotional distress related to the condition. Again, researchers found a greater concordance on these measures among identical than fraternal twins.

At the same conference, researchers presented the results of a series of brain scans given to stutterers before and after intensive retraining in speech fluency.

Before treatment, the scans showed higher than normal activity in areas of the brain that coordinate the muscles used in conscious movements, said Dr. Luc F. De Nil of the University of Toronto.

In most people, speech is automatic, he said, “but it appears that stutterers lack that automaticity.”

A year later, Dr. De Nil said, the “overall levels of activation were more like that of normal speakers.”


**CREDITING SOURCES**

Find help with APA citation style:

- [http://guides.lndlibrary.org/apa](http://guides.lndlibrary.org/apa)
- Use CrossRef to look up DOI when you don’t have one.
- Purdue OWL ([http://owl.english.purdue.edu/owl/resource/560/01/](http://owl.english.purdue.edu/owl/resource/560/01/))
- Publication Manual of the American Psychological Association:


For further help with organizing/writing your paper and citing sources, contact the Loyola Writing Center: [http://www.loyola.edu/writingcenter](http://www.loyola.edu/writingcenter). You can make an appointment online to meet with a peer tutor in person at the Columbia, Timonium or Evergreen campus.
Don’t hesitate to contact a librarian for help!

Appendix B

Outline of Content from Online Library Instruction

Module Order:
1. Research Question
2. Source Types
3. Keywords
4. Search
   a. Date limiter
   b. Peer review
   c. Truncation
   d. Abstract (mention primary vs. secondary which will be covered in next module)
5. Primary vs. secondary research
6. Citation info (including RefWorks)
7. Other databases comparison
8. Journal search and cited reference search

Learning Outcomes, Activities, and Assessment:

Research Question module:
1. Students will be able to explain the concept and importance of a research question.
2. Students will be able to form a specific research question based on a broader topic area.
Activities:
   1. “Video: UCD Faces of Research - What is research?”: (Link: https://youtu.be/8liT47qmQOc)
      a. Scholars and scientists with the University College Dublin ask, what is research and why is it important? Watch this video and then proceed to the Forming a Research Question quiz.
Assessment:
   1. “Forming a Research Question”: This quiz will assess your ability to identify a research question that is specific and concrete.

Keywords module:
1. Students will be able to explain the concept and importance of keywords in the context of database searching.
2. Students will be able to identify keywords from a research question in order to search databases effectively.
Activities:
   1. “Video: Choosing Keywords”: (Link: https://youtu.be/bMBd60919xc)
This video demonstrates how to choose keywords to include in your search. Watch it before attempting the Identifying Keywords from a Research Question quiz.

Assessment:
1. “Identifying Keywords from a Research Question”: This brief quiz will assess your ability to extract relevant key terms from a research question to use in a database search.

Search module:
1. Students will be able to use keywords and Boolean logic in order to retrieve articles that are relevant to their research question and appropriate for use in their course assignment.
2. Students will be able to use advanced search strategies such as the asterisk truncation and publication date limiter in order to search the databases efficiently and effectively.
3. Students will be able to explain the concept of peer review in order to identify high quality sources.
4. Students will be able to identify an abstract and explain its purpose in order to evaluate the relevance and quality of retrieved sources.

Activities:
   a. Watch this video about searching in Seeker and using your keywords. Then, proceed to the Search for Journal Articles activity.
   a. This video shows you how to apply the search strategies you learned in the Seeker tutorial to your search in another database, ComDisDome.

Assessment:

1. “Search for Journal Articles”
   a. Using the Seeker database, perform a search that provides five or more relevant scholarly journal articles (not books, book chapters, or dissertations) related to the research question below: What is the effectiveness of the picture exchange communication system (PECS) vs. sign language for improving social development in children with autism? After you have completed your searches and are satisfied that you have the best results for your paper, upload your search history and results using the instructions below. Hint: To get full points you will need to utilize some of the advanced search strategies mentioned in the Seeker Advanced tutorial.

Primary vs. Secondary Research module:
1. Students will be able to explain the difference between primary and secondary research in order to differentiate between the two types.
2. Students will be able to identify and retrieve at least one primary research article and one secondary research article from the library databases.
Activities:
1. “Video: Primary and Secondary Sources in the Sciences”: (Link: https://youtu.be/s_jRgLUcJ0c)
   a. Watch this brief video about the different types of sources before completing the "Identifying Primary and Secondary Sources" quiz.
   a. This video walks you through the peer review process and explains its significance for academic research.
3. “Primary vs. Secondary Research Handout”:
   a. For a quick review of primary vs. secondary research and how to spot the differences, save or print this short handout from the library.

Assessment:
1. Identifying Primary and Secondary Research Articles: This quiz will evaluate your ability to distinguish between primary and secondary research using article abstracts.

Citation Information module:
1. Students will be able to identify the elements needed for a citation in APA Style in order to construct correct citations.
2. Students will be able to use the RefWorks citation management tool in order to organize sources and citations efficiently.

Activities:
   a. This is the library’s APA Style guide, which will help you to identify and write citations. Review it, and then look at the “What is a DOI, and how do I locate it?” guide below.
2. “What is a DOI, and how do I locate it?”: (Link: http://guides.lndlibrary.org/ld.php?content_id=14756301)
   a. APA citations sometimes require a DOI, or Digital Object Identifier. This guide explains what a DOI is and how to locate it.
   a. You can use RefWorks to organize your sources and assist with citations - check out this guide for more information.

Assessment:
1. “APA Style Citation Quiz”
   a. Use the APA and DOI guides to complete this quiz.

Journal Search and Cited Reference Search module:
1. Students will be able to use the library journal locator in order to retrieve the full text of an article given only the citation information.
2. Students will be able to perform a cited reference search in Google Scholar and Web of Science in order to identify articles that have cited a particular article.
3. Students will be able to explain the relationships between articles and their references in order to aggregate related research.

Activities:
1. “Video: Publication Finder - Do we have the article that you need?”: (Link: https://youtu.be/VTPi6m3fqxU)
   a. This video shows you how to determine if the library has access to a journal. Watch it, and then proceed to the Cited Reference Search video below.
   a. This video demonstrates how to use Google Scholar and Web of Science to complete a cited reference search.
   b. Note: This tutorial is no longer used by the library and was replaced by an online guide in August 2017.

Assessment:
1. “Performing a Journal Search”
   a. This quiz will evaluate your use of the journals search feature to identify which articles the library has access to
UX and Your Library: A Scalable Model

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Abstract

User experience is immeasurably important for your patrons as they access your website. This article presents tips and strategies for testing user experience, suggests a number of different popular technologies and tools that are used in the UX field, and lays out a plan for sharing and utilizing data to make improvements on your website. It is the goal of this article to present a model for improving website usability that can be scaled up or down depending on the resources available at your institution.

Introduction

Over the past several years, the partnership of a Web Services Librarian and an Online Services Librarian led to an increased interest in improving patron user experience of the website at the University of Tennessee at Chattanooga (UTC) library. Drawing on best practices from both the library and web development fields, we now have an established model for how we approach improving user experience. This topic is especially important when considering distance and online students; these patrons often experience the library primarily through the website. It is part of our mission of service excellence to provide those students with an easy-to-use and understandable interface. In this article, we will present a case for the importance of focusing on user experience, as well as a number of strategies that libraries can consider adapting for their own institutions, and finally, a review of current technologies and software used in this field and what to do with the data once you have it. We hope to provide a variety of avenues for making improvements to your web presence that can be scaled up or down depending on the amount of resources and time a library is able to dedicate.

UTC is a mid-sized, public university with a FTE of approximately 11,000 students. The library boasts 22 librarians and 12 full time staff. While no librarian has ‘user experience’ specifically listed in their job description, two librarians have been able to focus a good deal of time and effort on user experience initiatives. On top of that, another staff member expressed interest in assisting with this endeavor and was given the support to dedicate time to the projects. Finally, in Fall 2017, we were lucky enough to be awarded a research fellow from the university Honor’s College, who has helped immensely in reviewing analytics and planning user tests.
The Importance of User Experience

Patrons are visiting your library’s website because they are on a mission. Whether they are looking for critical research materials, figuring out the library’s hours, or anything in-between, their ability to find what they’re looking for is fundamental to the service your website is providing. As website usability guru Steve Krug (2014) states, “One of the things that becomes obvious as soon as you do any usability testing—whether you’re testing Web sites, software, or household appliances—is the extent to which people use things all the time without understanding how they work, or with completely wrong-headed ideas about how they work” (p. 25). This means you not only need to assume users won’t understand and won’t try to understand how your website works, but that a number of them will also construct “wrong-headed ideas” about how to use your website. Since usability is the primary characteristic that should be built into a site, it is hugely important that we understand what aspects of our sites are most likely to cause these misunderstandings so that we can clarify them.

According to Designing the obvious: A common sense approach to web application design (Hoekman, 2007), the goal should be to design an interface that is so intuitive that the people using it attribute their ability to use it effectively to pure common sense. The design should make things clear, and the interface elements should be intuitive, streamlined, and uniform. The goal is to have an obvious design. When your design is obvious you greatly increase the likelihood that your users will “get it”, which is the essential state we are trying to reach with our site design. Users that “get it” do not have to think about navigating your site, and therefore they will have a much better chance of finding what they’re looking for. This also means users will better understand the range of what your site has to offer and will feel confident browsing for other information. When users “get it” they feel smarter and more in control when using your site, which increases the likelihood they will return, and it increases the value they place on the quality of your organization (Krug, 2014).

The eternal struggle of any design is the need to eliminate or simplify as many components as possible, while maintaining all of the necessary functions. Your library’s website did not come to be the way it is because people were haphazardly adding pages and features just for the fun of it—no, somebody (possibly very many people) deemed each word on every page necessary. Editing or removing these words and pages can potentially be a very political process. It is essential to bring as many stakeholders into the discussion as you can, and to explain the importance of user experience design to them. Improving user experience must be a team effort.

When bringing stakeholders into this conversation it is going to be very helpful to have strong examples of well-considered UX best practices. This also happens to be a great starting point for evaluating the user experience of your website. At UTC Library, we rely heavily on the writings of Steve Krug for our best practices. Here are a couple of tips from his recent edition of Don’t Make Me Think: A Common Sense Approach to Web Usability that may help improve the UX of your website:

- **Remove half of the words on every page.** This may sound extreme, but it’s more useful than you may think. It is often possible to remove half of the words on any
given page without losing value. When we distill our message, we reduce the amount of visual noise, and we make the useful content more visible.

- **Links should be obviously clickable.** Links are at the core of all web navigation, and when they are not obvious, you will end up with large parts of your site going completely unused. There are many standards for making links obviously clickable: colored text, buttons, underlines, photos with borders and text beneath. We suggest establishing one or two link identifiers and then using them uniformly across your entire site.

- **Replace library jargon with plain language.** To those of us working in a library the meaning of the word “Collections” is obvious; however, to many of your users collections is an ambiguous term that could mean all kinds of things. Plain language, especially in your site’s navigation, is one of the best ways to ensure your users will “get it”.

These examples are a good place to start, and we can use them to paint our UX strategy broadly; but as librarians, we understand our websites too well to infer what hurdles our users are going to struggle with by simple observation. “Librarians are experts at classification and organization, focusing on providing access to the resources that users need the most. This doesn’t necessarily make them experts at creating effective Web sites, however” (Brucker, 2010, p. 41). This is where measuring user experience and conducting usability studies becomes invaluable.

**Strategies for Measuring User Experience**

There are many strategies that can be used to measure user experience, but in this article, we focus on these main five: analytic software to track website usage, focus groups, task-based testing, surveying users, and card sorting. At UTC library, we have used all of these strategies at one time or another during the past two years. Our current model is to identify some area of the website we’d like to know more about or make improvements on, then we select an appropriate strategy. Our overarching goal is to continually improve our website’s user experience, so we try to conduct usability assessments at least twice a year. When initiating any user experience strategy, it’s important to first define goals for your website and goals for your testing. As Turner states, “to know if an activity or process is effective you must know the intent of that activity or what that activity is supposed to be doing or accomplishing,” (p. 264). In most cases, the goal of the testing will be the driving force for selecting an appropriate strategy.

**Website Analytics**

Website analytic software can be invaluable in telling the story of how your patrons are currently using your website. Website analytics will show you how many times patrons are accessing the site, what links they click, how long they stay on particular pages, and a host of other valuable data points. Some website analytics should be folded into the content management system utilized by your library website, but there are some additional software available to gather more specific data or provide visualizations for interpreting your data, such as heat mapping. Some software even allows you to periodically record patron interactions with the site.
as well, which can shed light on ways that patrons navigate your site and any obstacle that they might have.

The caveats of using website analytics are that it takes time to set up and manage, but even more importantly, it takes time to monitor and analyze the data. We’ve been recording patron interactions from the site for some time, but only recently with the addition of a student research assistant have we had the chance to catch up on watching and tagging those recordings in order to make meaningful changes.

**Focus Groups**

Focus groups can be a wonderful way to gain insights on your users’ experience with the library’s website. In their recent article, *Conversations with Web Site Users: Using Focus Groups to Open Discussion and Improve User Experience*, Conrad and Alvarez (2016) define focus groups as “unique small group interviews led by a designated moderator who encourages interactive discussion from group participants,” (p. 55). Rather than testing a patron’s ability to perform specific tasks with the website, focus groups allow users to explain their thoughts and feelings about the website or specific pages generally.

In spring 2015, UTC Library held eight focus groups with forty participants. The goal of those focus groups was to have our patrons respond to these prompts:

1. How do you typically use the library website?
2. Tell us about any frustrations you’ve had using the library website.
3. Tell us things that have worked well for you on the library’s website.
4. Is there anything you can think of that the library website is lacking? Information that you’ve looked for and couldn’t find?
5. Have you ever been on a website that pops up a chat window to offer help? How would you feel about something like this on our library website?

The feedback was incredibly interesting. From the second prompt, we gathered that students were frustrated by not being able to easily find out about library events, and so we added a calendar widget to our homepage. Since then, we have seen an increase in attendance at workshops and events. At the time, we were considering using a chat pop up function but the response from our focus groups was generally negative, at least initially negative until the concept was explained further, so we chose not to pursue adding that feature to our site. Focus groups are a great way to identify general frustrations issues with the site and help decide future directions for development.

Some caveats of focus groups include the possibility of 'groupthink' within the focus group, as well as possible bias of the moderators themselves. Groupthink is defined as “a psychological phenomenon whereby pressure within a group to agree results in failures to think critically about an issue, situation or decision” (Merriam-Webster). In the case of our focus
groups, we saw several examples of this happening. For instance, in one focus group, an outspoken student mentioned that they used the library website “for databases,” and the rest of the group nodded and agreed. However, in most of the other groups, the most common use for the website was “to book a study room.” This is a clear example of the way that groupthink might skew results Our moderators were librarians from various areas in the library: instruction, IT, and access services. It was clear from the recordings that we are not trained moderators. No matter how unbiased our moderators intended to be, there was a clear element of steering the students in each focus group toward questions or areas of the website that most interested the librarian-moderator. In our case, that didn’t change the usefulness of our data, but we did feel that was an area for improvement. However, even with these known issues with focus groups, they are still incredibly valuable and can provide interesting results.

**Task-based Testing**

Task-based testing is exactly what it sounds like; it’s a test where you ask your patrons to complete a set of tasks in order to see how they choose to complete them and to find issues in functionality of the site. As Schmidt and Etches (2014) state, “While it is possible for librarians to have useful insights about their websites, generally we’re too knowledgeable about libraries-and too immersed in the creation of our sites- to consistently make objective observations that lead to improvements” (p. 97). This is why task-based testing is so important.

Task-based usability testing has a number of positives when considering what strategy to use. First, you don’t need a lot of participants for a study to give you meaningful results. According to Steve Krug (2010), “Almost everyone agrees that there are diminishing returns from having more users do the same tasks: the more users you watch, the fewer problems you see” (p. 43). Krug recommends using only three participants and doing testing regularly to find problems. Following Krug’s recommendations in his book, *Rocket Surgery Made Easy: The Do-It Yourself Guide to Finding and Fixing Usability Problems* (2010), if you’re considering doing some task-based testing, the first thing you need to do is consider the most important things that your users should be able to do using your website, then write tasks about them. Here is an example of the tasks from the UTC Library’s most recent task-based usability testing:

1. Can you find a database that would be good for psychology research?
2. Can you find a database that might cover a broad range of disciplines or subject areas?
3. If you needed help with research or finding sources for a paper, show me what you would do.
4. Can you find directions for how to print at the library?
5. Have you heard that the Studio has a lot of high-end technology to borrow?
   a. If yes, Can you show me how to find a list of what they have available to check out?
b. If no- describe it & the Studio. Then: Can you show me how to find a list of what they have available to check out

6. Have you ever gotten anything through Interlibrary loan?

   a. If yes, Can you show me how you login to your account?

From these tasks, we were able to make many improvements to our website. For example, for task #4, we realized that several students were going to the “Library Instruction” link for finding directions for how to print. Clearly, that term was not well understood by students. We changed that link to “Book a Library Class” and made finding printing directions less buried on the site. For us, task-based testing is invaluable and relatively easy to conduct. Since you only need a few participants to give you valuable insights, you don’t need to plan to spend a lot of time on the project or money on compensating your participants. We are fortunate enough to have software that records participants’ mouse movements, clicks, and facial expressions as they work their way through the tasks, but a simple, free method is to have one or two people observe and take detailed notes while the participants are completing the test.

**Surveys and Feedback**

Most libraries conduct surveys of patrons regularly and our library is no exception. Our yearly library survey is comprehensive, covering all aspects of services, building usage, and events. We also include a general question, “How often do you use the library’s website?” While our library has not utilized the yearly survey for in-depth feedback on the website, this easy method should not be overlooked, especially for institutions that are low on staff time and money.

**Card Sorting**

If your library is considering reorganizing the website, a card sorting test should be folded into your process. Card sorting is an easy, inexpensive, user-centered process can really shed light on the way that your patrons would like to navigate to key elements of your website. Card sorting allows your participants to go through a shuffled deck of cards printed with information about specific pages in your site and group cards that seem to go together. There are three types of card sorting tests: closed, open, and hybrid. A closed sort is one that uses top-level categories that your website already has (such as, Home, About, Collections, etc.). An open sort allows your participants to write in categories themselves. A hybrid uses the categories that your website already uses and allows participants to write in categories if they want to. At the UTC Library, we recently conducted a hybrid card sorting test for our upcoming reorganization of the website and found it very useful. Students group things significantly differently than our website does and we plan to use some of their write-in categories as we reorganize the site.

When designing our card sort, we relied heavily on the article, *Playing with a Bad Deck: The Caveats of Card Sorting as a Web Site Redesign Tool* by James Brucker (2010). This article lays out many of the common errors made when first trying card sorting and gives some great practical tips. The top caveat he mentions is that sometimes the data can be quite difficult to
manage, especially if no one on staff has experience with statistical clustering analysis. We were able to sidestep that issue by using software designed for card sorting.

**Recruitment**

When recruiting students, be sure to incentivize their time. We have found that students love food, especially pizza. We once offered bagels and coffee in the morning to incentivize participation in focus groups, and did pizza and soda in the afternoon; the pizza was by far more popular. A good, old-fashioned bowl of candy can work if you are just asking your patrons for a few minutes of their time. We have been lucky enough to be awarded enough funding to give $5 gift cards to Starbucks as well, which we save for tests that take twenty minutes or more.

There are two methods for recruiting participants for your user experience and usability tests: scheduled and unscheduled. For scheduled tests, the goal is to have students sign up for a time to come in and take a test ahead of time. This can be difficult, especially depending on the time of the semester. If you need student to sign-up to come take a test, we’ve had pretty good luck putting the sign-up sheet along with a poster with whatever incentives we are offering at the circulation desk where students are likely to see it. Our circulation staff and student workers do a good job of selling it. Another method would be to ask faculty to mention it in classes or to advertise it in a campus-wide email. For unscheduled tests, the goal is to just grab people as you see them and get them to participate. It can be a little daunting asking folks who look busy if they’d like to participate, but as long as you have good incentives, you’ll find some takers. We’ve had luck with both methods of recruitment.

**Tools You Should Know About**

**Website Analytics**

*Google Analytics.* Hopefully, your organization is already using Google Analytics (GA) ([https://www.google.com/analytics](https://www.google.com/analytics)) to gather essential web data. If not, there are tons of resources out there to get started. It is crucial when reading information about GA to realize that most of the material is related to commercial sites. Keep in mind that libraries are entirely different and many industry best-practices don't apply to a library website. For example, libraries regularly send users off to external web interfaces like discovery platforms or catalogs and vendor sites like databases or e-book platforms. This navigation will register as a bounce. This behavior is typically a bad thing in the web world because the goal of most websites is to keep the user on the site. In libraries, however, our goal is to get users to our resources.

*Piwik.* One might think that Google Analytics is the only game in town, but there are several open source alternatives that many businesses, government agencies, and universities are beginning to switch to over concerns about data collection and privacy. One of the most popular alternative analytics tools is Piwik ([https://piwik.org/](https://piwik.org/)).

*Google Tag Manager.* While not necessary, Google Tag Manager (GTM) is a fantastic tool for managing a wide range of tools and tracking. The best aspect of GTM is that it only requires a small snippet of code inserted into the website template to provide access. The website
interface then allows access to manage tags dynamically on the site without ever touching the code on the site again. Mouse tracking tools can be installed via GTM and even targeted to only specific pages. For example, our university has a shared GTM instance, but the library can install tracking scripts to only our library directory. “Events” can also be set up and managed in GTM to allow for click tracking in specific pages, tracking navigation to external sites, or downloads of linked content.

**Mouse tracking.** Mouse tracking software records user interactions including mouse movements and navigation throughout the site. Viewing these interactions can provide a wealth of data and insights into issues that user may be having. Mouse tracking can be especially helpful after launching new features. We recently made some modifications to our home page search tool. Reviewing users interactions after launch confirmed that changes improved confusion users had with the previous iteration of the search tool. The only real downside is that this type of tool requires a great deal of time in viewing the recordings.

There are many choices when it comes to mouse tracking, and they all have their strengths and weaknesses. Most have free trials, so there are plenty of opportunities to check them out and see what fits best for the needs of your organization. All of these tools can be set up using Google Tag Manager. After evaluating other platforms, the UTC Library chose Hotjar (https://www.hotjar.com/). Hotjar provides a free tier with access to most of the essential tools needed to provide insight into user interactions. The main limitation of the free level is that it only allows three months of data storage. Hotjar and other mouse tracking platforms also offer heat mapping, which shows an overlay of a webpage with cumulative interactions of mouse clicks and mouse movement that closely approximates eye tracking.

**Emulators.** Good web design requires testing interfaces in all of the most common operating systems and browser combinations to ensure that everything displays and works as expected. One of the best service for this is Browserstack (https://www.browserstack.com) This service provides emulators that allow testing on a wide variety of operating systems, browsers, and even testing on specific devices.

**Usability Testing Software**

While you can conduct usability tests without software, using just an observer taking detailed notes, using a screen capturing software can be immensely helpful. It will allow you to review the test and share the recordings with stakeholders. Here are a couple of options to consider.

**Morae.** Morae (https://www.techsmith.com/morae.html) from TechSmith is the premium screen recording software used by the pros for recording task-based user testing. While this is the premiere software, it is quite expensive. If you do not have a UX team that uses it regularly to do continuous testing, it may not be worth the investment. The software is relatively simple to set up on machines for testing, but there is a bit of a learning curve for the management and data analysis functions.
Inexpensive alternatives. There are many web-based and downloadable tools that can be used to facilitate task-based user testing. These may be worth checking out in cases where it does not make sense to invest in dedicated screen recording software. Here are a few to consider:

- Usertesting.com
- Silverback (for Macs): http://silverbackapp.com/

A/B Testing

A/B Testing allows you to test variations against each other to determine which works best for users. For example, you can A/B test button colors, placement, or differences in terminology to experiment with the goal of seeing which variation gets clicked on more. A/B testing goes on until there is a statistical winner between the two choices.

Google Optimize. Google Optimize is one of the only free platforms for A/B testing, but the product launched earlier this year and does have room for improvement. There is a paid version, but the free version provides most of the tools needed with a few limitations on the number of experiments and no ability to target audiences. Optimize is tightly integrated into Google products, so you have to use GA and the Chrome browser. It is recommended to implement Google Optimize with Google Tag Management or the snippet can be added directly to the page. A Chrome plugin is installed to modify page variations. Modifications are edited in an overlay on the live website that provides tools to change color, text or to edit HTML, CSS, or even javascript.

The trickiest part of setting up the test is connecting it to goals in GA. There are also limits in the number of goals in GA, so planning is important. There is a limit of 20 goals or more precisely four sets of goals, each with five goal slots available. This limitation is per view, so you may consider adding more views. Just be aware there is a limit and you need to plan. Another key thing to remember is that you can’t delete goals once they are set, so be sure to plan it carefully.

Optimizely and Visual Website Optimizer. These two tools work well for A/B testing and both offer a trial versions. Optimizely (https://www.optimizely.com/) is the premier solution for A/B testing, but they no longer have a free tier. Visual Website Optimizer (https://vwo.com) is another web-based solution similar to Optimizely. Both can be costly and will require considerable support from your institution.

Card Sorting. While card sorting can be done with no technology whatsoever, analyzing the data can be quite tricky if no one at your institution is capable of statistical cluster analysis. To assist, you may consider using one of the following tools. Optimal Workshop is a platform that provides some tools directed mainly to information architecture including a virtual card sort. The free version is limited to 10 responses and 30 cards for a sort. This software gives you the ability to conduct card sorting at a distance if you choose to because the program sets the card
sort as a drag and drop survey with a shareable link. The analytics are for Optimal Workshop are very easy to understand. Syntagm (http://www.syntagm.co.uk) has templates for cards and software to analyze the data along with lots of useful information. It is free for educational institutes but does not have the capability of doing an online card sort.

What to Do with the Data

After having gathered user impressions of your website, there comes the obvious question, what do I do with the data? At UTC Library, we have a policy to only gather user experience data if we plan to make changes. We recommend approaching your user experience projects with the expectation that you will make changes to the site when it has finished. This can be difficult, especially if you have many stakeholders involved in the look, feel, and content of the site. To help smooth the way for changes to be made, be sure to communicate with your stakeholders. After each user experience project, we invite the whole library to a presentation about the test we conducted, data gathered, information learned, and subsequent proposed changes to the site. It is important to make this wrap-up presentation timely so that the useful data that you have gathered does not sit too long. We have had a great response from the librarians and staff using this approach.

Conclusion

Your library’s website is the gateway for your patrons to access information and resources available. Having an easy-to-use interface is vitally important, especially for patrons who are accessing the library at a distance or who are primarily learning online. Unfortunately, librarians aren’t always the best at designing user-friendly websites, perhaps because we use a lot of jargon, or because of the unique way that we organize and choose to present information, or because we are too invested in the content of the website. Because of this, it’s important to take a close look at how your patrons are actually using the site. To achieve this, you can set up and review website analytics, conduct task-based usability tests, hold focus groups, survey your users, or conduct card sorting tests when you’re ready reorganize the site. At UTC Library, we are fortunate to have the support to dedicate a good amount of time and resources to improving user experience for our website. It is our hope that whatever time and resources available, you are able to scale our model up or down to meet your institution’s needs and improve the usability of your site.
References


Two Thousand Students, One Librarian: Balancing Depth and Breadth of Library Instruction for Online Graduate Students

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Abstract

Many librarians struggle with how to balance scalable instructional offerings with more personalized instruction for online students—scale tends to come at the cost of personalization and vice versa. This paper will discuss three methods for connecting with online students that range from one-on-one personalization to widely scalable instruction: individual consultations, scaffolded instructional webinars, and asynchronous video tutorials. The student engagement with each type of instruction will be discussed, with ideas for future directions provided.

Introduction

The eternal struggle for online learning librarians is to connect with distance and online students at scale, while still providing depth and customization. Moran and Mulvihill (2017) tackled this topic, describing their library’s attempts to create sustainable, personal instruction through standalone modules, an online course, and embedding librarians in the online classroom. Many other librarians have decided to focus on one over the other, opting for scale or personalization. A common option to scale instruction is by creating library modules or tutorials that can be embedded in the online classroom (Mune, et al., 2015). This method ensures that the videos are accessible to all students when they need them and can increase student success (Contrino, 2016). However, this solution can feel impersonal and students may be less satisfied with this form of instruction than a more personalized learning experience (Gonzales, 2014). Other librarians have tried embedding themselves by establishing an online classroom presence (Coltrain, 2014). This classroom presence can allow them to engage more deeply with online students, and over a greater length of time. Although this instructional method does offer more customized instruction for distance learners, the amount of engagement and time required precludes it from being easily scalable to a large number of classes. This paper will discuss how a blend of highly personalized and highly scalable solutions can be offered to online students to accommodate their preferences and needs.

Background

This paper will examine three instructional approaches that were used to provide research skills instruction to students in an online graduate Education program: asynchronous video tutorials, individual consultations, and scaffolded library webinars. In June 2016, a new librarian was assigned to the Education department at Northeastern University. Residing within the College
of Professional Studies, the Education program is comprised of online and distance students at the Master’s and Doctoral level. The librarian began working with these students in July, at their annual on-campus residency. All doctoral students in the program were required to come to Northeastern’s Boston campus for a week of intensive classes, workshops, and programming. The Education librarian was highly involved with the residency through instruction sessions and individual consultations. During the instruction session on research resources for Education, many of the students’ questions indicated that they lacked basic search skills or awareness of concepts like Boolean operators, phrase searching, or subject terms. As these doctoral students were nearly a year into their program, this was concerning, for students and librarians alike.

The Education librarian took advantage of this once-a-year chance to meet with the students face-to-face and asked them what concepts they would like to know more about, and how they would like them to be presented. Their list of suggested topics was collected and later presented to the lead faculty members for the program’s four foundation courses. The librarian and faculty members discussed how to better support students in this research-intensive program.

The librarian, having prior experience with online learning from a previous institution, suggested embedding in the online classroom. The faculty members quickly discouraged this approach, citing its unsustainability within a program of its size. Instead, they suggested that the students take the lead, contacting the librarian as needed to set up one-on-one research consultations. When the librarian mentioned the students’ comments about wanting more library instruction in the program—and sooner—the faculty and librarian agreed on a series of short, asynchronous video tutorials covering the topics and concepts students had identified as problematic at the residency. These two instructional efforts—the video tutorials and the research consultations—were implemented in the Fall 2016 quarter. After assessing the use and reach of these efforts, the librarian proposed a third level of instruction—scaffolded live webinars—that would combine synchronous instruction with scalability. The lead faculty member for the introductory doctoral course agreed to help facilitate and promote these webinars for the Winter 2017 quarter.

**Instructional Offerings**

**Video Tutorials**

During the Fall 2016 quarter, the librarian created a series of thirteen short tutorials covering the basics of searching. The video topics were drawn from the list students had provided at residency, as well as the Education librarian’s early experiences working with new students in the program. Videos were developed on the following topics: Boolean operators, phrase searching, truncation, wildcard searching, locating full-text articles, using a database thesaurus, keyword vs. subject searching, creating a MyEBSCOHost account, locating dissertations, and using specific databases. Many of the tutorials were conceptual in nature, which promoted their applicability across courses and boded well for their longevity. These tutorials, because they were short, asynchronous, and covered topics that applied across the concentrations within the program, represented a scalable way to reach students with no extra input of time from the librarian.
Slides for each tutorial were created in PowerPoint and the screen capture and audio were recorded using Kaltura CaptureSpace Lite. The recordings and audio transcripts were embedded in the LibGuide that had been created for the Education program. The lead faculty members for the foundation courses were notified when this initial set of videos was completed, and they seemed excited to share these new resources with their students.

**Individual Consultations**

Previously, online students had been able to contact their librarians through email or by requesting a phone call; however, the phone consultation seemed like a poor substitute for the in-person consultation experience of which local students could take advantage. The phone calls tended to be shorter, and less direct instruction could take place because the student and librarian were constantly trying to make sure they were looking at the same database screens and entering searches the same way. Therefore, in the Fall 2016 quarter, the Education librarian decided to add a third option—web conference consultations—in an attempt to better approximate the in-person consultation experience for distance and online students. After trying the free version of several web conferencing products, the librarian settled on using BlueJeans. BlueJeans was selected for several reasons: it was a platform the university already subscribed to, it had screen sharing capabilities, it offered a dedicated personal meeting room, and students did not have to download an entire software program or create an account to use BlueJeans.

The library had also acquired Springshare’s LibCal product, which allowed students to easily book appointments with their subject librarian online. The Education librarian added a question to the booking form, asking students to choose their preferred meeting format, and offered in-person, telephone, and web conference meeting options. Students who elected to meet virtually received a follow up email from the librarian that included a link to the librarian’s BlueJeans meeting room. The librarian promoted this online booking feature and web conference meeting option in an introductory video that was posted in the online classroom of the first foundation course in the doctoral program.

**Scaffolded Library Webinars**

After the Fall 2016 quarter, the Education librarian was concerned that, though she was reaching many students through individual consultations, this instruction was not scalable and many students were being missed. By analyzing the questions received from students in the Fall 2016 quarter, the librarian was able to identify several pain points that suggested a need for more widespread instruction. By looking at which courses the students identified that they were taking, the librarian was able to match the repetitive questions to three assignments in the first foundation course.

Three library webinars scaffolded to these assignments were proposed for this course, and agreed upon by the lead faculty member. The lead faculty member suggested scheduling the live sessions during lunchtime on the East coast and two webinars were scheduled for each of the three topics, to occur in the weeks immediately preceding the assignment due dates. An announcement about the first webinar, including a link to the live meeting room, was distributed.
to all faculty and students in the program. Subsequent webinars were promoted solely within the first foundation course.

Slides for each webinar were created in Google Docs so that an easily shareable link could be created for each presentation. BlueJeans was selected as the delivery platform for the webinars because it had already proven to be reliable in the web conference consults, it allowed up to 100 attendees to a meeting room, and it included a recording feature. The librarian’s presentation, which included slides and live searching and database demonstrations, lasted about 30 minutes. The remaining time was left open for student questions, which could be entered into the BlueJeans chat feature and answered live by the librarian.

Each webinar was recorded for students who could not or did not want to attend the live session. The recording file was downloaded from BlueJeans and uploaded to Kaltura CaptureSpace Lite. A link to the slide presentation for each webinar was included below the video in Kaltura, and a stable link to the video recording was emailed to the lead faculty member, who distributed it to all instructors teaching the course. A link to the slides and the recordings were also added to the Education LibGuide.

Results

Video Tutorials

In spite of students’ requests for videos and faculty members’ excitement about them, the asynchronous instructional videos saw little use. Table 1 shows the number of plays for each video during the 2016-2017 academic year. The most popular tutorial was viewed 42 times in the first year of its existence, and the rest of the tutorials received 15 or fewer plays each in the first year.
Table 1

Number of plays of library video tutorials per quarter, 2016-2017

<table>
<thead>
<tr>
<th>Tutorial Topic</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean operator AND</td>
<td>25</td>
<td>15</td>
<td>0</td>
<td>2</td>
<td>42</td>
</tr>
<tr>
<td>Boolean operator NOT</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Boolean operator OR</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Phrase searching</td>
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<td>2</td>
<td>0</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Finding full-text articles</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Keyword vs. subject searching</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Truncation searching</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Wildcard searching</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Using a database thesaurus</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Creating a MyEBSCOhost account</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Finding dissertations</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>SAGE Research Methods</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Ulrichsweb</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Individual Consultations**

In the first month of offering web conference consultations, the Education librarian received 12 requests for these virtual appointments, which represented over half of the synchronous consultations scheduled that month. Telephone and in-person consultations were also popular synchronous meeting options in the rest of the academic year. Table 2 shows the number of synchronous consultations scheduled by delivery method in the 2016-2017 academic year. Overall, telephone consultations remained the most popular synchronous meeting option, with over 42 percent of live consultations delivered this way. In-person and web conference consultations were tied at around 29 percent of synchronous consults. This tie is largely due to the increase in in-person consultations during the summer quarter, when online and distance students were on-campus for their residency.
These one-on-one appointments offered online and distance students personalized, individualized instruction related to their particular research problem. However, with so many students in the program, it was not a scalable option, and not every student was able to meet synchronously. Table 3 compares the number of synchronous and asynchronous (email) consultations and shows that email consultations outnumbered synchronous consultations two to one for the 2016-2017 academic year.

Table 3

*Comparison of synchronous and asynchronous (email) consultations by quarter, 2016-2017*

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Synchronous</th>
<th>Asynchronous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>59</td>
<td>82</td>
</tr>
<tr>
<td>Winter</td>
<td>26</td>
<td>66</td>
</tr>
<tr>
<td>Spring</td>
<td>10</td>
<td>34</td>
</tr>
<tr>
<td>Summer</td>
<td>13</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>216</td>
</tr>
</tbody>
</table>

**Scaffolded Library Webinars**

The first two webinars, which were promoted to all students and faculty in the Education program, were well attended. There were over 20 attendees at each of the first two webinars, which were on the same topic and provided an introduction to the online library, library research, and tips for locating sources for the students’ first assignment. The later webinars, which were only
promoted within the first foundation course, saw a fall in live attendance numbers, with a total of 14 combined live attendees for the next three webinars and no live attendees for the final webinar. The last webinar was also not recorded due to technical failures with the library website. However, the recordings of the other webinars saw high usage numbers relative to the live attendance numbers and the asynchronous video tutorials. The first recording was viewed 90 times, with the remaining webinars averaging about 50 views. Table 4 displays the live attendance numbers and plays of each recording. In each case, views of the recording represented at least a doubling of usage compared to the live numbers. Even the least watched webinar recording was viewed more times in a single quarter than nearly all the asynchronous video tutorials were viewed in the whole academic year. The addition of the webinars also seemed to coincide with a reduction in the number of repetitive questions and consultations, with 43 fewer consultations overall in the winter quarter.

Table 4

<table>
<thead>
<tr>
<th>Webinar Topic</th>
<th>Live attendance</th>
<th>Views of recording</th>
<th>Total views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Orientation</td>
<td>37</td>
<td>90</td>
<td>127</td>
</tr>
<tr>
<td>Library Orientation</td>
<td>21</td>
<td>44</td>
<td>65</td>
</tr>
<tr>
<td>Advanced Search</td>
<td>6</td>
<td>60</td>
<td>66</td>
</tr>
<tr>
<td>Advanced Search</td>
<td>7</td>
<td>37</td>
<td>44</td>
</tr>
<tr>
<td>Finding Dissertations</td>
<td>1</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>Finding Dissertations</td>
<td>0</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Totals</td>
<td>72</td>
<td>264</td>
<td>336</td>
</tr>
</tbody>
</table>

Discussion

The three instructional offerings varied in usage and popularity with the Education students. The short asynchronous video tutorials saw little usage, despite the fact that they were asked for by students and covered student-identified pain points. The low usage is somewhat surprising given the high number of views on the webinar recordings, which were significantly longer and thus represented a more substantial investment of students’ time.

There are several potential explanations for this discrepancy. The first is that the webinars were more highly promoted. Faculty members encouraged students to attend, and links to the webinars and recordings were posted directly in students’ classrooms. The short video tutorials were not similarly embedded, and thus may have been out of sight for many students. The second is that the webinars were highly tailored to specific assignments and the skills students would need to complete those assignments. The webinars thus seemed more relevant to students than the conceptual tutorials which covered general research skills and strategies. Finally, there were over a dozen short tutorials to choose from and many of the students in the program admitted that their search skills were rusty. Therefore, these students might not have known which tutorials would be most useful to improve the research problems they were having and
likely scheduled a consultation instead. For libraries looking to scale their instruction through asynchronous tutorials, promoting them to faculty who embed them in the classroom and targeting them to specific assignments would be two ways of improving the usage and effectiveness of this type of instructional offering.

The individual consultations were a popular option with students, both synchronously and asynchronously. The synchronous web conference consultations were particularly helpful for general introductions to the library website and education research resources because the librarian’s screen could be shared with the student and searches could be demonstrated live. Students new to the doctoral program who wanted a general library orientation were largely responsible for the web conference consultations scheduled in September, and a similar increase in the number of web conference consultations for new students in January might have been checked by the introduction of the webinars. Aside from the benefits of screen sharing, the virtual consultations allowed the librarian and student to see each other as they spoke, which seemed to foster a better sense of connection than a phone call or email. However, the students in this program may not be typical of all students. These students were all adult learners in a program that had a culture of web conference office hours. Not all students, especially at the undergraduate level, may feel comfortable with the web conference format or video chatting with a librarian. Therefore, librarians might want to consider offering this individualized instruction option to students in research-intensive online programs or to those populated by adult learners.

The webinars offered the best blend of breadth and depth, with students choosing whether they wanted to engage synchronously or asynchronously. The webinars also represented the best investment of time for the Education librarian. While the consultations offered the most personalized learning experience, appointments were scheduled in hour-long blocks and only benefited a single student at a time. The series of video tutorials, while scalable, was time consuming to create, and was not highly used. The webinars, however, could be delivered within an hour and the recordings made available to students and faculty within an hour after that. As each webinar reached over 30 students, the time spent preparing, delivering, and posting the webinars was the most time-effective for the Education librarian. The resulting drop in consultations provided further time savings, and an initial indication that webinars scaffolded to students’ research assignments could be effective for answering online graduate students’ common research questions.

Future Directions

The popularity of the webinars with students has resulted in them becoming a recurring offering for the first foundations course. The Education librarian has begun to identify other research-intensive courses in the program that produce repeated questions from students and frequent requests for consultations. Attempts will be made to target these courses with their own webinars so students in the doctoral program have several touch points with the library throughout their program of studies. The webinars will also be used as an opportunity to promote the other instruction opportunities, such as web conference consultations and video tutorials. The additional promotion might increase usage of the video tutorials, but it is likely that changes will need to be made to the structuring or naming of the videos to make them more accessible to students.
References


In Seven Countries and Six Time Zones: Working Together across the Globe to Serve Our Students

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Abstract

At Webster University, solo librarians manage libraries on six campuses in Africa, Europe, and Asia. On the home campus in St. Louis, ten librarians at a traditional library serve faculty, staff, and students at metro and military campuses across the U.S., at international campuses, and online. To ensure consistency for users, librarians have constructed a network to communicate and collaborate across borders. The librarians meet on a monthly basis using WebEx software and collaborate asynchronously on instructional projects using LibGuides. Library committees have international librarian representation. The libraries have centralized cataloging and electronic resources at the home campus library. As librarians built an instructional webinar series, they worked together to brainstorm topics and partnered to deliver content to all students. This paper will discuss how this network was built, challenges to communication, and the benefits of tapping into the diversity and expertise of librarians around the world.

Background on University Libraries Structure

Webster University's home campus is located in St. Louis, Missouri, with over 65 extended campuses in metropolitan areas, on military bases, and other locations around the world. The university also has a robust online program through which students can earn undergraduate and graduate degrees. In fall 2016, there were more than 15,800 students enrolled worldwide. The majority of students are graduate students and the average age of a Webster student is 34 (R. Punselie, personal communication, December 22, 2016).

Webster University opened its first international campus in 1978 in Geneva, Switzerland. In addition to Geneva, there are international campuses in Accra, Ghana; Vienna, Austria; two cities in the Netherlands; Athens, Greece; three cities in China; and two cities in Thailand. Most of these campuses have one librarian employed on one of the campuses in that country. Some have library staff in addition to the librarian, and the credentials of the librarians are not as strictly enforced at the international campuses as they are at the home campus in St. Louis. In contrast to the international campuses, there are 31 staff members at the home campus library.
There is little library literature detailing how international campus growth impacts the library on the home campus (Wang & Tremblay, 2009), yet there is research on the value librarians see in going global. Smith (2016) held a focus group among librarians attending the 2014 International Federation of Library Associations (IFLA) meeting in France. “Participants acknowledged the need to continue to internationalize the academic library in order to remain current and vibrant in the pervading internationalization of the academic institutions served” (p. 409). The American Council on Education surveys colleges and universities every five years about internationalization efforts. Despite claiming to be comprehensive in their data collection, they do not include the libraries at the institutions they survey (Witt, Kutner, & Cooper, 2015).

**Building a Network of Support and Communication around the World**

In 2011, the Head of Library Instruction and Liaison Services Department (ILSD) and the Dean of University Libraries visited three of the European campuses in a small team that included the director of the Faculty Development Center and an art professor serving as director of Freshman Seminars. For the St. Louis librarians, the purpose of this visit was to begin to establish closer relationships with the librarians at the international campuses. The international libraries had been operating completely independently, but as the home campus library was increasingly moving to electronic rather than print resources, having librarians sharing needs of students and faculty at the international campuses became imperative.

After the trip, the Head of ILSD and the Dean made a number of recommendations to the directors of the three campuses. These included increasing the budget for print materials for the Leiden, Netherlands campus library, supporting the efforts of the Vienna campus librarian to get his MLS, and suggestions on the designs for a new library at the Geneva campus. Further recommendations were made to University administration to solidify this network of librarians by periodically holding in-person international librarian summits.

In 2011, two long-serving librarians from the Vienna and Geneva campuses came to St. Louis to visit the main campus and learn more about the home campus library. This helped facilitate communication and partnerships between libraries. At that time there were four professional librarian positions at the international campuses, but one was vacant and one librarian was unable to travel. While in St. Louis, the librarians from Vienna and Geneva attended a number of meetings and workshops arranged by the home campus librarians. They learned about the Technical Services Department, explored the Access Services Department’s procedures related to eReserves and document delivery, and met with the subject liaisons for each degree program taught at their campuses in order to gain a deeper understanding of subject-specific resources. These activities led to an increased partnership among all international librarians and library staff throughout the Webster network.

Although the library at the home campus in St. Louis has always had an informal relationship with Webster University’s international campuses and their libraries, the Dean’s title only changed from Dean of University Library to Dean of University Libraries in August 2013. The title of librarian has also become an issue throughout the system, as two international campuses added the position of junior librarian. One campus requires an MLS or equivalent for this position, while the other treats it as paraprofessional position. At the request of the international librarians, the librarians in St. Louis are working with human resources staff across
the system to align titles with job requirements. The HR staff have been enthusiastic about this alignment as they see this need in other positions in various campus units.

As relationships developed, everyone involved acknowledged that the efforts to build a network of international librarians would only work with a strong communication infrastructure. A listserv was created to include the librarians at the international campuses and liaison librarians and department heads at the home campus in St. Louis. Two librarians in St. Louis administer the list so it can be updated as needed. Joint librarian meetings are held every month using webinar software Cisco WebEx. Calling on the phone is now easy with four digit dialing thanks to VoIP implemented two years ago by Information Technology. To facilitate additional collaboration, the international librarians also have access to Springshare LibGuides for creating research guides. Several private guides have been created so librarians across the network can help maintain the collection development policies and have a place to share practical library instruction ideas to try in the classroom.

**Establishing a New International Library**

Webster University has added two international campuses since 2011. In 2013, the University opened a campus in Accra, Ghana. University accreditation through the Ghanaian Ministry of Education focused heavily on library collections and services. More than ten percent of the report submitted to apply for accreditation was devoted to the library collection, services, and staffing.

Initially the plan was to offer programs in business and management, international relations, and communications. The St. Louis librarians worked with the library’s book vendor to develop a list of print materials needed on the shelves in the library in Accra to support these programs. A small reference collection was selected, as was a collection of materials on the scholarship of teaching to support faculty. Working with Information Technology, the librarians confirmed that DVD players used on campus would support any-region DVDs. With the goal of having 1,000 books and DVDs on the shelves for opening day, materials were purchased, shipped to the library in St. Louis, cataloged, processed for shelving, and boxed for shipping to Ghana.

At this point, every library in the Webster University system was relying on a different catalog, everything from locally-purchased OPACs to internally-developed databases in Microsoft Access. The decision was made at the outset to include the Ghanaian collection as a scoped collection in Sierra, the OPAC used at the home campus in St. Louis. Cataloging would then be centralized in St. Louis and catalogers would begin with the Ghana campus and eventually expand to include all international libraries in the same catalog. The librarian at the Ghana campus sends lists of materials purchased to the St. Louis catalogers, the items are cataloged, and spine label files are sent back to Ghana to be printed on site for final processing. Students and faculty at the Accra campus can search for materials available on the shelves in their library as well as electronic resources that are readily available. If they choose, they can increase the scope of a catalog search to include materials on the shelves at the St. Louis campus. They can then request book chapters or articles be scanned and sent electronically via Document Delivery.
In May of 2013, the Head of ILSD from St. Louis traveled to Accra to meet the shipped books and videos which had been retrieved from customs, put them on the shelves, and prepared to meet with the accreditors. In Ghana, a university accreditation requires a special visit to evaluate the library, so the visiting librarian from St. Louis joined the Webster University team meeting with the librarian from the Ghanaian National Accreditation Board. Webster received the accreditation.

The Head of ILSD has returned to the Ghana campus twice; first in December 2013 to train the Ghanaian campus librarian and again in January 2017 when there was staff turnover and a new librarian joined the campus.

**Athens, Greece Library**

While the Ghanaian campus opening went smoothly, Webster University’s newest international campus has been more frustrating in terms of libraries. In 2014, Webster acquired a campus in Athens, Greece, from the University of Indianapolis. In spring of 2015, the library Dean and the Head of ILSD traveled to Athens to evaluate the existing library collection and to meet with campus administration. The long-time Athens campus librarian was included in the meetings because she will be hired by Webster when funds are available. The Athens collection was very strong in some disciplines, such as English literature, but would require extensive updating in areas where Webster would initially be offering classes, such as management and teaching English as a second language.

It was agreed that as soon as the Athens librarian was rehired, a librarian from St. Louis would return to assist in a massive weeding of the collection and training of the librarian. The remaining collection would then be added to Sierra by the cataloging team in St. Louis. Due to the slow growth of this campus and the economic situation in Greece, the librarian has still not been rehired as of December 2017. This delay has been difficult for planning from the St. Louis librarians and for the students at the Athens campus who have no access to a physical collection while the library is locked up, awaiting finances to rehire the librarian.

While waiting for progress in Athens, the librarians in St. Louis have been working closely with the librarian and junior librarian in Vienna. The Webster University campus in Vienna moved in 2015. During the planning, the Vienna campus librarians consulted with the St. Louis librarians concerning their plans for the new library space. The collection was weeded in preparation for the move. At the point of the move, Vienna librarians and technical services librarians and staff in St. Louis brought the Vienna collection into Sierra as the second hosted international campus library collection. Going forward, selection and purchasing of materials for the campus library are handled by the local librarians while the cataloging is handled in St. Louis as it is for the Ghana campus library.

**Differing Responsibilities and Accountability**

One major difference between librarians at international campuses and those in St. Louis are duties related to textbooks. Students at international campuses have textbook costs included in their tuition and receive textbooks from the library or a small bookstore run by the library staff. The additional duties of coordinating textbook lists with faculty, ordering books, stocking shelves, and tracking borrowing are time consuming and require additional skills. An added layer
of difficulty comes when librarians at countries where textbooks are difficult to ship quickly need books at the start of a new term. St. Louis librarians sometimes have to step in and order eBook copies of textbooks and ship them expedited at a high cost to the university. Students from the international campuses often face textbook confusion when they study abroad at the St. Louis campus. They expect the librarians to provide their textbooks, while the expectation in St. Louis, as is common in the United States, is that students will purchase their textbooks at the bookstore.

Accreditation requirements vary campus to campus based upon country accreditation or other regional accrediting bodies and their requirements. The library is sometimes included in this, but there have been instances where it is not. A group of faculty and staff reviewed the Leiden, Netherlands campus and gave a glowing description of the University of Leiden’s library that Webster students may access for free. Nowhere in this report was online access to Webster's library resources mentioned. Other requirements that differ country to country affect how librarian and library staff jobs are performed. As Europe moves towards open access publishing, faculty members needs change and education on new concepts such as author’s rights, institutional repositories, and ORCID is necessary. Librarians across the world partner to do this type of training, co-facilitating webinars and serving on committees together.

Sometimes geographical differences and time zone differences mean communication happens less often than it should. The library at the Cha-Am, Thailand campus implemented a library catalog that is not related to the St. Louis catalog, and the St. Louis staff found out about this change after it was done. Despite the distance, librarians often encounter the same problems. It is always a tough balancing act to divide funds and resources among campuses when the student populations are very different, but acknowledging similarities and differences in needs and staffing make it easier to collaborate.

Working Together to Serve Students

Librarians at the home campus have offered a webinar series as means to reach students, faculty, and staff around the world since 2013. As interest grew, St. Louis librarians partnered with international librarians to develop and deliver some of these sessions. The librarian in Geneva worked with a St. Louis librarian to present “Optimizing your research footprint in the online landscape”, a webinar whose description reads: Is your research discoverable or are you one of hundreds of James Smiths, Mary Jones, or S. Sørensens? Should you have a profile on ResearchGate or Academia.edu? Is it important to register for an ORCID number or a ResearcherID? Have you explored Google Scholar as a tool for discovery of your work? Join your librarians for a look at the benefits and concerns with research networks and identifications.

The junior librarian at the Vienna campus served on a university-wide task force to examine purchasing and setting up an institutional repository (IR) for the university. Because of the move towards open access in Europe and her own interest and experience, she was extremely helpful and knowledgeable on the topic. The needs of each campus are different based on laws, copyright, and faculty expectations. At the time of this writing, there was not sufficient university budget to purchase an IR, but this task force would not have been successful without international librarian participation.
The St. Louis library established a library advisory board in 2015. In order to have this board better understand the library structure, the international librarians were invited to join a board meeting via web conferencing.

A librarian on the St. Louis library staff has the title of Communication and Outreach Librarian. She coordinates all of the library's social media and marketing materials. As she has increased the online presence of the libraries, she works with international librarians to make marketing material easily accessible for all library staff. The efforts in this area have included: reproducing a newsletter as a webpage for easy access by all, linking social media posts to a blog that can be reused on social media by international librarians, creating flyers for webinars that any librarian can print and post, and coordinating with Global Marketing and Communications (University Marketing) to produce materials.

**Pain Points and Opportunities for Improvement**

Although there are many examples of working together successfully, there are also experiences of miscommunication and hurt feelings. Collaboration takes time and dedication, often at inconvenient times of the day for everyone. Thailand is twelve or thirteen hours ahead of United States Central time, therefore most meetings happen at 8:00 am St. Louis time, 8:00 pm Thailand time. Solo librarians have to take time out of meetings to help students and answer questions. Web conferencing technology is not always reliable in places such as Ghana and Thailand with power outages and inconsistent wi-fi. Meetings can be inefficient when participants are unable to log on.

Because St. Louis is considered the home campus, the feeling of isolation and perception of lack of resources is felt deeply on other campuses. The home campus librarians have traveled to campuses across the world, and often library staff express the same concerns about budget, access, and communication that the home campus staff have. While the international librarians do not directly report to anyone in St. Louis or at the St. Louis library, there is occasionally confusion as to who is in charge. Often the international librarians feel that the librarian who has the most contact with them is the person in charge. It is awkward when St. Louis librarians visit international campuses and are introduced as "head of the library" when that is not the case. There is pressure to try and advocate for the international librarians in St. Louis when there are policy changes, technology upgrades during US overnight hours, collection reviews, and other changes. It is important and sometimes difficult to make sure that the international librarians are part of the conversation, especially when decisions need to be made quickly.

There are widely disparate levels of recognizing the value of libraries at each international campus. Depending on the campus director and what type of research and scholarship is required by the national accrediting bodies of the individual countries, the libraries get more or less attention. Librarians at Webster come from six different nationalities and although the university is considered an American university in each country, the language barrier can still be an issue for librarian communication. Cultural differences are present as well. For example, in meetings of all international librarians and St. Louis librarians, the Americans tend to dig in and discuss issues and problems, while librarians of other nationalities tend not to engage as readily.
Conclusion

Everyone involved feels this international network is valuable both in serving all students and in each librarian’s own professional growth in a global context. It is not easy. As progress is made in policies, procedures, collaborations, and relationships, there are constant regressions due to staffing changes, individual campus priorities, and the duties expected of the international librarians. In St. Louis, it is necessary to constantly remember the international librarians and the impact decisions made at the home campus library have on others.

The main goal for librarians across the world is to serve students in the best possible way. Student mobility is important at Webster, as many students study abroad and move between worldwide campuses. By aligning our services and working together, the library experiences are as seamless as possible for students as they move throughout the campus network. The more communication between librarians, the better the student library experience will be.

Based upon the lessons learned, general recommendations from Webster's case study are as follows:

● Be aware of the infrastructure of the country in which one is working. This can include spotty wi-fi or electricity or unfamiliar holidays. In other countries, restriction of information can result in complications for library access and resources.

● Communication is key. Think about communication up front, such as places for file sharing between libraries and libraries. Also, regular calls or video conference sessions are important to deal with small everyday problems before they grow into larger problems. Lee and Bolt (2016) recommend international librarian partners communicate regularly on topics ranging from the professional to friendly discourse that cultivates effective and rewarding relationships.

● Respect the expertise of all parties involved. Take advantage of the unique skills and talents that each librarian has and brings to the table to form the best partnership possible.

● Pay attention to resources. While electronic resources provide the most access, in many countries, there are still issues with bandwidth, little access to computers on which to get the online resources, and other related issues that might affect students in countries where a university has a campus. When negotiating vendor licensing, be up front with vendors about the structure of the university libraries.

● Facilitate relationships. When working with multiple international campuses, facilitate relationships between librarians at those campuses instead of only a one-way relationship from the main campus outward. Librarians at each campus have much to share with their colleagues in other countries that does not involve the main campus, and sometimes the best way to help is by staying out of the way.

● Think globally. When producing marketing materials, avoid jargon and idioms that do not speak to other cultures. Make materials accessible in multiple paper sizes so every country can access them easily. Plan events for your library and find a way to make a
similar or parallel experience online, or work with international colleagues to coordinate in-person events in different locations.

- With Webster’s campus network, international travel is less insurmountable than it might be at other institutions. While the travel is a privilege, it is also critically important to understand the situation of the international libraries and librarians. Several of the Webster international librarians web conference into meetings from a designated space on campus, which leaves the physical layout and resources of their library a mystery to the rest of the staff. Travel opportunities give the St. Louis librarians the full scope of the space, the student needs, and faculty expectations for those spaces and for the librarians. Meetings online and on the phone are important, but nothing can replace a multi-day visit to the campus and in-person conversations that complete the understanding of that campus's needs and unique situation. The importance of travel goes both ways. It is just as important for the international librarians to see the home campus and the St. Louis library. Meeting the library staff and gaining an understanding of who does what and why is equally essential. Showing librarians that they are equally valued when it comes to international opportunities and maintaining a stable budget for these activities is important (Becker, 2006).

- Librarians are a central point within a university campus. Engaged academic librarians hear about program changes, curricular changes, plans for the greater university, faculty interests and initiatives, and more. When they share this information between librarians, they increase our importance to the greater university community. When they listen to developments from international colleagues at their campuses, that knowledge and broader context elevates the librarians across the world and the value they bring to the university and its students.
References


Distance librarians working with an online doctoral program at Johns Hopkins University are asked by both students and faculty to provide a large amount of library support -- without being embedded into the curriculum or the individual courses. Program administrators and faculty were resistant to allow librarians into the course management system, denying them access to discussion boards, assignment updates, and course content, but still expected a high level of student support. Over a three year period, librarians respond by creating a “halo” of library services to support students at point of need, that existed outside of the course management system, but was still highly integrated into the program. Librarians explore the importance of scaffolding and linking disparate services to complement each other, building a halo of support. Student need is at the center of the plan, focusing on collaborative teaching and reflection as well as student centered learning.

Introduction

Online programs are often supported by a librarian who is fully embedded. Almeida and Pollack (2017) offer a number of definitions of embedded librarianship, and to librarians at Johns Hopkins, fully embedded librarianship requires all ideas mentioned in Almeida and Pollack’s definitions:

1. Librarians support faculty and students outside of regularly scheduled classroom instruction
2. Librarians must have an ongoing relationship with the class
3. Librarians collaborate with faculty in designing assignments and/or lessons
4. Librarians and library support enter the class space (physical or virtual)
5. Librarians and/or library support is integrated into the syllabus and/or curriculum

These activities give librarians a full picture of the student learning experience, and transform librarians from supplemental, useful support, into required critical partners in student success. These components can be seen as levels of embedment: supporting students outside of
the classroom being the lowest level, building up to Level Five, with full embedment into a course.

There are many different ways to embed, and many components to being an embedded librarian, with myriad types of support any one librarian can provide (Allen, 2017; Summey & Kane, 2016). The fully embedded librarian has the ability to diagnose and resolve research and information literacy problems when they can see student work, and work as a partner in the classroom. Many individual faculty members and entire programs welcome this added layer of interaction and support within their courses (Figure 1). So it was not surprising when an online doctoral program at the Johns Hopkins School of Education asked the library to provide this type of support for their students and faculty. The problem was that faculty and students were asking for a high level of point-of-need support, but program administrators were unwilling give librarians access to the virtual classroom. Integration into the virtual classroom allows librarians to monitor activity in course management system (CMS), review and participate in discussion boards, and offer resources and research interventions at point-of-need during the semester (Almeida & Pollack, 2017). They wanted librarians to be partially embedded, but not full partners in the program, blocking them after Level Three. They wanted librarians to have an ongoing relationship with the classes in the program, provide support outside of regularly scheduled sessions, and at times welcomed collaboration in regular lessons. But the digital door was shut to librarians. Faculty asked and librarians agreed, to figure out a way to provide the quality of Level Five embedded support without giving librarians Level Five access.

![Figure 1. Faculty ratings of usefulness of library support.](image-url)
Figuring out how to be an unembedded, embedded librarian is a challenge, and scaling embedded librarian programs can be difficult (Almeida & Pollack 2017). During initial meetings with the program it was immediately clear that faculty and administrators respected the library, its resources, and the support an involved librarian was able to provide. However, the structure of the CMS allowed for four levels of user roles: Course Builder, Instructor, Teaching Assistant (TA), or Student. With each of these roles came a level of access the program was not comfortable giving to a librarian. The highest level, Course Builder, was reserved for program administrators and instructional designers - a level that librarians did not need (or desire). The next levels, Instructors and TAs, had access to almost everything, including gradebooks and submitted assignments, which the program was not comfortable allowing librarians to access. The lowest level, Student, would give librarians limited access, allowing them to see the same content and tools as the students, but it caused administrative problems, and was not particularly useful for embedded librarianship needs. A “student” had to be fully “enrolled” in the class, meaning they would occupy a space in the gradebook, causing confusion for instructors, and difficulty exporting and reporting actual student data. Because the student view is so limiting, librarians would not have been able to create discussion boards, push out announcements, and monitor assignments and student work to provide interventions if necessary.

In other distance education programs at Johns Hopkins, librarians are often added as TA’s, or sometimes, “Auditors,” which allows them to view the course content, and participate in a limited way, without being added to the gradebook. This was not an option in the School of Education’s system, so there was no role that was mutually agreeable for both the librarians, and the program administrators. At other universities, librarians are most often added to courses as a TA (Almeida & Pollack 2017). Although some librarians at other universities may feel slighted by being designated as a TA (Almeida & Pollack 2017), the librarians at Johns Hopkins would have been excited to have any kind of access to the courses, and would not have taken offense. Faculty had made it clear that Librarians were a desirable addition to the program -- they just could not be fully integrated. In uncharted territory, the task was to create a brand new type of library support system, partial embedment, or return to a lower level of basic, unintegrated, traditional liaison activities.

Although the librarians were kept outside of individual virtual classrooms, they were allowed into the virtual program space, where all students and faculty were able to interact. It was equivalent to being allowed in the school’s coffee shop, cafeteria, or heavily trafficked hallway - a common area where resources could be posted, announcements could be made, and discussions could be had. It was close, but just outside the virtual classroom with all the detailed information important to each individual class, essentially giving Librarians Level 1 embedded access. The librarians were able to work within this site to host asynchronous learning modules, and build their own sort of virtual classroom outside their registered course spaces. The module was designed to prepare students for the intensive program as well as introduce them to the librarians who would be working with them. The module was so well received that students, faculty and administrators continued to ask for more and more support. Still, access to the virtual classroom was blocked. Undeterred, creative measures were necessary to maintain the high level of exceptional support to the program while the digital door remained shut. Over the course of three years with this program, the library has created a “halo” of library services including:
orientations, one-shot instructional sessions, online workshops, resources, and asynchronous modules that manage to support students at point of need, but do not require a librarian to be embedded into the program’s CMS.

Creating the halo involved using tools already familiar to most librarians. These tools just had to work harder and smarter in order to fully support the students in their classes -- without having the on ground, integrated view of Level Five embedded librarianship. This meant ramping up interactivity and engagement in online synchronous and asynchronous library offerings, and putting extra effort into communication and outreach activities.

All distance librarians can benefit from looking at the services they provide and think about how they can work better. Becoming embedded at any level can even reduce the workload of librarians because they can reach multiple students at one time through discussion board posts and synchronous sessions (Allen, 2017). Embedded or not, or stuck at a lower level of embedment, librarians can provide a robust amount of support from outside the CMS or being written into the syllabus, and still do so in a way that is curricula focused, and available at the point of need (Moran & Mulvihill, 2017). There are four main strategies explored to create robust, meaningful, course and program-integrated library support without being fully embedded: (1) work within existing structures to scaffold levels of support; (2) listen to students and examine both formal and informal feedback; (3) implement collaborative lesson planning, teaching and reflection; and (4) develop creative and interactive communication and engagement before, during and after student-librarian interactions. These strategies can help librarians develop their own robust halo of support for students when becoming fully embedded is not possible.

Providing Support outside the Digital Classroom Door

Faculty and students did not need convincing that librarians were valuable partners to the program - students were eager to enlist research help, and faculty referred students to librarians often when they saw a need. But one-on-one research support was not going to meet the needs of the program, and with such eager students and faculty, was not sustainable either. But without getting into the virtual classroom, and get all the access they really needed to provide the support the program desired, librarians had to think differently about how to integrate into this program at the high quality expected. Scalability of embedded librarianship is difficult, and can be a concern for many librarians (Almeida & Pollack 2017; Moran & Mulvihill, 2017), so it was important to the librarians at Johns Hopkins that they develop a sustainable, yet still personal system (Moran & Mulvihill, 2017). Over the course of a few years, by working within existing structures, listening to students, closely collaborating, and becoming more creative and interactive in their communication and engagement strategies they gradually built up to a level of support that is structured around the curriculum, scaffolded, and sustainable.

Working within Existing Structures to Provide Different Levels of Support

There are many ways that librarians can interact with students, and librarians often rely on the one-shot session to integrate integration literacy into a course. But an asynchronous online program does not have the same face-to-face, built-in opportunity for librarians to work with the students. And for the librarians at Johns Hopkins, who were asked to provide integrated support, but could not be fully embedded, they needed to think about their methods in different ways.
Instead of trying to do something completely new for the program, they decided to work within the existing structures, and the limited access to students they had, and devise new ways of making those structures and systems work better. If librarians could not get into the virtual classroom, what other spaces and methods existed that could be used? The librarians identified four existing types of support that they utilized to become the unembedded embedded librarians in the program: summer orientation, optional workshops, consultations, and LibGuides.

The library already used these methods to work with students. Summer orientations are usually the place where librarians get a few minutes to show their faces and let students know that there are friendly librarians ready to help, and they plant the seeds that there are these other supports in place to help them (workshops, consultations, and LibGuides). LibGuides already exist in an online space, but the other support systems needed to be transformed to work for the program, and for the librarians.

Integration into the Online Summer Orientation

New students entering the program were required to complete an asynchronous online orientation prior to travelling to the Johns Hopkins University campus in Baltimore, MD for a three-day intensive program preparation. Previously, librarians working with this program had achieved Level 1 embedment by creating a basic library orientation that was hosted on the program’s virtual learning community, available for students to view if they desired. Shortly after a new education librarian was hired in Fall 2014, the program started the process to move from its homegrown electronic learning community into Blackboard Learn and program administrators wanted the new content to become integrated into the greater online orientation, rather than as a stand-alone piece. With the move into the new system, librarians saw an opportunity to not just move the content into the new system, but to create something new and robust, and to really jump-start the students in their research. All parties supported development of a module that was more than just an introduction to the library, and become a more meaningful, integrated introduction to doctoral level research.

Librarians wanted the module to be robust - to give students more than just the basics of searching - they wanted it to really be able to help students get started on their dissertation research. They had some assessment and evaluation data, both formal and informal, from the past two semesters working with students one-on-one and in online workshops, but they wanted input from faculty as well. A survey was distributed to program faculty (Appendix A) to gather their input on what they wanted and needed their students to know. Faculty noted that the most important skills for students were finding and evaluating appropriate information, but that these skills were also the ones that students seemed to struggle with most. Faculty also indicated that were also interested in having the librarians embedded into the CMS - in fact, when given the options of rating each type of library support as “very useful,” “somewhat useful,” “not very useful,” or “not at all useful,” no faculty chose not useful (Figure 1). Based on this information, and data from students, the librarians developed an introduction to doctoral research module based on the research process, but tied to the students’ “problems of practice,” the basis of their dissertation research.

During the summer of 2015, the newest cohort of students completed the module as part of their summer orientation. Except, the library portion of the orientation was not required, and only about 75% of students completed the module. The module was robust, as intended: it
consisted of eight sections, with nine assignments, submitted through Google Forms. However, the students who did complete it reported high levels of satisfaction with the module, and increased levels of confidence in their research skills (Figures 2 and 3). It was also important that the students be introduced to the librarians early on, and understand the personal level of support that librarians could provide (Moran & Mulvihill, 2017). It was the first introduction that students got to the library and the librarians supporting the program, and it was enough to gain student interest, and begin seeing the librarians as valuable partners in their research.

During the academic year, the librarians used the assignments and feedback submitted by the students to make minor changes to the module for the next year. Like other libraries (Allen, 2017), assignments and quizzes were submitted through Google Forms, and were individually reviewed by a librarian, so they became intimately familiar with each student’s dissertation topic, and particular research pain points early on. However, the librarians agreed that with potentially over 100 students completing the module the next year, review of each of the nine assignments for every student was too much for two librarians to review. Fortunately, Google Forms released their quiz feature in 2016, and three of the nine assignments were able to be converted to auto-grade. As it did for librarians at King University (Allen, 2017), it significantly lightened the work for librarians to review and made the grading more sustainable, but around 350 assignments for each librarian to grade every summer was still too much. Starting in 2016, librarians only provided feedback on module assignments if a student specifically requested it. Both students and faculty remain satisfied with the module, and it helps prime the students for their future research work in the program, and acclimates them to the concept of librarians as part of their support team.
Figure 3. Student change in confidence in conducting Doctoral level research before and after completing the library research module 2015.

These modules live within the program’s virtual learning community. Even though librarians were still outside of the individual classrooms, they were able to gain a foothold in a common space. As the first of many touch points the librarians had with the program, it was the beginnings of reaching Level 2 embedment. While this setup worked for the librarians at Johns Hopkins, a virtual community space may not exist in other programs, and librarians may need to think more creatively about how to connect students with learning modules. Had the program space not existed, or were librarians shut out of this area as well, they could have utilized a platform hosted by the library or greater university to share this content. This type of content was best integrated into the program site, where the students were active, but even the completely unembedded librarian can create a similar experience outside of the classroom door, if they think creatively and utilize other resources available to them.

Workshop Series

The assignments submitted by students in the module revealed knowledge gaps for both the students and the librarians. Librarians used the information to begin planning the synchronous sessions for the semester, and work proactively to support the students in their anticipated research needs. Students were able to see where they were struggling, before their first class even began. Before students even met their professors, they started reaching out to the librarians for research support to get a jump start on their dissertation work. Librarians were also able to refer to the assignments when students requested help: they could see the student’s problem of practice, and assess their research knowledge and skills based on how well the
assignments were completed. These interactions helped librarians anticipate needs for later on during the semester, and proactively design and schedule synchronous online research workshops to tie into student coursework.

Since librarians were not embedded into the courses, they relied on information they could get from individual students and faculty on assignments and due dates. Librarians wanted to hold synchronous sessions at the best times for specific assignments, but realized that not all sections (six or seven) of each course followed the same guidelines and deadlines, and faculty were hesitant to require a synchronous component in an asynchronous program. But by offering a synchronous session for all sections of the course, librarians thought they could reach more students at once, and cut down on the number of individual questions they were getting via email (Allen, 2017). Plus, students would get their questions answered immediately, in real time. Librarians needed to work quickly, and plan enough ahead of time to allow students to make room in their schedules for synchronous sessions from the library, so the librarians folded the program-specific workshops into their existing general research skills workshop series. The benefits of using an existing service became immediately clear: marketing was in place, lesson plans existed that could be modified to address the student’s specific needs, and the structure for recording and dispersing the synchronous sessions could be used to reach students who both attended live as well as those who could not. This step was a major breakthrough: it used systems already in place, and was easily adaptable to the specific needs of the program. There was so much positive student feedback, and demand for more, that the next year the librarians were able to create a parallel workshop series specifically for this particular program.

In creating the parallel workshop structure the newly termed “public” general research workshops were open to the university at large, but integrated into the program-specific schedule as well. The librarians created a separate series for each of the three cohorts in the program, and began integrating their assignments and needs into the lesson planning. The first of this kind of workshop was on Annotated Bibliographies, based on an assignment due at the end of the first semester. The library was already holding workshops on advanced search strategies, and citation management tools, so these two public sessions were advertised along with the program-specific session on annotated bibliographies. The session focused on tackling the assignment in a step-by-step process, identifying the different parts of a critical annotation, critiquing examples, and practicing a protocol to critique their own annotations. This program-specific workshop was so successful, that it eventually led to the creation of eleven different program specific workshops that wove into the existing library workshop structure, achieving Level 2 embedment and at times reaching Level 3. Although the sessions are revised and tweaked each year, new ones can be added slowly, to increase the impact and the offerings, as librarians become more comfortable with each one. The structure of the workshop series was already in place, and adding in a few new ones every semester allows the library support to grow sustainably in a scaffolded way.

**Virtual Consultations**

Students understood that the program they were about to begin was going to be a challenge, and many of them utilized all the support they could get, very early on in their time in the program. Since the program is mostly online, a lot of the communication is done over email, and the feeling of a real person behind the email is lost. But research librarians often take research questions brought in through email and take the conversation to a face-to-face setting to work collaboratively with the student on a research problem. This was not an option for students
who were all over the world, and could not physically meet with a librarian. The complex nature and real educational research problems that the students faced could not always be resolved through email. Everything else for the program was happening in an online space, so the librarians took their research consultations online as well. The program and the library used Adobe Connect for online synchronous sessions, so many consultations occur in that space, since it is already familiar to students. But librarians will hold virtual consultations in whatever platform is most comfortable for the students: Adobe Connect, Google Hangouts, Skype, or Zoom, which the program started using in Fall 2017 for their synchronous meetings. Making consultations virtual ensures that distance education students get the same type of support as face-to-face students. At times, this is even more convenient for students, because virtual consultations can be done anywhere the student has an internet connection. The video conferencing component of the consultations added the personal touch that is so important to online programs, making the library and librarians more approachable, and students more likely to engage with librarians again (Moran & Mulvihill, 2017). Librarians already do consultations with students - just making them virtual provided an added layer of support to make the learning experience a better one for the students.

Program-specific LibGuide

The Johns Hopkins Libraries already utilize LibGuides to push resources to students, and a guide for education already existed when the new education librarian started in 2014. It pointed students to the top resources they would need for education research, and it was advertised to students in the summer orientation, workshops, and virtual consultations. But as the librarians became more integrated into the program, the LibGuide became more integrated as well. The program asks students to consider their problem of practice from many angles, take notice of other disciplines having influence on their program, and become well-rounded researchers. In their first semester, students are asked to consider their research problems through four different lenses: historical, sociological, anthropological, and economical, and gain a more comprehensive view of their issue. This course alone made the librarians rethink the entire structure of the education LibGuide: basic education resources were not enough for these students just shortly into their first semester. Pushing students to the history, sociology, anthropology and business guides were not sufficient either. Even with the synchronous sessions structured around each of these approaches to the research problem, the basic, subject specific LibGuides were missing the mark. Not only did students need different resources, they needed different thought processes. So the education subject guide remained as the starting point for anyone getting their feet wet in education research, but it also became the jumping off point for students in this program. A new LibGuide was created that centered around this particular course, and walked students through the research process, and thinking about their problem of practice in new ways. Different parts of the guide are released at key points during the semester, to give students the specific new content and guides that they need, when they need it, without pushing the cognitive load.

LibGuides already existed, and librarians were able to build upon the existing guides, and other levels of support (workshops, virtual consultations, etc.) and make the guides more robust. Since librarians are not embedded, and they are also not available to students around the clock, these guides support the students in their research and really supplement the existing structures.
No new services needed to be designed for this component to become more integrated into specific course assignments, a new layer just needed to be added.

Listening to Students and Faculty

One of the benefits of being fully embedded is direct access to students within the course management system. When denied access to discussion boards, class threads, and update notifications there was no official place to turn for course assignment updates, questions from students, or key pieces of information about the class. Without being embedded, librarians did not know what was going on, or what the students needed. The solution turned out to be simple: listen to the students. Although librarians were not embedded into the CMS, they had found other ways to interact, and become integrated. Throughout the semester, they collected data, formal and informal, through various methods, being careful not to fall into the trap of collecting data that was never used (Allen, 2004). Data came from the assignments students submitted through the asynchronous summer orientation module, and the survey that followed it. Data came from the emails sent by students, conversations in virtual consults, and polls, chat box discussions, and formative assessments and evaluations from the synchronous sessions. After every interaction with a student, data was reviewed, and sometimes, could be acted upon immediately.

When students showed a need for a particular skill or had the same questions about an assignment, librarians had the opportunity to intervene. When librarians received multiple questions about tables and figures in APA style, they created a handout with the basics to guide students through their most common issues. When faculty noted that their students had trouble synthesizing literature, librarians developed a new workshop, and a LibGuide to support it. But a key component to developing these added interventions was not just listening to students and faculty, but diagnosing the root of the problem, and determining why librarians were being asked for certain information. In 2015, program faculty asked for an APA workshop at the face-to-face, three day, intensive program preparation over the summer. Librarians were hesitant to do this, and were unsure that an APA workshop in July would be useful to students who would not be writing papers until October. Instead of just appeasing faculty and running a mechanics-based APA workshop as requested, librarians dug deeper into the problem. Did faculty really want students to sit through an hour of “periods go here,” “capitalize here, but not there,” and “Heading 1 is this style, and Heading 2 is that style?” Through conversations with faculty, and digging into the problems they were seeing with students, librarians discovered that what faculty really wanted was for students to understand that APA was not just about citations, and that scholars communicate with each other in particular and purposeful ways. After the process of really listening to the needs of the faculty, the librarians designed an engaging, interactive session on APA style complete with group work, discussions, bingo, and candy.

Collaborative Lesson Planning, Teaching, Reflection

Knowing the “why” was a key component to designing new ways to support students, but collaboration between the two librarians supporting the program was key as well. Really listening to students in every way, but also collaborating on lesson planning, teaching, and instructional reflection was integral to successful support of the program. The librarians supporting the program were on two different campuses, over fifty miles apart, making most of their interactions virtual as well. Supporting an online program can be challenging, but it can be
even more so when the librarians are physically separated from each other. It was crucial for the librarians to develop communication and collaboration systems that worked with their different roles at the library, different schedules, and different reporting structures. They work collaboratively on all aspects of the program, but make a point to collaborate intentionally and systematically in lesson planning, teaching, and reflection after teaching.

Over the years, this collaboration was the difference between creating a short virtual handout on research tools, and providing a full, hour-long interactive workshop on research workflows, which had become a challenging research concept for students in the program. For a few years, librarians had been offering two public workshops on “Research Tools” and “Academic Apps,” both with accompanying virtual handouts. These sessions were going fine, until students in this fully online doctoral program began attending. During these sessions, and in other venues, they began asking questions about research workflows: how to get their information from point A to point Z. From these inquiries, the “Research Workflows” workshop became the first workshop added because of a student specific request. It was not a surprise that students were struggling with this concept, but it proved to be a challenge for librarians to solve. Students in their first year of the program had a number of reflection papers in the middle of the semester, in addition to other assignments, that built up to an annotated bibliography. They needed to have deeply researched their problem of practice, find a number of scholarly and empirical studies, cite everything correctly, and write critical annotations for 40 sources. In addition to the Research Tools and Academic Apps sessions, the librarians already had workshops and LibGuides in place for using different citation managers, Advanced Search Strategies, a three-part workshop series on annotated bibliographies, and short workshops on four of the other class assignments. In theory, this seemed to be enough support to guide students through their first semester, yet year after year they were struggling. Consistent feedback pointed to a knowledge gap: the students did not know how to put all the pieces together.

The key problem for students was that they needed support in trying to navigate research workflows. They struggled to figure out what tools to use, how to use them, and how to organize the massive amounts of information they were getting from multiple angles. The initial solution from the librarians was a collaboratively designed, team-taught workshop that would help students see how different tools and processes could help them design their own workflow. Each librarian showcased her individual workflow, and explained her own research process. But feedback from the students, and continuing questions, proved that the examples were not resonating with them personally. The next time, librarians changed the sessions around: instead of showing example workflows, they identified common elements of a research workflow, and reviewed the different tools that could be used to make it work. But students still struggled to take those tools and design something that worked for them. The third time the session was run, the librarians did a combination of those first two iterations; they introduced different elements of the workflow, suggested tools that could be used, and showed two workflow examples. The librarians had been collaborating extensively, reviewing student feedback, and using backwards design to plan the lessons, but this third attempt at a Research Workflows workshop was still unsuccessful.

The online synchronous workshops have one of the biggest impacts on the program, and is the main avenue of librarian support. To make their collaboration easier, librarians developed a lesson plan template in Google Drive that is used for every online workshop they teach.
(Appendix B), including the lesson on Research Workflows. As a Google Document, both librarians can view and edit the lesson plan, and they can work on it collaboratively in real time or on their own. Most of the workshops for the program were designed together, and during the live session, either one librarian takes the lead while the other provides chat support, or they switch off during key points. But at this critical juncture, when they were continuing to fail in supporting students in this research concept, they took their collaboration a step further, and scheduled time to intentionally reflect on lessons together, rather than the short, informal phone conversations they would have the next day before planning the next lesson. Assessment is key to success in any instructional setting (Allen, 2004), and the librarians had been utilizing all the data they had to continue to improve their teaching. They were closing the assessment loop, and examining the data to make changes, but they needed to really spend more time on it and reflect more intentionally.

Through these critical conversations, they realized they could be using the technology more intentionally as well. The lesson planning template allows them to make notes on who is speaking during which parts, note when to push out polls or change the layout in the meeting room, or quickly access links to the lesson materials while teaching. But a key feature in Google Docs that they were neglecting gave them the ability to make comments on the lesson, even while they were teaching. They decided to begin using this feature more robustly, and take notes during lessons in real time. How did students react to this slide? What questions kept getting repeated? Where was more explanation or discussion necessary? Were students able to complete this activity in time allotted? They also added a space at the end of the lesson plan for reflection, and other notes for future recommendations on the session. Having this built into the lesson plan made it easier for the librarians to collaborate and improve each time.

After a few rounds of more intentional reflection during instructional sessions, noting the questions and comments from the session, reviewing the assessments, and discussing the feedback, the librarians were finally able to diagnose the problem: the students didn’t understand themselves as researchers yet, and had difficulty reconciling their personal processes with the workflows they needed to develop to become successful researchers. The librarians created a new session focused on student self-reflection, and thinking about their new identity as researchers. During the session, student then used those reflections to choose tools and design a workflow that would work for them.

This critical component of the library’s support with program would not have been as successful without collaboration. The asynchronous modules are reviewed and modified every year, and each semester librarians take a critical look at the workshops and other types of support they provide the students. Together, they review data, reflect, and brainstorm what they can change and improve for the next semester. It took just simple tools, like Google Drive, to make the collaboration easier, and integrating those into their regular processes, lesson planning, teaching, and instructional reflection, to really push their support of the program to a higher level.

**Creative and Interactive Communication and Engagement**

Even if librarians cannot be in the course management system, groundwork can be laid to bolster communication and engagement between librarians and students before students even
enter the virtual classroom. Creating a “series” of workshops is as easy as reordering existing sessions so they fit with the needs of a particular group. Public workshops can still be advertised as usual, but denoting and advertising the program specific series is key to pitching the workshops in a way that tells the student why it is going to be useful to them. Flipping the classroom by suggesting students bring a draft of their assignment with the promise of a peer review (and librarian feedback) component only furthers the usefulness to the student and ensures yet another touchpoint for marketing. Finally, asking faculty to advertise the workshops in their discussion boards allows the library to reach students where the librarians themselves cannot go. The librarians began using a digital flyer tool, Smore, to push a single link to students and faculty that detailed the workshop series complete with registration links and additional library support. The flyer can be updated throughout the semester, so changes can be made, updates and new sessions added, and students can even sign up for notifications through the flyer. These digital flyers can be easily shared online, through social media, and even printed if there is an opportunity for face-to-face marketing. Librarians were already creating flyers to advertise their workshops, they just changed the tool they were using to make it more accessible to their online community.

During the live workshops and classes student engagement is key to student participation. Formative assessments such as discussions in chat boxes, polls, and interactive Google Documents can keep students active, while allowing librarians to assess student learning. Virtual workshops have their advantages: students who are typing their questions and answers for the entire class to see gives the librarian a bird’s eye view of their work, while also providing an opportunity to be a “cheerleader.” This is not natural for everyone, but providing feedback to one student has a spillover effect online. For example: in a session where students are asked to generate keywords and synonyms for a search, their brainstorming can happen in a Google Sheet where everyone can see each other’s work. Calling out feedback or suggestions to a single student often results in others making similar changes in their own work. Suggestions and positive enforcement of strong work can also have the same effect. The activity is anonymous enough for students to feel comfortable typing, but public enough to allow everyone to learn.

Engagement does not have to stop after students leave the classroom. Follow-up emails with the recording of the workshop, along with any pertinent links or virtual handouts reinforces ideas for students who attended and offers an asynchronous way for students unable to attend to access the material. Evaluation forms often only provide insight at Level 1 of Kirkpatrick’s Model of Learning Evaluation, but they can provide valuable data for the librarian. Adding a space for students to submit questions, either anonymously, or with their name, can help librarians determine how to adjust in the future. If a number of students have the same question, consider creating something more robust, from a stock answer to a full workshop. Show students with action that their feedback means something.

Conclusion

The librarians at Johns Hopkins have become highly integrated into the online doctoral program at the School of Education, even though for many years they were stuck at Level Three of full embedment. They work within existing structures to make their integration easier, and strive to provide Level Five support, even with their roadblocks. They are integrated into the summer orientation, they have a solid, reusable workshop series, they created LibGuides to support general research as well as specific program assignments, and they hold virtual office
hours to communicate and work with the students who value their support. They listen to those students, and work hard to identify underlying causes and sometimes underlying, buried concerns about doctoral level research, and none of this would have worked without intentional, collaboration, and creative communication and engagement strategies. As of Fall 2017, the librarians were suddenly embedded into the CMS for the two courses for the first semester students (11 total sections, supporting about 80 students). Their hard work, scaffolding, and creating a halo of services above the program, paid off and led to greater embedment in the program.

But there are still challenges to their work. As the only two librarians who design and manage the public workshops, it can be difficult to schedule, especially as the demand for embedded support grows in this program and others at Johns Hopkins University. As Allen (2017) discovered, embedded librarianship programs can grow too quickly for a single librarian to maintain. Taking his suggestion, the Johns Hopkins librarians are working to train other librarians in teaching online synchronous sessions, and in the future, hope to gain other librarians who are interested and able to collaborate in embedded librarianship at the university.

In thinking about the relationship the librarians have with the program, because they are not fully embedded, they are often left out of crucial conversations amongst faculty and program administrators, are sometimes unaware of changes to course assignments, and just do not always have the full picture. Interaction with librarians is not required by the program, but it would be useful to both librarians and students if faculty would require students to attend certain key synchronous sessions held by librarians. It is obvious when a student has not attended a synchronous session based on their emails to librarians, and it can be difficult to catch them up to their peers. In 2017, the asynchronous introduction to doctoral library research module was required by the program, and students were not able to register for classes until it was completed. This move was significant in that it demonstrated the value that administrators and faculty place on the library, and it helps put all students on the same page as they begin their research. A next step is to take note of suggestions from other embedded librarianship programs, and develop an assessment plan for their embedded work with the online doctoral program (Almeida & Pollack, 2017; Summey & Kane, 2016). Librarians hope that as they make small steps forward in their integration with program, eventually they will become fully embedded, and integrated into course syllabi, achieving Level 5 embedment.

Being an embedded librarian, or an unembedded embedded librarian, can be challenging, and can quickly become overwhelming. But utilizing existing structures, listening to students, collaborating, and creativity can make the process manageable, meaningful, and enjoyable for librarians, students and faculty. Robust, intentional support, added in layers at different points of need, can make the unembedded or partially librarian just as valuable as the one who is fully embedded.
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Where in the World is My Librarian? Creating Cross-Campus Collaborations to Seamlessly Connect with Students when Librarians, Students, and Faculty are in Different Locations

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Abstract

Research librarians often have a specialty in certain discipline, and many academic libraries thrive on this type of arrangement to support their researchers. But more often, new interdisciplinary programs are developed that require the expertise of more than one subject expert for support. In particular, students in a Master of Education in the Health Professions (MEHP) program have unique, complicated research challenges, that can only be addressed with careful collaboration amongst multiple subject experts. However, this program and the library saw the need for additional expertise to support their students, in began a collaboration with the medical library, bringing a clinical informationist onto the library support team. Together, the education librarian, clinical informationist, and program faculty collaborate to provide excellent services to help students in their research throughout the program.

Introduction

When many people hear “Johns Hopkins” they think of the medical institution, particularly the hospital. But for the people connected to the name, “Johns Hopkins” can refer to a number of different groups, loosely connected to each other, with different reporting lines, governance bodies, resources, and communication systems. Johns Hopkins University is based in Baltimore, MD, with four campuses in the city alone, and an additional six campuses around the world. However, “Johns Hopkins” could also refer to the Johns Hopkins School of Medicine, the Johns Hopkins Hospital, Johns Hopkins Applied Physics Lab, or any other various institutions with the Johns Hopkins name. Each campus and division of “Johns Hopkins” boasts its own identity, and the decentralized nature of the Johns Hopkins institutions sometimes makes it difficult to collaborate and communicate across divisions and groups. Calendars, technology systems, staff structures and academic support, including library support, function separately amongst the divisions.

This decentralized nature allows each division to meet their unique needs in their own way. In many universities, divisions and schools are supported by the same library system, but at Johns Hopkins, there are multiple separate libraries and library systems to support the vast range of Johns Hopkins institutions. The School of Education (SOE) is supported by the Sheridan
Libraries, primarily by a librarian on the Baltimore Homewood campus in the Milton S. Eisenhower Library. This librarian also works with a librarian on one of the regional campuses to provide support for the SOE’s online doctoral program, and additional regional librarians support students face to face on their campuses. But one program in the SOE, the Master of Education in the Health Professions (MEHP) is distinct from other programs and has very different needs.

The MEHP program is a collaboration between five separate Johns Hopkins schools: the SOE, School of Medicine (SOM), School of Nursing (SON), Bloomberg School of Public Health (BSPH), and the Carey Business School (CBS) - all of which are supported by different librarians, on different campuses, with different communication and reporting structures. Since the MEHP is directed by a SOE faculty member, the main library support for the program comes from the main librarian supporting the SOE, who is also the online learning librarian. However, the interdisciplinary nature of the program demands support from an additional subject expert, a medical librarian from the Welch Medical Library. This librarian is a clinical informationist, and works in an embedded librarian model with a number of different clinical departments and entities on the medical campus. Complicating matters, the Eisenhower Library and Welch Medical Library are not part of the same system: they are on different campuses, license different resources, and host different websites. The Eisenhower Library falls under the broader umbrella of the Johns Hopkins University Sheridan Libraries system, while the Welch Medical Library stands alone. This setup does not make it easy for seamless research experiences for the MEHP students, who need to access both libraries, and would benefit from the expertise of both librarians.

The MEHP students themselves have very complex, overlapping identities. For much of their careers, students have been medical practitioners, and have followed research and scholarship conventions familiar to them in their field. Upon entering the MEHP program, students find themselves in the unfamiliar world of educational scholarship. Students who are excellent clinical researchers struggled to transform their regular clinical research practices to the demands of the field of education. Librarians have the unique challenge of not merely teaching students how to do research, but helping students shift their thinking, and their identities, from medical practitioners and clinical researchers to education researchers and teachers. Not only is the shift a challenge for the students, many are also first-time online learners. However, through innovative thinking, strategic planning, and intentional programming, the librarians and MEHP faculty have created a web of support that crosses campuses and disciplines, and meets the unique needs of full-time medical professionals engaged in a part-time online master of education program.

Implications

The inability to overcome the barriers of online learning and distance education impacts the program on three levels. First, MEHP students would be required to access and navigate two discrete library systems (Milton S. Eisenhower Library for education, Welch Medical Library for medical) to address assignments. Second, the MEHP is founded on interprofessional collaboration. Faculty from different disciplines in different schools integrate their multidisciplinary expertise into their teaching. The inability to create a similar supportive and seamless library service system would impact the integrity, image, and external marketing of the
program. Third, within the MEHP program, students engage in the study of health professions education, health professions educational research, and health professions educational leadership. Approaching the literature from the viewpoint solely from education or solely from health would miss the gestalt of the integration of this work and would be a serious flaw.

The collaboration between the two libraries and librarians is beneficial for the librarians, the individual students, and the program as a whole. Most schools and programs at Johns Hopkins are supported by a single librarian, who focuses in the subject or disciplinary area of the school. Since the MEHP program is so interdisciplinary, although a single librarian could support it, the collaboration between two subject specialists better serves the students and the program, and makes the support easier and more streamlined for the librarians. Instead of a single librarian supporting the program, and frequently calling on others (mainly, medical librarians) for consultative or instructional support, the partnership allows for both librarians to be prepared to support the students. Instead of consulting on an as-needed basis, the partnership allows the librarians to plan ahead, anticipate the needs of students and faculty in the program, and work more efficiently. Additionally, the collaboration makes it easier for students to get the help they need more quickly and easily.

**Emergence of Health Professions Education Programs**

Physicians interested in clinical teaching began to search for opportunities to advance their knowledge and competence in education to add to their medical skills. In the 1990s health professions education masters degrees began to emerge to prepare faculty and staff to respond to the growing complexity of health professions education (Tekian & Harris, 2012). Between 1996 and 2012 these programs grew in number from 7 to 76 and then to 121 in 2014 (Tekian, 2014). Today there are approximately 160 master’s degree programs in health professions education worldwide (Artino et al., 2017).

The little research that is available on master degree programs in health professions education has been limited to few researchers who focused on their geographic dispersion, description, enabling characteristics, components, drivers (Tekian, 2014; A. Tekian & Artino, 2013), and most recently on the development of standards (Tekian & Taylor, 2017). These studies quantify the number of programs that are available on site, online, and both onsite and online. Such studies do not describe the character of the online experience. In 2012, two-thirds of these programs were sponsored by medical schools (Tekian & Harris, 2012).

These studies also describe masters programs in health professions education in three modalities: located within a single institution, situated in a different location/institution from the home institution with support for delivery, or as consisting of a program which draws faculty from across the globe (Tekian, 2014). Of these descriptive research studies none mentions interprofessional collaboration, library cooperation and collaboration, nor the role of librarians and informationists in support of advanced degree health professions education programs. One study compares two different interprofessional programs, the Cleveland Clinic and Johns Hopkins University (Ungaretti et al., 2016). This comparison describes the collaboration with an external school for the Cleveland Clinic and with internal schools for Johns Hopkins University.
The comparison does not describe in detail the collaboration with the libraries associated with the institutions.

**Emergence of Health Professions Education at Johns Hopkins**

As interest in health professions advanced degree programs grew in the 1990’s, physicians at Hopkins advocated for the establishment of such a program at their home base. In response, a collaboration was established between the institution’s School of Medicine (SOM) and the School of Education (SOE). Over time, faculty from these schools worked together to begin to plan such a program, and in the interim designed and offered an introduction to medical education course.

Efforts to design and launch a program were attempted three times. In the third iteration these schools were joined by faculty from the institution’s School of Nursing (SON), the Bloomberg School of Public Health (BSPH), and the Carey Business School (CBS). Influenced by the growing interest in interprofessional education to improve patient care, the MEHP incorporated the Institute of Medicine recommendations (Schmitt, Blue, Aschenbrener, & Viggiano, 2011). The advocacy of a SOM influential professor and the assistant dean of faculty development secured the support of the provost and the deans to loan start-up funds for the program. The agreement of the Dean of the School of Education to house the program and the hiring of a director resulted in the launch of the MEHP in fall 2011.

Faculty from the partner schools worked in interprofessional teams to develop the courses in the program. Relationships with key units - the SOE Center for Technology in Education, the SOM Simulation Center, the SOM Institute for Excellence in Education, and the SOM Bayview Faculty Development Program assisted in the identification of faculty and the development of online support. The faculty developed an interprofessional curriculum with a core focused on evidence based teaching, and two specialties in educational research and educational leadership.

Each course within the MEHP was designed to be interdisciplinary in its inclusion of various health, education, and business literatures and perspectives. Each included references and materials from the academic Eisenhower Library serving the SOE and CBS and from the Welch Medical Library that serving the SOM, SON, and BSPH. Through this work it became apparent that MEHP participants and faculty in the program needed access to both the academic and the medical libraries for support. They needed to navigate two different library systems, and to access help from disconnected librarians and informationists. A further complication was that the MEHP program was planned to move to an online format after the first year to make it accessible to a global audience. How could this program facilitate participants' interprofessional collaborations when it would be obvious to participants that such collaboration was lacking in its own structure?

The director invited the education and business librarians to meet with the medical librarian to brainstorm possible approaches to create a seamless entry into the two libraries to access materials and library support. Together they designed a plan to make a portal that would bring the faculty and participants into the library with access to both the academic and the medical resources. The librarian and informationist created the LibGuide for the program that
linked the two libraries and included the information to reach both librarians for assistance. This innovative solution appeared seamless to faculty and participants. This portal became the foundation for the development of a close relationship between the director, program faculty, and librarians. From this beginning, the librarians have expanded their collaboration to facilitate and support both the efforts of the faculty and the learning of the participants. From the faculty and participant perspective the use of the library is seamless and unified.

**Emergence of Embedded Librarianship**

Embedded librarianship has become a prominent topic over the last decade. The term itself has come to describe a librarian model whereby librarians are embedded, much like an embedded journalist, within their users' settings and locations, be they physical or online (Drewes & Hoffman, 2010). While older literature points to proximity as an important factor in embedded librarianship success, the internet age has made proximity much less of a factor. (Drewes & Hoffman, 2010) For the purposes of the MEHP program, the librarians are embedded in the sense that they are "integrated into the [virtual] classroom" and actively collaborating with the instructors of the courses (Knight, Loftis, & Charissa, 2012). The distance education aspect of the MEHP program creates a rich environment for collaboration and online instruction, including the creation of an interdisciplinary library research guide, asynchronous integration of librarians into student spaces, virtual collaborative consultations, and synchronous and asynchronous library learning.

Librarian involvement in online learning has benefits. Because the librarian is embedded in the course, faculty see first-hand the value that librarians can add to instruction. According to Wilson, "an additional benefit [of embedded librarians] is that the health faculty members have demonstrated in a variety of ways how they see more value in the role of the librarian in higher education. Faculty have indicated the value of the librarian when they have asked for research assistance for their own scholarly work and the requests for collaborating with them on other initiatives" (Wilson, p. 494). Embedded librarianship brings with it the possibility for relationship building and future collaborations with both students and faculty, much as it was originally intended.

**Librarian Collaboration across Campuses and Disciplines in the MEHP Program**

**Shared Interdisciplinary LibGuide**

As a fully online, mostly asynchronous, international program, the librarians must think creatively how to best connect with the students. The initial solution was to ask a librarian from the Welch Medical Library to serve as a co-liaison to the program, together with the Eisenhower Library librarian, and create a shared LibGuide to connect students with the resources they need all in one place. In the MEHP program especially, it has been important to cover topics not only related to education but to clinical research as well. Students choose research topics based on their coursework as well as their own personal interests. A radiologist, for example, may be interested in radiology education and curriculum development, and a nurse who runs a nurse educator program in a unit may be interested in nursing education, in addition to professional development programming. But students in the program overwhelmingly go straight to PubMed
for all of their literature needs, and they are unaware of other resources they can use to support their research. The guide provides a platform in which librarians can introduce to students new resources, better suited for their education and interdisciplinary research. As a single site for students to go, they can still access PubMed from the LibGuide, but they have easy access to the unfamiliar, but more appropriate resources for their interdisciplinary research.

**Asynchronous Integration of Library Support into Online Student Spaces**

Over time, the shared LibGuide proved to be not quite enough to support the students as the program grew. Additionally, demand for librarian involvement in the online space increased that could not be met through a LibGuide and email reference support. Many academic librarians and research institutions struggle with the same challenges when it comes to distance learning. Wilson (2015) correctly notes that academic librarians wear multiple hats which may in any given day range from instruction to subject-specialist liaison, reference (both ready and complex), and teaching in credit courses. Many of the questions librarians were getting from students in the MEHP program were basic, lower-level questions related to using the library or conducting research, and students were not using the library and its resources to its full potential. Additionally, distance education students also do their work at all times of the day (and night), and librarians are typically not available on the weekends or outside of regular business hours. To mitigate this, librarians created a basic online orientation that focused on general library tools and resources, such as the library catalog, and APA style. This orientation was housed in the SOE’s homegrown course management system, and was accessible to all students in the MEHP program. It provided students with introductory information, but did not contain any integrated assessment, or active learning. This first step helped to point students in the right direction, but it was still not fully engaging MEHP students and helping them leverage the resources, or helping them develop information literacy and research skills.

The next step began with a new librarian coming in to support the SOE in 2014. She saw the gap in the content and wanted to really leverage the online learning platform and create a more research-focused library orientation for MEHP students. This module, however, was short-lived, as the next year, the SOE moved from their homegrown system, the Electronic Learning Community (ELC) to Blackboard. Content from the ELC had to be manually copied into the new Blackboard system, so the education librarian took the opportunity to completely reconstruct the content in the module to make it more tailored to the specific research needs of the MEHP students. But before developing the content, research needed to be done to see what the students really needed, and what faculty expected, in an online library module. In the spring of 2015, the librarian distributed a survey to MEHP faculty to gauge the needs of a new module (Appendix), and help drive the planning of library support for the program. The survey results indicated that faculty expected their students to be at least competent in the following skills after completing a library research module: writing researchable topics and questions, creating keywords based on concepts, developing effective search strategies in education databases, identifying appropriate education databases for their research, and choosing appropriate sources for individual assignments (Figure 1). Faculty also indicated in the survey that the skills their students struggled with the most were: Designing answerable research questions, synthesizing literature, and using appropriate sources. This information was used to create the new module for the new program site in Blackboard.
Figure 1. Faculty expectations of students after completing the library module.

The result was content hosted in the MEHP program site that was split into two parts: library orientation, and introduction to research. New students needed basic orientation information, but the asynchronous nature of the program made it difficult to run a live orientation session. Additionally, students could be working within two separate library systems at any given time and accessing resources from both the academic and the medical library. This introduction was key to setting students in the right direction for accessing what they need. As an online, asynchronous orientation to the library, it allowed students to get acclimated to their new library systems, on their own time, and it was available in perpetuity so it could be referenced later. The second part of the module, introduction to research, further addressed the needs indicated in the faculty expectations survey, and includes the basics of developing a search strategy, identifying appropriate databases, and evaluating information. These modules were meant to be just the start of student and faculty interaction with librarians throughout the course of the program. Faculty are reminded every semester about the modules and additional support that librarians can provide. As an added layer to librarian support for the online students, faculty are strongly encouraged to direct their students to the librarians for focused, individualized research support through virtual consultations, and build on the skills practiced in the introductory module on an as-needed basis.

**Virtual Collaborative Consultations**
The two librarians, each coming from different disciplinary backgrounds, offered a spectrum of knowledge to clinicians-turned-educators. In the beginning of the collaboration between the two librarians, often, one librarian would be contacted by a student first, and she would work with the student on his or her research challenges. However, more often than not, the initial librarian would contact the other librarian at some point during the interaction to add additional support and subject expertise. Some virtual consultations occur asynchronously, over email, so it was easy to bring the partner librarian into the loop. But during synchronous consultations, online or over the phone, there were sometimes delays in finishing a consultation and meeting an information and research need when the other librarian was not immediately available to jump in. Sometimes, even in emails, it could be difficult to read back through messages and fully understand the scope of the research problem. In 2016, the librarians started holding collaborative consultations, both synchronously and asynchronously, to provide better support to both students and faculty.

The first change to make this process more collaborative was to immediately start bringing the other librarian into the loop whenever a research question was asked via email. This way, both librarians have all the information at the same time, and can respond appropriately based on their own knowledge, and if the consultation needs to move to a synchronous meeting, scheduling and preparing for the meeting becomes a bit easier. The librarians often use Google Drive to prepare before consultations, and share the document with students to be used and edited during a consultation. Synchronous consultations are hosted through Adobe Connect, Google Hangouts, Skype, or Zoom, based on the needs of the session and preference of the students. All of these options allow for screen sharing, chatting, and video sharing, so students, librarians, and faculty can talk and work together in real time, even when they are in different parts of the world. Since there is a lack of a face-to-face connection in many distance education programs, including the MEHP, students, and instructors, can tend to feel isolated (Rangecroft, 1998), and librarians wanted to have a small part of making the online experience more human. Distance education learners "have fewer connections to each other than those who attend class in a traditional setting" (Piercy, 2000, p. 669). Therefore, the impetus to create quality programming that is interactive and engaging is strong. It is also important that students have the opportunities they need to ask questions. These types of video conferencing applications can help mitigate the isolating feelings that students may sometimes experience, and adds a more human element to the entire program experience that focuses so much time on individual work. Virtual consultations with video conferencing provide that face-to-face connection that students need, and it also helps the librarians be seen as supporters and collaborators in the program, rather than just email reference service providers.

One of the major benefits of video consultations is that it can bring together multiple people who are in different places, with different perspectives, who can work together to support students. While the faculty bring their own expertise to the educational process, librarians also contribute through "knowledge of [specialized] resources, information search skills, teaching skill, and understanding of the research process, and questioning strategies" used in a typical reference interview interaction (Donham, Green, & Williams, 2004, p. 315). The decision to include both the education and the medical librarian on consultations promotes a cooperative environment where each librarian can contribute her skills. The ultimate recipient of the collaboration is the student, who can now approach his or her research with the input of two
librarians focused solely on their needs. As it often happens in these consultations, each librarian, faculty member, and the student can be on four different campuses, but working together towards the success of the student in real time.

**Synchronous Library Learning**

Distance education has historically been a great option for students who cannot attend classes in person because of any combination of schedules, location, and time. Most components of the MEHP program are asynchronous, but faculty hold synchronous sessions for their courses periodically to review an assignment, hold a live discussion, or answer questions. Librarians often hold one-shot sessions for face-to-face classes, and faculty sometimes requested that librarians to do the same in the online space. Many faculty who recognized the value of library support wanted their students to engage with librarians, which led to many requests for librarians to “show them the library resources,” or “tell them how to find peer reviewed articles,” even though literature searching was not a component of the course. These general sessions were unsuccessful, and of little interest to students because they were not able to immediately put the ideas into practice. For courses that did have a research component, librarians were more than happy to design an interactive lesson tailored to the needs of the course. However, they quickly realized that multiple faculty were asking for the same concepts and skills to be covered in their different courses. Because of this, students were getting the same sessions and materials multiple times Faculty wanted to make sure their students were getting the information but were not aware of the repetition in programming. While repeated sessions can be useful, the librarians understood that they needed to be more strategic in their support of the program.

The education librarian already ran a schedule of synchronous sessions for a different SOE online program, and tried to implement a similar schedule for the MEHP students. To overcome barriers like location and time, the librarians formulated a schedule of generalized synchronous instruction sessions, based on general research and information literacy skills, and previous faculty requests. Topics included search strategies, critical appraisal, annotated bibliographies, concept mapping, and reference management tools. The session schedule was posted on Blackboard, both within the general MEHP program and in the courses, with reminders disseminated by e-mail. Synchronous sessions were then recorded and posted for students who wished to view the session and complete the activities on their own at a later date. Students and faculty are also invited to suggest topics for instruction on a case-by-case basis, at which time the librarians collaboratively work to create a new lesson plan and schedule the session at the convenience of the class. However, these sessions were only moderately successful. Few students attended the sessions live, and the librarians had to cancel many sessions ahead of time due to low registration.

According to Groenwold, student motivation for attending synchronous learning sessions ranged from a better ability to stay focused, to being able to ask questions in real-time, to the desire to not miss any essential information for learning (Groenwold & Knol, 2013). Student reasons for not attending a live session, in the same study by Groenwold and Knol, included the lack of convenient time and a preference for viewing a pre-recorded event (Groenwold & Knol, 2013). Offering both asynchronous instruction and synchronous instruction allows students to have options to attend and to learn. Those who cannot attend a synchronous session can view the
materials once they are posted online. However, the sessions designed by librarians are not webinar-style, passive lecture sessions. Each requires active participation on the part of the student, through various formative assessment techniques such as polling, discussions, individual activities and group work through Google Drive, and peer review of work. Recordings of these sessions are not as useful to students unless they can actually participate in real time. The librarians needed to get more students to attend live in order to make the learning experience a meaningful one.

The next semester, the librarians tried a schedule of workshops again, but this time designed lessons targeted at specific courses, and held the sessions at point of need for each course, according to existing course assignments. While these workshops saw slightly higher attendance, some still were cancelled due to low registration. However, there was much more interest in the sessions, and librarians received inquiries regarding the sessions either before or after, from students who were unable to attend live. This strategy of planning well in advance, and targeting specific classes seemed to work better than previous synchronous session efforts, but the librarians felt that they could be doing better. Their sessions are designed to be interactive, and students work on their assignments during the session, and are able to get their questions answered immediately when they run into a challenge. The value of attending a synchronous session in real time cannot be matched by watching a recording of a session later. The synchronous sessions were working well for other programs - why not MEHP?

**Strategic Information Literacy and Research Skills Integration: Program Map Development**

Librarians needed to tweak their strategy again. They were successful in engaging students in other SOE programs, so they knew they needed to try something different for this group. The efforts of the librarian-MEHP collaboration gradually increased over time, and the librarians became more closely intertwined with the program. It started with a collaborative, interlibrary LibGuide, and grew to collaborative, course-integrated research based synchronous instruction sessions. As the program grew, demand for library support did as well. But, the time and resources available to the librarians was limited, and they wanted to make sure that what they were providing was not only going to add value to the program, but would be actively used by students and faculty.

In 2017, the librarians realized the need to be more strategic in how they support the program, and focus on courses with a research component. When the program switched from a homegrown course management system to Blackboard, both librarians became fully embedded into every course in the program, allowing them to provide point of need support, and connect with the students in a seamless and effective way. They realized that the non-traditional nature of the program, and the physical distance between the librarians and program faculty had sometimes resulted in inconsistent and non-strategic services. To solve the problem, and increase the level and effectiveness of library support, the librarians developed a program map to help them determine how to more strategically interact with the program. The map tied library resources and support to curricular goals, and identified ways to work collaboratively with faculty to bring those resources to students at their point of need.
To create the program map, librarians reviewed each course, its learning outcomes, syllabus, assignment and schedule, and matched it to existing and potential library interventions. Every assignment in each course was examined for research or information literacy components, and if appropriate, matched with an applicable library intervention. A complete listing of potential librarian interventions and support within the curriculum was then mapped based on the course sequence of the program. The challenge was that some students progress through the program by taking one course at a time, while others take the option to progress two courses at a time. Since students are not part of a cohort, they may be taking different courses at different times, making the scaffolding of the library support a challenge. One of the problems earlier addressed was that students were getting repetitive library support, or support at the incorrect time. The map is helping to prevent this as much as possible, by placing key research and information literacy interventions in places where students will most likely need it. It also helps to identify areas where there may need to be repetition, or multiple options. For example, the program map revealed that many MEHP courses require a presentation of some sort. The librarians already offer a series of presentation skills synchronous sessions that can be adapted to specific course assignments, but can also be run as stand-alone sessions. With the program map, librarians can make better decisions on when to offer the presentation workshops, and whether or not to tailor them to specific courses. For this particular skill, effectively presenting information, the prominence of this within the curriculum suggests that perhaps a new solution could arise, such as asynchronous tools or guides to support students in developing their skills. By putting together a more comprehensive look at the program, librarians can take these ideas, become more strategic, and ultimately, more effective in their support of the MEHP students and faculty.

**Challenges to Implementation**

While the program is no longer young, each year still brings challenges to implementation. In 2017, for example, the SOE adopted a new synchronous video conferencing software called Zoom Meetings. Because everyone, students, faculty, and librarians alike, were mostly new to learning the software, it presented some learning challenges in the beginning of the semester. But even after becoming familiar with it, halfway through the semester, librarians stopped using Zoom for synchronous instructions sessions and reverted back to Adobe Connect. They still use it for consultations and online meetings, but it did not provide the robust features necessary for interactive, collaborative, online synchronous instruction sessions. Changes like this are bound to happen again in the future, and librarians must be willing and able to adapt.

Since librarians are automatically added to all courses in the program (with student status, so librarians only see what the students see), both faculty and students must be notified each semester, and ensure everyone understands the role that librarians play in each course. During one semester, a faculty member notified a librarian that she had not been submitting assignments, and asked if she wanted to be dropped from the course. Communication in this case had clearly been lacking, and the librarian role had been misunderstood. At the beginning of each semester, librarians send an email to each faculty member teaching a course, to remind them that the librarians are in the course, and let them know the type of support that they can provide. Sometimes, faculty opt for the lowest level of support - simply having an “Ask a Librarian” discussion thread, monitored by the librarian, but others are enthusiastic, and welcome any and all support librarians can provide to their students and the course. Sometimes it can be
challenging to find a balance of the right level of support for each course, but the program map has significantly helped librarians focus their efforts in the right time and place.

Participation in synchronous sessions has been a challenge for students in MEHP. Synchronous sessions are advertised in the courses, and in the program site, early and often, in the hopes that students will save the time on their schedules to participate. But few students, if any, show up for non-required synchronous sessions hosted by librarians, even those that are specifically tailored to their course. In other fully online graduate programs in the SOE, optional synchronous sessions have been highly successful in attracting a large percentage of the students, so the low attendance numbers in this program are a concern. One of the next steps for the librarians is to investigate reasons for low attendance in synchronous sessions, and make changes based on the findings.

A final challenge lies in the fact that the MEHP program involves two librarians at different locations in separate library systems who collaborate in creating instructional materials, consultations, and general support of the program. It has been beneficial for the librarians to be proactive, communicating early and often, via email, chat, and phone to discuss planning, consultations, and instructional materials. Communication is absolutely key to cross-campus, interdisciplinary, online, collaborative embedded librarianship.

Conclusion

Despite the challenges faced in the infancy of the MEHP program, the program has grown to capacity; enrollment has grown from 31 to 130. The librarians' outreach has paid off, and they are fully embedded into the MEHP: they are automatically embedded into the Blackboard course management system by default at the start of each semester, and are included as faculty members in all aspects of the program. This embeddedness allows librarians to work proactively to support the program: by being embedded in courses they can offer support at key points in the semester for each course, and respond quickly to student questions in the course management system. Often, if one student has a question, other have it too, and the course management system integration allows librarians to meet the needs of multiple students in a single instance. And the librarians can do all of this without ever setting foot in a physical classroom, or meeting a student face-to-face.

The interprofessional nature of this program has had impact far beyond the content of the courses. The program brings together advanced health professionals from across the healthcare spectrum to learn not only the course content but the perspective and competence of colleagues from other disciplines. The program models interprofessional collaboration on multiple levels - faculty collaboration, literature sources, teaching approaches, support systems, and library collaboration and integration. Together these elements result in a unique program that has begun to produce effective leaders and change agents who engage in interprofessional collaboration and the integration to seek solutions to complex issues related to improving patient care. In addition, this collaboration has resulted in a change in the relationship of the faculty and the librarians so that the librarians are not an external resources, but internal members of the instructional team.
Embedded librarianship is exciting and usually a testament to the hard work put in by the librarian to build relationships and provide excellent support to students and faculty. Becoming a key member of a program team can make working with students and faculty easier for librarians, and provides valuable support to those faculty and students. But it can be extremely time consuming and overwhelming. When librarians were first added to all courses in Blackboard, it was a shock when logging into the system and seeing all sections of all courses suddenly appear. There was an innate desire to be intimately involved in each course, but for the first semester, it was impossible. And not all courses needed deep integration at all times. The program map not only helped to identify the research intensive courses, and help librarians determine where to focus, it also helped librarians create a timeline, and better plan their own schedules based on the needs of the different courses. Librarians invited to become embedded in any course should carefully consider the needs of the course, and gather as much information as possible, such as syllabi, assignments, and deadlines before agreeing to be embedded.

Any successful program will be successful because of its participants' willingness to adapt and change over time. The MEHP program, and the library support within it, have evolved and adapted over time from its inception to the present. Future directions will involve solicitation of feedback from both the faculty and the students to identify those areas in which the program could still stand to improve, from content and instruction offered to the format in which it is offered. As a step in this direction, the MEHP is currently undergoing a program evaluation to provide evidence of its impact and to inform the need for change to guide its future development. This too is an interprofessional collaboration between the School of Education and the School of Medicine. From the librarian’s perspective, they are constantly monitoring feedback from consultations, asynchronous learning, and synchronous sessions to improve their support. Since the program is now at capacity, and is stable in its program, systems and processes, the opportunities for librarian collaboration with the program can only continue to grow. The classes offered remain relatively standard, aside from special topic requests made by faculty on a case-by-case basis. Syllabi and course materials undergo routine revisions every year, but do not undergo complete overhauls very often. The stability allows the librarians to plan ahead, and focus on new areas for even deeper integration. One potential future step is to write the librarians into the syllabus: their contact info listed, synchronous sessions scheduled ahead of time and required, and/or integration of asynchronous learning activities as appropriate for course assignments.

The MEHP program has been a success on a number of dimensions - faculty development, publications, promotions, job advancement, interprofessional collaboration, interdisciplinary content, and financial viability. However, never was it imagined that the effort to make a common access point for the program to the library would have resulted in the extensive and fruitful collaboration that has developed among the faculty, librarian, and informationist today. If done strategically and intentionally, embedded librarianship can take many forms, and cross campuses and disciplines, providing meaningful learning experiences and developing strong student-faculty-librarian relationships around the world.
References


Appendix: MEHP Research Skills Needs Assessment

The library provides a research module within the ELC for MEHP students to brush up on their research skills during their orientation. Since the module has been a part of the orientation for about two years, the Library would like to complete a needs assessment of the module. We want to know how our tools and resources have impacted your students' research and how we can better support your program in the future. To help us better understand the needs of the MEHP community, please respond to the following survey regarding student research skills, as well as library resources and support. Your responses to this survey will remain anonymous. If you have questions regarding this survey, please contact the Librarian for Education, Liz Johns, at emjohns@jhu.edu.

Section 1: Expectations of Students Before Entering the MEHP Program

Students are expected to have the following skills upon entering the MEHP program, before they complete the research module: (yes/no/learned during the course of the program)

- Students can scale their research based on the parameters of individual assignments.
- Students can create a research plan based on their research topics.
- Students should know where to start their research to find appropriate medical sources for their research assignments.
- Students should know where to start their research to find appropriate education sources for their research assignments.
- Students can execute effective search strategies in medical databases.
- Students are familiar with quality resources in the medical research field.
- Students are familiar with quality resources in the education research field.
- Students know the difference between scholarly and non-scholarly sources.
- Students can locate a diverse range of sources for their research assignments.
- Students have working knowledge of appropriate citation styles.
- Other: (open comment box)

Section 2: Expectations of Students After Completing the Library Module

To what level should students have mastered the following skills after completing the library research module? (novice, beginner, competent, proficient, expert)

- Students can write researchable topics and questions.
- Students can create keywords based on concepts.
- Students can develop effective search strategies in medical databases.
- Students can develop effective search strategies in education databases.
- Students can identify appropriate medical databases for their research.
- Students can identify appropriate education databases for their research.
● Students can choose appropriate sources for individual assignments.
● Students understand why they need to cite sources in academic work.
● Students know where to find resources to help them cite in the appropriate citation style.
● Students can properly cite sources.
● Other: (open comment box)

Section 3: Library Support throughout the MEHP Program

The Library offers support to students and faculty throughout the course of the MEHP Program. The following are suggestions of a few ways the Library can provide this support. Please let us know what would be useful to you in your classes. (very useful, somewhat useful, not very useful, not at all useful)

● Students should contact Librarians on an individual basis for research assistance.
● Students must complete at least one library workshop to further master research skills.
● Librarians are embedded in the ELC to advise students through discussion boards.
● Librarians are invited to assist on specific research assignments.
● Librarians are consulted during research based assignment creation to support faculty.
● Librarians consult faculty about obtaining new resources to support the needs of the program.
● If you have other suggestions or requests please write them here: (open comment box)

Section 4: Final Comments

When answering the following questions please consider the work produced by the students you are currently teaching.

● Please list the top three research skills with which your students struggle.
● What do you feel are the most important research skills students need to complete the MEHP program?
Supporting Student Success in the First-Year Experience: Library Instruction in the Learning Management System

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Abstract
This article discusses how the Library and Office of Institutional Research at a public college measured the relationship of an online information literacy module in the learning management system with student success metrics in a first-year experience course. Specifically, the authors examine the relationships of an online instruction module, online module completion status, library use sessions, and student success metrics, such as semester grade point average (GPA), one-year retention, and academic standing. The results suggest that students who participated in the online information literacy module had better student outcomes than those that did not participate in the module. Research assignment grade and library use sessions are found as significant predictors of student semester GPA and one-year retention, controlling for high school GPA, student characteristics, and utilization of student support services. Practice implications are discussed.

The need to provide sustainable and effective library instruction to rapidly growing student populations, particularly of distance and online students, has caused many libraries to reconsider the one-shot model and move toward more scalable instruction initiatives. At the same time, the imperative for academic libraries to demonstrate their impact on student success has librarians assessing their instruction in new ways. As a result, the learning management system (LMS) has become an increasingly attractive platform for integrating and assessing library instruction within the curriculum. The LMS allows librarians to assess the impact of online instruction on student success metrics, such as GPA, retention, and graduation, because it “offers abundant data tracking possibilities, and the ability to isolate those students who watched a tutorial and those who did not” (Contrino, 2016, p. 191).

Of particular interest in both librarianship and higher education, first-year experience (FYE) programs, as a high-impact practice (Kuh, 2008), have become a vehicle for instilling basic information literacy skills in undergraduate students (Dhawan, 2014; Kim & Shumaker, 2015). Moreover, the focus on measuring and improving retention rates makes first-year courses an ideal environment for such initiatives. Due to their foundational nature and because they are often required, libraries and first-year experience programs have long been collaborators. Boff and Johnson (2002), for instance, identified that 86% of FYE programs in their study included a library component; however, additional assessment is still needed to examine the impact of these initiatives on student success.
Literature Review

With the imperative for academic libraries to demonstrate their impact toward institutional goals in more meaningful ways, a growing amount of literature focuses on how library resources and services are related to various student success metrics. Thorpe, Lukes, Bever, and He (2016) argue that “libraries must adopt the language and metrics by which other university units demonstrate their value” (p. 373). The authors look at two of the most commonly used student success metrics in higher education, grade point average (GPA) and retention rates. Studies within the library literature that examine these metrics, along with student demographic data, such as gender, race/ethnicity, Pell Grant status, first-generation status, and students’ pre-college academic characteristics, such as high school GPA and ACT scores, are expanding exponentially (Catalano & Phillips, 2016; Soria, Fransen, & Nackerud, 2013, 2017; Thill, Rosenzweig, & Wallis, 2016).

Relationships between success metrics are often measured with various library interactions and/or services points, including material check outs, online collection use, and reference consultations. Few studies, however, focus directly on the impact of online information literacy instruction, while taking into account student success metrics and demographic information. Most studies of online information literacy instruction speak more to design and implementation than to the impact on student outcomes (Johnson, 2017; Mune et al., 2015; Zhang, Goodman, & Xie, 2015). An exception to this is provided by Thill, Rosenzweig, and Wallis (2016), who aim to “illuminate for the first time the demographic landscape of online library instruction” (p. 8). Although their study does explore this previously uncharted territory, there are still aspects left uninvestigated. For example, the relationship between online instruction engagement, student demographics and success metrics, and research assignment grades achieved as they relate to first-year students.

First-year experience programs have been found to improve academic performance, increase retention rates, and support other desired student outcomes (Friedman & Alexander, 2007; Porter & Swing, 2006). Additionally, collaborations between libraries and FYE programs provide early opportunities for impacting student success and building a strong foundation of information literacy skills within the curriculum. Several libraries have already leveraged the LMS for this purpose (Lockhart, 2015; Lowe, Booth, Tagge, & Stone, 2014); however, assessment of these interventions on student success metrics, such as retention and GPA, is still lacking. As Contrino (2016) recognizes, “future studies assessing LO [learning object] impact should attempt to measure direct impact of LOs by tracking individual student performance in relation to LO use” (p. 195).

Addressing this call for research, this study examines the relationships between engagement in an online information literacy module embedded in a first-year experience course, library resource use, research assignment grade, and student success. Specifically, we examine the relationships of the online instruction module, online module completion status, library use sessions, and student success metrics (performance in this first-year experience course, semester GPA, one-year retention, and good academic standing), controlling for student characteristics (gender, age, first-generation status, Pell eligibility, race/ethnicity, and full-time/part-time status), high school grand point average (GPA), and utilization of student support services.
(academic advising, Tutoring Center, and Writing Center). To simplify, “student variables” was used to refer to “student characteristics”, “high school GPA”, and “utilization of student support services”. The following research questions guided our research:

1. Do student research assignment grade and semester GPA differ by instruction delivery type and online module completion status?

2. Do students who completed the online library module have higher one-year retention and good academic standing rates than students who did not complete the online library module?

3. Are there significant relationships among research assignment grade, library use sessions, and semester GPA, one-year retention, and academic standing?

4. Do research assignment grade, online module completion status, and library use sessions significantly predict student semester GPA controlling for student variables?

5. Do research assignment grade, online module completion status, and library use sessions significantly predict one-year retention and academic standing controlling for student variables?

**Methods**

**Context of the Study**

This study took place in a baccalaureate institution in the southwest of the United States. The College is a comprehensive public teaching college with a deep commitment to fostering educational opportunity and enriching educational experiences for a largely underrepresented, first-generation student population. A highly-diverse institution, the institutional data as of fall 2015 enrollment showed that 76% of the enrolled students were female, 54% were from ethnic and racial minority backgrounds, and over 60% were first-generation college students. In 2015, the campus had a large portion (74%) of low-income, Pell-eligible students (Nevada State College, 2017).

**Design of the First-Year Experience Course**

Working collaboratively with the first-year experience course program director, the instructional design librarian designed and tailored a module in the learning management system, Canvas, to the course-specific research assignment. Customizations for the course included adding surveys, assignments, and quizzes to informational pages and video tutorials. The pages cover topics such as search strategies, finding scholarly articles, and evaluating information. The module was intended to replace in-person instruction for the course in support of a more sustainable instruction model. Created directly within the LMS, the module offers unique opportunities to empower both librarians and instructors in customizing course content to maximize its relevance and effectiveness to students. Moreover, the module provides point-of-need instruction accessible to students whenever and wherever they need it the most.
In fall 2015, the first-year experience course included 11 sections taught by eight instructors: one instructor taught two sections, another taught three sections, and the rest of the six instructors each taught one section. The course director asked instructors to import the library module through Canvas Commons, a learning object repository within the LMS. The instructional design librarian provided an instructional handout, follow-up communications, and any additional assistance, as requested. Five of the 11 sections of the course used the module, with three of those five also receiving in-person instruction. Only one section included a participation incentive to complete the module, while students participated voluntarily in the other four sections.

Participants

Participants of this study were 374 students who enrolled in 11 sections of a first-year experience course, which was designated to help freshmen transition from high school or previous institution(s) to this College. Most of these students (98%) were freshmen, who earned less than 30 of the total credits toward their degree. Of these students, 72% were female, 34% were first-generation college students, 70% identified themselves as an ethnic minority, and 60% were eligible for Pell Grants. The average age of these students was 20 years old and ranged from 17 to 52, with a standard deviation of 5.18. Table 1 presents the characteristics of students in the first-year experiences course.

Table 1

| Characteristics of Students in a First-Year Experience Course (N = 374) |
|-----------------------------|-----------------------------|
| n                           | %                           |
| **Age**                     |                             |
| 17-24                       | 326                         | 89.8 |
| 25 and up                   | 38                          | 10.2 |
| **Gender**                  |                             |
| Female                      | 268                         | 71.7 |
| Male                        | 106                         | 28.3 |
| **First-Generation**        |                             |
| First-Generation            | 127                         | 34.0 |
| Non-First-Generation        | 247                         | 66.0 |
| **Pell Eligibility**        |                             |
| Not Eligible                | 151                         | 28.1 |
| Eligible                    | 269                         | 71.9 |
| **Race/Ethnicity**          |                             |
| White                       | 111                         | 29.7 |
| Hispanics                   | 151                         | 40.4 |
| Black or African American   | 26                          | 7.0 |
| Asian                       | 30                          | 8.0 |
| Two or More                 | 25                          | 6.7 |
| Other                       | 31                          | 8.3 |
| **Enrollment Status**       |                             |
| Full-Time                   | 269                         | 71.9 |
| Part-Time                   | 105                         | 28.1 |
| **Instruction Delivery Type** |                          |
| No Library Instruction      | 204                         | 54.5 |
| Online Only                 | 67                          | 17.9 |
| In-Person and Online        | 103                         | 27.5 |
| **Online Module Completion** |                          |
| Completed                   | 45                          | 12.0 |
| Not Completed               | 125                         | 33.4 |
| No Online Module            | 204                         | 54.3 |

Variables and Measures
Library-related variables involved instruction delivery type, online library module sections completion status, primary research assignment type, and library use sessions. Library instruction delivery types included in-person and online, online only, and no library instruction. Online library module sections completion status means whether a student completed at least one of the online module sections. Primary research assignment types included journal annotation, annotated bibliography, group APA paper, and no research assignment. Library use sessions were measured by how many times a student logged into online library resources through EZProxy in fall 2015, an on- and off-campus authentication system for library resources provided by the Online Computer Library Center (OCLC). Library use sessions were found significantly associated with student success metrics in a previous study (LeMaistre, Shi, & Thanki, 2018) and, therefore, were included as one of the library-related variables.

Student variables involved in this study included student demographics, enrollment status, Pell eligibility, utilization of student support services, and high school GPA. Student demographics were age, gender, first-generation status, and race and ethnicity. Age was student self-reported age. Gender in this study was coded as 0 for female and 1 for male. First-generation status was defined as neither parents earned a bachelor’s degree, and was coded as 0 for “non-first-generation” and 1 for “first-generation.” Race and ethnicity were grouped into “minority” and “non-minority” due to the small number of some racial and ethnic groups and was coded as 0 for “non-minority” and 1 for “minority”. Enrollment status, measured by academic load of the total credit hours enrolled in fall 2015, was coded as 1 for “full-time”, enrolled in 12 or more credits, or 0 for “part-time”, enrolled in less than 12 credits.

Pell eligibility refers to whether a student was eligible for a Pell Grant during the 2015-2016 academic year. The Pell Grant is the largest federal need-based financial aid program available to postsecondary education students across the United States and awarded mostly to low-income students, based primarily on the student’s or parents’ income for the previous year. Students who were not eligible to receive a Pell Grant were coded as 0 and students who were eligible to receive a Pell Grant were coded as 1.

Utilization of student support services in this study, including using academic advising, the Tutoring Center, and the Writing Center, was measured by the frequency of using each of these services, which prior studies found associated with student success metrics (Beck, Cresiski, Scinta, Thanki, & Shi, 2016; Thanki, Shi, Le-Nguyen, Haney, 2016). High school GPA, which previous studies found to be related to college student outcomes (Betts & Morrell, 1999; Cohn, Cohn, Balch, & Granley, 2004; Sawyer, 2013; Zwick & Sklar, 2005), was acquired from the student’s high school transcript and was measured on a 4.0 scale.

One of the outcome variables was student performance on the primary research assignments in the first-year experience course. This was measured by a combined grade on three types of research assignments, which included journal annotation, annotated bibliography, and group APA paper. Some sections had no research assignment components identified. To eliminate variations in assignment weighting based on points achieved and make course achievement more comparable, the percentage of the grade was used for this study.
Three other outcome variables of this study were student success metrics, including semester GPA, one-year retention, and good academic standing, and were examined using institutional data. Semester GPA was measured on a 4.0 scale based on the average course GPA of fall 2015. One-year retention was measured from fall 2015 to fall 2016 and was coded as 0 if a student was not retained and 1 if a student was retained. Academic standing was measured by performance based on the institutional policy. Students on “Good” academic standing were coded as 1. Otherwise, students were coded as 0 for lacking “Good” academic standing.

**Data Analysis**

The quantitative method was adopted, with several analytic approaches conducted to address the research questions. To address the research question, *do student research assignment grade and semester GPA differ by instruction delivery type and online module completion status?*, a one-way analysis of variance (ANOVA) was conducted to examine the mean differences in research assignment grade and semester GPA by the way of instruction delivery type and online module completion status. Although another statistical test, *t*-test, may be an option for such a comparison, ANOVA was selected because it allows for a robust test of equality of means (Shieh & Jan, 2013).

To address the second research question of this study, *do students who completed the online library module have higher one-year retention and good academic standing rates than students who did not complete the module?*, chi-squared tests were performed to examine the proportional differences in one-year retention and good academic standing between students in a first-year experience course who completed the online library module and those who did not. The reason to select a chi-squared test was due to the categorical nature of outcome variables of one-year retention and academic standing (Franke, Ho, & Christie, 2012).

In order to answer the third research question of this study, *are there significant relationships among research assignment grade, library use sessions, and semester GPA, one-year retention, and academic standing?*, Pearson correlations were performed to examine the relationships between library use sessions, research assignment grade, and semester GPA. A Spearman correlation was conducted to examine the relationships between library use sessions, research assignment grade and one-year retention and good academic standing, respectively.

To examine the relationships between library-related variables and semester GPA, a hierarchical regression was performed to test whether the library-related variables explain a statistically significant amount of variance in semester GPA after accounting for student variables. Student variables as one block and library-related variables as another were entered into the predictive equation in a hierarchical order to examine the *R*-squared change (adjusted *R*-squared change). The *R*-squared change measures the increase in predictive power (*R* squared) resulting from the inclusion of a new predictor (or block of predictors), and significance of *F* value change (a measure of whether the final model significantly improves the ability to predict the outcome variable of semester GPA) with an additional block of variables introduced. Additionally, two hierarchical logistic regressions were performed for one-year retention and academic standing, respectively, controlling for student variables. For all tests, the alpha level for statistical significance was set at 0.05.
Limitations

Although in this study we controlled for student variables, such as high school GPA, age, gender, first-generation status, race and ethnicity, Pell eligibility, and enrollment status that could impact research assignment grade and college success, we could not control for all potential variables, such as instructor factors that can impact student performance (Alos, Caranton, & David, 2015). In addition, we did not match students by their prior performance. Future studies may consider propensity score match to reduce the estimation bias.

Second, the correlational nature of the study limits the identification of any causal relationships between research assignment grade, library use sessions, and student success indicators. The sample size in some sub-categories was small and some sections of this first-year experience course did not include the online library module or an identifiable research assignment component. As a result, the findings of this study need to be interpreted with caution.

Third, since this library initiative started recently and only the inaugural data were available, more longitudinal data are needed to examine the long-term effects of such innovation. Therefore, we focused our examinations on course performance, semester GPA, one-year retention, and academic standing, which are also strong and important indicators of college success based on the literature (Harris, 1998; Kuh, Kinzie, Buckley, Brodges, & Hayek, 2006).

Results and Discussion

In terms of the differences in research assignment grade by instruction delivery type, as shown in Table 2, there were no significant differences in research assignment grade for students who participated in library instruction online only, in-person and online, or received no library instruction, $F(2, 292) = 0.21, p > 0.05, \eta^2 = .001$, indicating a small effect size. Similar results were revealed for semester GPA. Regarding the differences in semester GPA, there were no significant differences in semester GPA for students who participated in library module online only or in-person and online, or no library instruction $F(2, 372) = 0.76, p > 0.05, \eta^2 = .004$, indicating a small effect size (see Table 2).

The lack in significant difference between research assignment grade or semester GPA and instruction delivery type suggests that online library instruction can be an effective and scalable alternative to the one-shot, in-person instruction model. This is in concert with previous literature that compares the impact of online and in-person library instruction (Bordignon et al., 2016; Gonzales, 2014; Matlin & Lantzy, 2017). These results are encouraging as more instructional initiatives transition online and into the learning management system. A limitation of this study is that no in-person instruction only group existed in our sample. Additionally, only one course section that used the module made it required. Future studies may consider looking at the implications of reward (i.e. participation points) and student engagement with online library instruction.
Regarding online module completion status, we conducted an ANOVA to compare the mean difference of student semester GPA. The Levene statistic for the test of homogeneity of variances was significant, $F(1, 128) = 19.58, p < 0.01$, which suggests a violation of the assumption of homogeneity of variances. Therefore, alternatively, Welch’s $F$ test was performed since it is a robust test of equality of means. Results show that students who completed the library module performed significantly better on their research assignments than students who did not complete the module ($M = 80.61$ vs. $65.07$), Welch $F(1, 81.78) = 6.22, p < 0.05, \eta^2 = .033$, indicating a large size (see Table 2).

Similarly, students who completed the library module performed significantly better in semester GPA than students who did not complete the library module ($M = 3.02$ vs. $2.46$), Welch $F(1, 121.47) = 9.89, p < 0.05, \eta^2 = .038$, indicating a large size (see Table 2). This trend is seen across the literature (Soria, Fransen, & Nackerud, 2013; Thill, Rosenzweig, & Wallis, 2016). In practice, these findings are especially impactful for communicating library value to various campus stakeholders and align with data being collected by other academic and student service departments at many college campuses (Chiteng Kot, 2014; Walvoord & Pleitz, 2016).

Concerning the association of completion of the library module and one-year retention and good academic standing, the results revealed that a larger proportion of students (71.1%) who completed the library module were being retained than that of students who did not complete the library module (59.2%). However, the proportional difference was not statistically significant, $\chi^2(1) = 2.00, p > 0.05$, phi ($\phi$) coefficient = .108, indicating a small effect size (see Table 3). A significantly larger proportion of students (88.9%) who completed the library module were on good academic standing than that of students who did not complete the library module (68.8%), $\chi^2(1) = 6.69, p < 0.01$, phi ($\phi$) coefficient = .202, indicating a small effect size.

### Table 2

<table>
<thead>
<tr>
<th>Research Assignment Grade</th>
<th>Instruction Delivery Type</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Library Instruction</td>
<td>66.71</td>
<td>40.00</td>
<td>0.21</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>Online Only</td>
<td>70.40</td>
<td>37.14</td>
<td>2.76</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>In-Person and Online</td>
<td>67.54</td>
<td>38.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module Completion</td>
<td>Completed</td>
<td>80.61</td>
<td>27.13</td>
<td>Welch $F(1, 81.78) = 6.22$</td>
<td>$&lt; 0.05$</td>
</tr>
<tr>
<td></td>
<td>Not Completed</td>
<td>65.07</td>
<td>39.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester GPA</th>
<th>Instruction Delivery Type</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Library Instruction</td>
<td>2.56</td>
<td>1.28</td>
<td>0.76</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td></td>
<td>Online Only</td>
<td>2.76</td>
<td>1.17</td>
<td>2.31</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>In-Person and Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module Completion</td>
<td>Completed</td>
<td>3.02</td>
<td>0.87</td>
<td>Welch $F(1, 121.47) = 9.89$</td>
<td>$&lt; 0.05$</td>
</tr>
<tr>
<td></td>
<td>Not Completed</td>
<td>2.46</td>
<td>1.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
These results are encouraging, even if they are not statistically significant for one-year retention. As Thorpe et al. (2016) proclaim, “One must not discount the potential positive effect using library services may have on student outcomes. Any service that, at a minimum, demonstrates a connection between usage and improved student outcomes must be further investigated for potential wider adoption” (p. 384). Additional research is needed to further explore the relationship between library instruction and retention. Soria, Fransen, and Nackerud (2013), for example, found a statistically significant relationship between library engagement and one-year retention; however, their study included several measures of library usage beyond instruction.

Regarding the relationships among library use sessions, research assignment grade, and semester GPA, results indicated that there was a positive and statistically significant relationship between library use sessions and research assignment grade, \( r = 0.34, p < 0.01 \), library use sessions and semester GPA, \( r = 0.37, p < 0.01 \), and research assignment grade and semester GPA, \( r = 0.54, p < 0.01 \) (see Table 4). Spearman correlational analysis revealed that there was a significant positive relationship between number of library use sessions and one-year retention, Spearman’s rho = 0.32, \( p < 0.01 \). Also, a significant and positive relationship between library use sessions and good academic standing was found, Spearman’s rho = 0.29, \( p < 0.01 \). A significant and positive relationship between research assignment grade and one-year retention was found, Spearman’s rho = 0.34, \( p < 0.01 \), and a significant and positive relationship between research assignment grade and good academic standing was found, Spearman’s rho = 0.42, \( p < 0.01 \).

The significant relationship of library use sessions with semester GPA, one-year retention, and good academic standing has noteworthy implications for demonstrating library value. While assessment of services beyond circulation statistics is important to libraries, collection use remains a major measure for academic library assessment. Linking library use to key student success metrics communicates the importance of these resources and further supports library instruction. For students are often not equipped with the necessary skills to use library resources when they enter college. In fact, Head (2013) states that “college-level research is one of the most formidable challenges that incoming freshmen face” (p. 2).
In terms of semester GPA, the results from a hierarchical regression on research assignment grade, online module sections completion status, and library use sessions, controlling for student variables, indicated that utilization of the Writing Center, research assignment grade, and library use sessions were significant predictors of semester GPA. With the introduction of research assignment grade, online module sections completion status, and library use sessions into the model, $R^2$-squared increased about 30% (from 0.141 to 0.439), and adjusted $R^2$ changed from 0.105 to 0.408, which suggested that about 30% of the total variance in semester GPA can be accounted for by addition of the library-related variables to student variables, $F(13, 233) = 14.02, p < 0.01$.

Utilization of the Writing Center, research assignment grade, and library use sessions were significant predictors of semester GPA, $t(233) = 2.18, p < 0.05$, $t(233) = 8.31, p < 0.01$, and $t(233) = 3.93, p < 0.01$, respectively (see Table 5). The results revealed that a one unit increase in utilization of the Writing Center would be likely to correspond with an increase of semester GPA by 0.18. Similarly, a one unit increase in research assignment grade would be likely to correspond with an increase of semester GPA by 0.014. A one-unit increase in library use sessions would be likely to correspond with an increase of semester GPA by 0.064 (see Table 5).

**Table 4**

<table>
<thead>
<tr>
<th>Correlation Coefficients Between Research Assignment Grade, Library Use Sessions, and Success Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Library Use Sessions</td>
</tr>
<tr>
<td>Library Use Sessions</td>
</tr>
<tr>
<td>Research Assignment Grade</td>
</tr>
<tr>
<td>Semester GPA</td>
</tr>
<tr>
<td>One-Year Retention</td>
</tr>
<tr>
<td>Academic Standing</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).
Regarding one-year retention, a logistic regression was conducted on research assignment grade, online module sections completion status, and library use sessions controlling for student variables. The results indicated that, after controlling for other variables, research assignment grade and library use sessions were the significant predictors of one-year retention, Wald $F(1) = 10.48, p < 0.001$, and Wald $F(1) = 8.98, p < 0.01$, respectively (see Table 6). If there was a one unit increase in research assignment grade, the odds of the student being retained would increase by 1%. If there was a one unit increase in library use sessions, the odds of that student being retained would increase by 19%.

Utilization of academic advising was also a significant predictor of one-year retention, Wald $F(1) = 4.59, p < 0.05$. If there was a one unit increase in using academic advising, the odds of that student having good academic standing would increase by 48%. Age, gender, first-generation status, Pell eligibility, race/ethnicity, enrollment status, utilization of the Writing Center, Tutoring Center, and online module sections completion were not significant predictors of one-year retention, $p > 0.05$, respectively (see Table 6).

Concerning good academic standing, a logistic regression was conducted on research assignment grade, library online module completion status, and library use sessions controlling for student variables. The results indicated that, after controlling for other variables, research assignment grade and library use sessions were significant predictors of academic standing, Wald $F(1) = 27.24, p < 0.01$, and Wald $F(1) = 4.61, p < 0.05$, respectively (see Table 7). If there was a one unit increase in research assignment grade, the odds of the student having good academic standing would increase by 3%. If there was a one unit increase in library use sessions, the odds of that student having good academic standing would increase by 18%.

### Table 5

*Results of Hierarchical Linear Regression of Semester GPA on Student and Library-Related Variables*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.554</td>
<td>.472</td>
<td>1.17</td>
<td>.242</td>
</tr>
<tr>
<td>Age</td>
<td>.021</td>
<td>.015</td>
<td>1.42</td>
<td>.157</td>
</tr>
<tr>
<td>Gender</td>
<td>.064</td>
<td>.130</td>
<td>.50</td>
<td>.621</td>
</tr>
<tr>
<td>First-Generation</td>
<td>-.092</td>
<td>.126</td>
<td>1.27</td>
<td>.213</td>
</tr>
<tr>
<td>Pell Eligibility</td>
<td>-.214</td>
<td>.124</td>
<td>1.72</td>
<td>.087</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>-.121</td>
<td>.139</td>
<td>0.94</td>
<td>.338</td>
</tr>
<tr>
<td>Enrollment Status</td>
<td>.116</td>
<td>.163</td>
<td>.61</td>
<td>.546</td>
</tr>
<tr>
<td>High School GPA</td>
<td>.332</td>
<td>.071</td>
<td>1.20</td>
<td>.230</td>
</tr>
<tr>
<td>Academic Advising</td>
<td>.090</td>
<td>.058</td>
<td>0.83</td>
<td>.412</td>
</tr>
<tr>
<td>Writing Center</td>
<td>.177</td>
<td>.081</td>
<td>2.18</td>
<td>.030</td>
</tr>
<tr>
<td>Tutoring Center</td>
<td>.046</td>
<td>.047</td>
<td>.33</td>
<td>.739</td>
</tr>
<tr>
<td>Research Assignment Grade</td>
<td>.014</td>
<td>.002</td>
<td>.44</td>
<td>.660</td>
</tr>
<tr>
<td>Online Module Sections Completed</td>
<td>.190</td>
<td>.126</td>
<td>1.56</td>
<td>.116</td>
</tr>
<tr>
<td>Library Use Sessions</td>
<td>.064</td>
<td>.016</td>
<td>2.13</td>
<td>.033</td>
</tr>
</tbody>
</table>

Note. $B =$ the unstandardized coefficient; $SE =$ standard error; $\beta =$ the standardized coefficient.

* $p < 0.05$, ** $p < 0.01$. 

---

## Table 6

### Results of Hierarchical Linear Regression of One-Year Retention on Student and Library-Related Variables

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.554</td>
<td>.472</td>
<td>1.17</td>
<td>.242</td>
</tr>
<tr>
<td>Age</td>
<td>.021</td>
<td>.015</td>
<td>1.42</td>
<td>.157</td>
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<tr>
<td>Gender</td>
<td>.064</td>
<td>.130</td>
<td>.50</td>
<td>.621</td>
</tr>
<tr>
<td>First-Generation</td>
<td>-.092</td>
<td>.126</td>
<td>1.27</td>
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<tr>
<td>Pell Eligibility</td>
<td>-.214</td>
<td>.124</td>
<td>1.72</td>
<td>.087</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
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<td>.139</td>
<td>0.94</td>
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<td>Enrollment Status</td>
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<td>.163</td>
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</tr>
<tr>
<td>High School GPA</td>
<td>.332</td>
<td>.071</td>
<td>1.20</td>
<td>.230</td>
</tr>
<tr>
<td>Academic Advising</td>
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<td>.058</td>
<td>0.83</td>
<td>.412</td>
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<tr>
<td>Writing Center</td>
<td>.177</td>
<td>.081</td>
<td>2.18</td>
<td>.030</td>
</tr>
<tr>
<td>Tutoring Center</td>
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<td>.047</td>
<td>.33</td>
<td>.739</td>
</tr>
<tr>
<td>Research Assignment Grade</td>
<td>.014</td>
<td>.002</td>
<td>.44</td>
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</tr>
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<td>Online Module Sections Completed</td>
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<td>.116</td>
</tr>
<tr>
<td>Library Use Sessions</td>
<td>.064</td>
<td>.016</td>
<td>2.13</td>
<td>.033</td>
</tr>
</tbody>
</table>

Note. $B =$ the unstandardized coefficient; $SE =$ standard error; $\beta =$ the standardized coefficient.

* $p < 0.05$, ** $p < 0.01$. 

---

## Table 7

### Results of Hierarchical Linear Regression of Good Academic Standing on Student and Library-Related Variables

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<tr>
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</tr>
<tr>
<td>Academic Advising</td>
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<td>Writing Center</td>
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<tr>
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<td>1.56</td>
<td>.116</td>
</tr>
<tr>
<td>Library Use Sessions</td>
<td>.064</td>
<td>.016</td>
<td>2.13</td>
<td>.033</td>
</tr>
</tbody>
</table>

Note. $B =$ the unstandardized coefficient; $SE =$ standard error; $\beta =$ the standardized coefficient.

* $p < 0.05$, ** $p < 0.01$. 

---
Pell eligibility significantly predicted academic standing, Wald $F(1) = 3.91, p < 0.05$. For a Pell-eligible student, the odds of that student having good academic standing would decrease by 41% compared to a non-Pell eligible student. High school GPA was also a significant predictor of academic standing, Wald $F(1) = 4.58, p < 0.05$. If there was a one unit increase in high school GPA, the odds of that student having good academic standing would increase by

---

**Table 6**

*Results of Hierarchical Logistic Regression of One-Year Retention on Library-Related Variables*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Exp(B)</th>
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</thead>
<tbody>
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<td>0.39</td>
<td>1</td>
<td>0.53</td>
<td>1.03</td>
</tr>
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<td>Gender</td>
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<td>1</td>
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<td>0.79</td>
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<td>First-Generation</td>
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<td>0.34</td>
<td>0.67</td>
<td>1</td>
<td>0.41</td>
<td>1.32</td>
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<td>Pell Eligibility</td>
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<td>0.53</td>
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<td>High School GPA</td>
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<td>1.37</td>
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<td>0.18</td>
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<td>1</td>
<td>0.03*</td>
<td>1.48</td>
</tr>
<tr>
<td>Writing Center</td>
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<td>Tutoring Center</td>
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<td>2.27</td>
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<td>0.01**</td>
<td>1.01</td>
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<tr>
<td>Online Module Sections Completed</td>
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<td>0.34</td>
<td>3.07</td>
<td>1</td>
<td>0.08</td>
<td>1.82</td>
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<tr>
<td>Library Use Sessions</td>
<td>0.17</td>
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<td>8.98</td>
<td>1</td>
<td>0.01**</td>
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<tr>
<td>Constant</td>
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<td>1.36</td>
<td>5.85</td>
<td>1</td>
<td>0.02</td>
<td>0.04</td>
</tr>
</tbody>
</table>

*Note. B = the partial logistic regression coefficients for each independent variable; SE = standard error; Wald = way of testing the significance of explanatory variables in a statistical model; df = degree of freedom; Exp(B) = the odds ratios, which are used to assess the isolated impact of each independent variable.

* p < 0.05, ** p < 0.01.

**Table 7**

*Results of Hierarchical Logistic Regression of Academic Standing on Library-Related Variables*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Exp(B)</th>
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<td>Gender</td>
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<td>1.61</td>
</tr>
<tr>
<td>First-Generation</td>
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<td>1</td>
<td>0.23</td>
<td>0.61</td>
</tr>
<tr>
<td>Pell Eligibility</td>
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<td>0.05*</td>
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<tr>
<td>High School GPA</td>
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<td>0.02**</td>
<td>1.67</td>
</tr>
<tr>
<td>Academic Advising</td>
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<td>4.47</td>
<td>1</td>
<td>0.04*</td>
<td>1.67</td>
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<tr>
<td>Writing Center</td>
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<td>2.76</td>
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<td>2.72</td>
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<td>1.58</td>
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<td>0.01**</td>
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<td>0.66</td>
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<td>7.28</td>
<td>1</td>
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</table>

*Note. B = the partial logistic regression coefficients for each independent variable; SE = standard error; Wald = way of testing the significance of explanatory variables in a statistical model; df = degree of freedom; Exp(B) = the odds ratios, which are used to assess the isolated impact of each independent variable.

* p < 0.05, ** p < 0.01.
Enrollment status was also a significant predictor of academic standing, Wald $F(1) = 5.20, p < 0.05$. For a full-time student, the odds of that student having good academic standing would decrease by 67% compared to a part-time student. Utilization of academic advising was also a significant predictor of one-year retention, Wald $F(1) = 4.47, p < 0.05$. If there was a one unit increase in using academic advising, the odds of that student having good academic standing would increase by 67%. Age, gender, first-generation status, race and ethnicity, enrollment status, utilization of the Writing Center, Tutoring Center, and online module sections completion status were not significant predictors of good academic standing, $ps > 0.05$, respectively.

**Conclusion**

Integrating library instruction within the learning management system presents new opportunities for demonstrating academic library value through a more comprehensive assessment of student outcomes. The significant relationships between the online information literacy module and library use with student success metrics in this study are especially encouraging. Librarians can leverage the LMS as they continue to explore innovative ways of creating scalable and sustainable online instruction. Additionally, the implications for impacting first-year students and increasing retention call for additional research to explore how library services can better support first-year courses, particularly for distance and online students.
References


Lowe, M. S., Booth, C., Tagge, N., & Stone, S. (2014). Integrating an information literacy quiz into the learning management system. *Communications in Information Literacy, 8*(1), 115-130. doi:10.7548/cil.v8i1.278


Is the Medium the Message? Examining Transactions Conducted via Text in Comparison with Traditional Virtual Reference Methods

Tara Mawhinney  
Svetlana Kochkina  
McGill University

Abstract

Texting is a widespread mode of communication and libraries are experimenting with it to interact with users. This article presents the results of a study on virtual reference service. The authors seek to determine whether or not the texting service is filling a different information need than chat and email by examining the level of difficulty and the topic of questions using these different methods of communication. Findings indicate a marked difference between the type and complexity of questions sent via text and traditional forms of virtual reference, and suggest that texting fills a complimentary role in relation to other traditional virtual reference communication channels used within libraries.

Introduction

Marshall McLuhan, a famous Canadian public intellectual, coined the phrase “the medium is the message” (1964, p. 7) in the early 1960s. The phrase has just as much importance as ever today when we consider the extent to which different forms of media shape the messages that they transmit. In a context where people have ever-increasing methods of communication from which to choose, does the method they choose impact what they say? To what extent does the medium of communication determine the message? Within the context of an academic library offering a variety of methods of communication to its users, what is the relationship between the method a user chooses and what the user says?

McGill University Library is a large academic library in Canada, serving a population of 40,000 students, which has provided virtual reference service via chat and email since 2006. The virtual reference service continues to be popular with an overall trend showing a steady increase in usage with a total of 6,528 questions received in 2016-2017 academic year, the highest yet recorded. The library uses QuestionPoint, an OCLC product, as the virtual reference software. The service is not provided on a consortial basis but rather is staffed primarily by public services librarians within the institution and second-year master's students from the McGill School of Information Studies. In 2016, in an effort to ensure service excellence and responsiveness to user needs, texting was introduced on a pilot project basis as an additional means of communication between users and the library.

Texting is a popular medium of communication, especially among students. A Pew Research Center study on smartphone use reports that texting is the feature of smartphones that is the most frequently used by respondents, with younger respondents being the most avid users (2015). One of the rationales for introducing this new service at McGill was that it is an urban
campus located in the Montreal metropolitan area where students are often on the move and outside of the university’s wi-fi zones, making texting a very convenient alternative to traditional virtual reference in the form of email and chat.

In the context of assessing this new service, the study aims to discover if users contact the library via the texting service for specific types of questions, different from the kinds of questions they send through other methods of virtual reference. Specifically, the authors seek to determine whether or not the texting service is filling a different information need than other venues by examining the level of difficulty and the topic of questions using these different methods of communication by answering the following research questions:

- Does the level of complexity of the questions arriving via virtual reference vary, depending on the choice of medium through which they are sent?
- Does the type/topic of questions vary, depending on the choice of medium through which they are sent?

In addition, the authors compare the results of this analysis with their previous qualitative study of chat and email transactions dating from 2014 (Côté, Kochkina, & Mawhinney, 2016) to determine if there have been changes over time to the level of complexity and type of questions received via chat and email.

**Literature Review**

Some previous literature exists comparing texting with more traditional types of virtual reference service, namely chat and email. Gervasio alludes to the environment from which a text transaction could derive noting that “patrons text librarians from physical locations in the wider world: from a bus stop, a grocery store, a remote corner of the library stacks” (2014, p. 46). If users are contacting the library from these disparate locations, one can infer that the nature and level of difficulty of text transactions could be very different from those of other types of virtual reference. Several researchers suggest that texting transactions are very different in the type and level of questions from other methods of virtual reference. Breitbach and Prieto report that in comparison with chat and email, the percentage of texting questions of a complex nature is much lower (2012). Gervasio finds questions in texting to be quick-answer type questions and that most transactions do not consist of much back and forth interaction (2014). She claims that users “self-select which tool is best adapted to their query” (p. 54). Peters, from his experience answering text queries via My Info Quest, a mobile reference collaborative with over 50 library organizations supplying the staffing, claims most texting transactions do not require the “Great Chain of Reference Questioning” since they are often of a directional or opinion-seeking in nature (2010, p. 95). Breitbach and Prieto also report that texting is mostly of the quick answer variety, claiming that patrons are “self-regulating” the type of questions they ask in a texting environment (2012, p. 194). Similarly, Luo states that users in a texting environment often want easy and quick answers (2011). Vecchione and Ruppel’s advice to service providers is to “respond as simply as possible to a reference question” in a texting environment (2012, p. 367).

However, not all research is unanimous in finding that certain types of questions lend themselves to the texting format rather than other venues. Some literature recommends treating
texting like a venue no different from existing venues for virtual reference service. As Collard, Whatley, and Pearce state:

In contrast to some of the assumptions in the library literature that users would prefer this service medium only for short transactions, our data indicate that reference service via SMS aligns closely with the services we offer elsewhere and that the same guiding reference philosophies we employ in our other services yield higher levels of user satisfactions… it is our analysis of SMS transcripts during the past couple of years that has permitted us to fully embrace a venue-blind approach to service. (2011, p. 382)

Likewise, Vardeman and Barba’s study of three years of data from texting transactions from a library at a large, public university shows that although questions via texting tend to be short, they resemble questions asked through other virtual and in-person mediums (2014). These studies suggest that a “keeping it short” approach is not needed and that a better approach would be a “venue-blind” one, as suggested by Pearce, Collard, and Whatley, based on their findings reported in several publications (Collard, Whatley, & Pearce, 2011; Pearce, 2010; Pearce, Collard, & Whatley, 2010a; Pearce, Collard, & Whatley, 2010b).

Another issue arising from the previous literature is the dichotomy between reported high use of texting in everyday life (Pew Research Center, 2015) and its low use in libraries, as reported in previous literature (Breitbach & Prieto, 2012; Cole & Krkoska, 2011; Vardeman & Barba, 2014), questioning the long-term viability of texting as a medium for virtual reference. Vardeman and Barba attribute low use to several factors: difficulties with using texting, marketing, and users’ preference for chat over texting (2014). Breitbach and Prieto, reporting on their pilot project of texting at a large library that is part of a one of the two public university systems in California, state that texting use was low, despite similar levels of promotion as when chat reference was piloted (2012). They speculate that low use may have been partly due to long response times resulting from technical difficulties and limited service hours. Perhaps the low use indicates that users want to be able to ask more complex questions than texting enables. Another possibility is that texting requires a different kind of promotion than other forms of virtual reference. Or perhaps users simply prefer chat to texting for virtual reference. If that is the case, this would mirror findings from the retail sector, reporting live chat to have the highest satisfaction ratings among different customer service channels with a 73% satisfaction rate compared to 41% for texting, falling as the lowest-rated customer service touch point, ranking even lower than satisfaction with customer service by phone (Charlton, 2013). Likewise, previous research from two US university libraries indicate that students rank chat reference more highly than other virtual reference methods, including texting (Chow & Croxton, 2014).

Yet, despite chat being more popular and authors reporting low use of texting at the current time, is this service nonetheless worthwhile? Chow and Croxton state that although usage of texting may be low at the current time, it “may soon become a more prevalent reference medium, regardless of the type of question” (2012, p. 248). They specify that younger participants rank texting more highly than older ones and given that younger users will continue to be heavy text users, libraries should be ready to meet the need of these users via texting services. Likewise, a systematic review on virtual reference suggests that texting is likely to become increasingly important in the future (Matteson, Salamon, & Brewster, 2011), as does other previous literature (Ruppel & Vecchione, 2012).
Interestingly, Vardeman and Barba report no marked decrease in chat and email transactions when texting was implemented (2014). These findings suggest that texting is filling a different information need than other virtual reference channels. Not only that but other research indicates that texting reaches a different user group than other channels (Vecchione & Ruppel, 2012). These factors alone could justify implementation of a texting service.

As noted by Vecchione and Ruppel, the existing literature published up until 2012 shows that there is not adequate research on what people are asking in the texting environment (2012). Texting is a relatively new service, and as noted by Vardeman and Barba, much of the literature on texting in libraries reports on anecdotal evidence from a given library’s first experiences with texting (2014), rather than reporting on results from research studies. The current study will contribute to the limited existing literature by reporting on a more rigorous examination of the question of whether or not texting is filling a distinct information need.

Methods

The authors hypothesized that the medium of communication affects the type and complexity of questions, i.e. users chose to send certain types of questions either through chat, email or text, depending on the nature of the question they are asking. To test the hypothesis, a qualitative analysis of a sample of chat, email, and text transactions was conducted in order to discover and compare the levels of complexity of the questions and the distribution of questions by topic. The sample period was from June 4, 2016, to June 4, 2017, a time that corresponded to the texting pilot project. The sample consisted of 130 texts, the total number of transactions conducted via text in the pilot year, and 130 each of chats and emails, selected using systematic random sampling from the transactions that occurred in the same 12 months of 2016-2017. During the pilot period, the total number of text messages received from users in QuestionPoint was 324. The software does not allow for threading of text messages, so received individual texts were collated into meaningful transactions. After the transactions were collated, as well as after blank and duplicate questions were removed, the total number of text transactions amounted to 130. The total number of chats accepted by the library for the same period was 5,392. Due to technical issues, it was possible to retrieve only 3,807 chats from the system, all of which were from the entire duration of the sampling period. The sampling interval of 29 was used to obtain 130 chats to be included in the analyzed sample. In the same time period, 3,387 emails were received in the virtual reference software. For the emails, the sampling interval used was 26.

The transactions were divided between two librarians who coded them in an Excel spreadsheet. To ensure consistency of the analysis, a codebook was used by the authors. To enhance inter-coder reliability, previously coded questions were randomly sampled and re-coded by the other coder. For each question, the authors noted the data regarding reference transactions that was automatically collected by the software, such as means of communication (text, chat or email). The authors analyzed the content of the transactions to determine question type/topic and the level of complexity (basic, intermediate, advanced). The definitions of each level of complexity, similar to the previous study (Côté et al., 2016), were aligned with those used for gathering statistics of in-person reference transactions at McGill Library as follows:

- basic: responds to a simple question using library information sources (catalogue, website, ready reference);
• intermediate: assists users with intermediate-level questions or support, may require use of several information sources, and often involves user instruction;

• advanced: responds to a user's question using advanced expertise in the service area. Interactions are often multi-faceted and/or inter-disciplinary and subject specialists may need to be consulted.

Coders analyzed whether or not a question was referred. A referred question was defined as a case where a user was directed to another staff member or service unit to be given a response to their query. Referred questions included both those where the staff member forwarded the user’s question along to an appropriate individual or service unit and those where the user was asked to contact an appropriate individual or service unit him or herself.

The transactions were analyzed and coded using a modified coding scheme (see Appendix) that was initially developed for the qualitative study of chat and email transactions dating from 2014 (Côté et al., 2016). The same coding scheme was used in both studies to ensure comparability of the results. The comparison was done to determine if there had been changes over time to the level of complexity and type of questions received via chat and email. The only modification in the scheme consisted of further breaking down the “McGill Library Services” category of questions into three subcategories: policy, hours, and other service-related questions, while leaving all loans questions in the loans category. This subdivision was done keeping in mind that previous studies of texting, as mentioned earlier, reveal high percentages of quick-answer type questions, which we presumed would often be related to library hours and policies. However, this modification did not prevent comparison of the results with the previous study as these three subcategories can be combined into one.

After the data was recorded, the transactions were analyzed by the authors, using the coding scheme described above to compare:

• The level of complexity of questions received via text vs. via email and chat.

• The type/topic of questions received via text vs. via email and chat. The question types/topics were compared using both new subcategories (policy, hours, and other service-related questions) and a broader “McGill Library Services” category.

• The number of questions referred to another librarian or another unit received via text vs. via email and chat.

The results of the analysis for the chat and email transactions from the current study were compared with the results of the previous qualitative study of chat and email transactions from 2014. The goal was to identify if there were any trends or changes with regard to distribution of questions by level of question difficulty and type/topic, as well as in the number of referrals.
Findings

**Question Level**

The findings confirm the authors’ hypothesis that the medium of communication affects the complexity and type of questions users ask. There is a marked difference in the level of complexity between texts and chat/emails and in the type/topic of questions, as outlined below. The analysis of the levels of complexity of the questions demonstrates that users primarily chose to send basic rather than intermediate-level questions through text, with 81% of transactions being of the basic level. This compares to just 43% of chat/email transactions being basic (see Figures 1 and 2).

*Figure 1. Question Level: Text*
As demonstrated in Figure 3, the comparison between the three channels of communication demonstrates the dominance of basic-level questions in the reference transactions conducted via text messaging. The email questions show a close to even split between intermediate and basic questions, while the transactions conducted via chat, surprisingly, tend to include more intermediate-level questions than those conducted via email.
The distribution by the level of complexity of transactions conducted via chat and email was compared with results from the previous study. In the previous study, the split between intermediate and basic levels was 50%/50%, while the current results indicate a slight increase in the number of intermediate-level questions with 55% intermediate questions and 43% basic, suggesting that for chat and email overall, questions asked have become more complex. This finding confirms the anecdotal evidence of librarians at McGill that chat and email questions have become more complex over time.

**Question Type/Topic**

The results show that users gravitate toward asking questions of a certain type (on certain topics) through one channel of communication rather than another (see Figures 4 and 5).
When the distribution of question types is compared between texting and chat/email, there is a notable dichotomy in users’ choice of communication channel. In the studied sample, questions of the type that can be described as pertaining to library resources, such as “known-item-searching” and “access to e-resources,” are noticeably more frequent in chat/email (44% of the overall number) than in texting (only 11%). Conversely, 48% of queries sent via texting relate to services (when combining hours, policies, and general/other library services) as opposed to only 14% of queries sent through chat/email being related to services. The most popular question type sent via texting is “library services” accounting for 48% of questions, while for
chat/email, there is a tie between “access to e-resources” and “known-item searching,” each accounting for 22% of the total. It is worth noting that in the studied sample, the percentages of reference/research and loans/renewals queries is comparable in both texting and email/chat.

A further breakdown by the type/topic shows a notable difference in two types of service-related questions, namely queries about opening hours and library policies. While 18% of the studied sample of questions sent via text are on the subject of opening hours, in the queries received via chat/email, the category accounts for only 1% of the total number. Similarly, questions about library service policies are more frequent in text messages than in chats/email (15% vs. 5% of the studied sample) (see Figures 6 and 7).

![Diagram showing question type/ topic breakdown]

*Figure 6. Question Type/Topic: Text with Services Subdivided*
In comparison with the previous study, some interesting patterns emerge. The distribution by question topic/type was remarkably similar. Categories that did not show any marked differences are “known-item searching” (22% of the total in both studies), “loans/renewals” (18% in the past study vs. 19% in the current one), “reference/research” (17% vs. 16%), and “library services” (13% vs. 14%). The number of uncategorized questions (called “other”) decreased from the previous study (at 14%) to the current one (7%). In contrast, the number of questions related to “access to e-resources” notably increased from 16% in 2014 to 22% in 2016-2017.

Referrals

It is worth noting that the percentage of questions referred to another unit or librarian is almost double in chat/email queries as compared to the questions sent via text messaging (27% vs. 10%). The number of referrals for chat/email questions also increased in comparison with the 2014 transactions analyzed in the previous study, when it accounted for only 17% of the sample.

Discussion/Conclusion

Question Level and Type/Topic

Findings of this study show that users will gravitate toward asking certain type of questions in one venue rather than another and that the level of queries most often asked via texting is basic. The type of questions arriving via text tend to be more service-related such as hours and policies and less about specific electronic resources. Considering the “keeping it short” nature of texting interactions, the authors were not surprised that users gravitate toward quick-answer, less complex types of questions in the texting environment, as opposed to the other modes of communication offered by the virtual reference service, namely email and chat. This behavior cannot be attributed to any influence from the library, given that no specific instructions
are provided to users pertaining to what types of questions they should direct to which method of communication. These findings concur with some of the previous literature and suggest that a different type of response is appropriate to user queries within texting in comparison with chat/email. The study findings indicate that the texting service is generating different levels and kinds of questions than traditional virtual reference, suggesting that the new channel of communication fills a different information need. Given the different types of questions conducted via text, the service appears to be filling a complimentary role in relation to other traditional virtual reference communication channels used within libraries. This finding concurs with previous literature, which suggests that texting “is not cannibalizing users from chat and email services” (Vardeman & Barba, 2014, p. 175). This is a good case for more libraries to offer this service.

The guidelines provided to staff at McGill Library have been to treat text messaging somewhat differently from chat and email, mostly due to current limitations not allowing users’ messages to thread when they arrive into the library’s virtual reference software. Library staff have been encouraged to answer basic user queries in a succinct way within the texting environment and take more complicated transactions out of texting and into other mediums. Given what the current study has shown us (that simple queries within the texting being most prevalent), the policy seems apt (and will remain in place for the time being).

However, simply because the results indicate that users are currently asking quick-answer type questions does not necessarily suggest that users are averse to longer, more complex interactions via texting. The study’s findings show that texting tends to be shorter interactions on less complex topics but as cellphones and other mobile devices become the new normal for many types of tasks traditionally carried out on desktop or laptop computers, in the near future, there may be less and less of a need to treat chat, text, and email interactions differently from one another.

Not only do the study findings show that question levels between text and chat/email is markedly different, they also show that there are notable differences in question type. As noted earlier, for example, 18% of text transactions pertain to opening hours, whereas in chat/email transactions, the category accounts for only 1% of the total number. This difference could be explained by differences in locations (i.e. in front of a computer in the case of chat/email vs. elsewhere without ready access to a computer in the case of texting). As Gervasio mentions, questions in a texting environment often derive from different locations (2014), where ready access to the library website, with details about hours, is not necessarily as easy to access.

Conversely, certain types of questions are more prevalent in chat/email than in texting, such as “known-item-searching” and “access to e-resources.” The same phenomenon described by Gervasio where users of text are often seated elsewhere other than in front of a computer could once again account for this discrepancy. These types of queries usually originate when users encounter difficulties in a search of the library’s catalogue, a situation that may not be occurring as frequently when users are texting from their cell phones. At present, users may be accessing the library catalogue and many of the library’s databases from their cell phones less frequently than from laptops or desktops, given that many resources are not yet very mobile-friendly. The findings from the current study differ from what Cornell librarians reported when they noted, “It is interesting and significant that we get quite a few texts about online resources. Even when users are sitting at a computer, some users prefer to use their cell phone to get help,
rather than clicking on the Ask a Librarian web page” (Cole & Krkoska, 2011, p. 8). It is difficult to account for these differences in question type within texting from one institution to another and may require further investigation.

Another interesting finding related to question type is that in the studied sample, the percentage of “reference/research” transactions, albeit low, is comparable in texting and in chat/email. Previous literature suggests that users are not averse to using texting for complicated queries (Cole & Krkoska, 2011). Perhaps, under certain circumstances, users may prefer texting even for more complex interactions.

Referrals

The percentage of referrals in texting vs. chat/email is very different, with 27% referrals in chat/email and 10% in texting, while loans-related questions (often a source of referral) are about the same. These findings concur with Breitbach and Preito who state that not much referral is taking place in texting because the questions tend to be basic (2012). Perhaps this lower percentage is also partly due to differences in question type, namely that more questions about e-resources take place via chat/email (and often lead to referrals to collection services staff).

The current study saw an increase in the percentage of question referrals from the previous study where 17% of questions were referred. Perhaps this is due to increases in the number of questions related to access to e-resources (the share of e-resources-related questions increased significantly since the last study). The library has also increased the overall number of e-resources available through the library and often, there are questions related to their access and use. Another explanation for the increased number of referrals since the earlier study could be due to a noticeable increase in question difficulty (with the number of questions in the intermediate category having increased), perhaps requiring that librarians with specific subject specialization are needed to reply.

Texting as a Different Type of Virtual Reference Service

The overall low number of texts is difficult to explain. From the findings, it seems that texting fills a different need from other virtual reference methods and could likely benefit from either increased and/or different methods of promotion than other virtual reference. As Gervasio says, “the near-synchronicity, anonymity, and brevity of SMS set it apart from other virtual communication, but the defining characteristic of SMS is its mobility” (2014, p. 55). She urges libraries to consider the “physicality” of texting, stating that “unlike chat and email, texting is not a purely virtual experience. Texting can be immediate, personal, and influenced by a range of real-world phenomena” (2014, p. 55). Libraries should consider this fundamental difference in the way the service is advertised and accessed. It makes sense that the way users access the library’s chat/email service is via the library website because users are already in front of a computer, but with texting, there is not as much logic in advertising it on the website. Perhaps better would be to promote it in physical locations where students might be with their phones but not necessarily with a laptop in front of them. For example, Gervasio’s study led to her library promoting the texting service from physical locations near printers, quiet study zones, and in the stacks (2014). It is clear that texting is not the same kind of medium as chat and email.
People often consider texting to be a very personal mode of communication, something they use for one-on-one communication. Texting has a privileged and coveted place in a person’s day-to-day life given that it is mostly used for contact with friends and family. Kohl and Keating understood the nature of texting as a personal means of communication and their goal in launching their texting service was to render the library’s text a librarian contact information “a vital number to add to [a user’s] speed dial” (2009, p. 106). If the library’s texting contacts are in someone’s phone, they are there among privileged contacts. The personal nature of texting has implications for both service promotion and delivery. Texting is indeed a different type of virtual reference service. This is a factor to be considered in how the service is delivered.

Limitations of Current Study

One limitation of the current study is the small number of texts that were analyzed. This was the first year that the service was offered, which could partially explain its low use. However, this experience also concurs with previous findings that report low use of texting (Breitbach & Prieto, 2012; Vardeman & Barba, 2014). Also, the total number of texts and chats/emails received differ largely from each other with 324 texts and 8,779 chats/emails received during the sampling period. To mitigate this issue, texts were compared only to a sample of chats/emails selected using systematic random sampling.

Another limitation of the current study was the problem with extracting the chat transactions from the QuestionPoint software, resulting in only part of the total number of transactions being sampled, 3,807 out of 5,392. However, this is unlikely to have affected findings since the total number of chat transactions extracted was still very high (70% of the total) and covered the entire one-year corresponding to the sample of texting transactions.

Implications for Practice

The study has several implications for delivery of texting service. Important to note is the type of questions often asked via text. Considering the prominence of questions related to hours and library/services policies received via text, it would be helpful to increase the visibility of this type of information on the library mobile site.

Another implication is the need for additional and different types of promotion of the texting service. As previous research indicates, texting does not enjoy the same level of popularity as other forms of virtual reference, which is confirmed by the authors’ local experience. As noted with the McGill Library virtual reference statistics mentioned earlier, the chat/email service has grown over the years. It takes time to build a clientele with any form of reference. Especially in the context of a texting service, not only do users need to be made aware of the service, but also texting gives the library a personal point of contact with users and a place inside their personal space, their cell phone. Promotion of texting may require a different approach with a focus on physical spaces, inside and beyond the library, considering that users might be using the service while not seated in front of a computer. Publicity could focus on the presence of information about the service in physical spaces on campus (e.g. posters, digital signage screens, etc.). After additional promotional efforts have been carried out, the viability of the texting service could be reassessed.
The methods developed for the project can be easily adapted and applied for assessing and evaluating questions received by a virtual reference service in any type of library. It is a worthwhile exercise to examine question types in a given library since this surely differs from one library to another. The findings of this study can also help to better prepare reference providers for the demand for this type of service in the future.

**Future Research**

The current study points to several areas of future research. First, the question of whether users are gravitating toward other virtual reference services due to inherent difficulties with the medium, lack of awareness, reluctance to have the library inside their personal spaces or other reasons should be investigated. An interesting area of future research could be to conduct qualitative analysis via in-person interviews and/or focus groups of user preference for chat, text, and email, and to further investigate in what context and for what reasons users choose a medium to contact the library, be it email, text or chat. It would be useful to conduct a qualitative investigation through interviews to determine what makes users choose texting over chat, especially in the context of cell phones becomingly primarily smartphones equipped with the internet (where chat services can also be utilized). This future study could also investigate in what types of circumstances, if any, users would find it advantageous to conduct an advanced query via text.

Future research could shed additional light on whether or not texting should be treated differently from other methods of virtual reference and whether or not a “keeping it short” or a “venue-blind” approach to texting, as advocated by Pearce et al., better serves user needs. In addition, recent research suggests that although hyperlinks may facilitate information-sharing, they can simultaneously jeopardize the interaction with the user in certain contexts (Stommel, Paulus, & Atkins, 2017). It is implied that these types of short answers, consisting of hyperlinks, may alienate users. More research is needed, especially from the user perspective, on the subject of how the difference in methods of communication may influence users’ perception of the service.

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References


Appendix: Question Coding Scheme

1. Text, Chat, E-mail
2. Referred: Y/N
3. Level of questions:
   ○ basic: responds to a simple question using library information sources (catalogue, website, ready reference)
   ○ intermediate: assists users with intermediate-level questions or support, may require use of several information sources, and often involves user instruction
   ○ advanced: responds to a user's question using advanced expertise in the service area. Interactions are often multi-faceted and/or inter-disciplinary and subject specialists may need to be consulted.
4. Theme of questions
   ○ Library services: policies
   ○ Library services: hours
   ○ Library services: other
   ○ Issue with access to e-resources
   ○ Reference/ research
   ○ Loans/ renewals
   ○ Known item searching
   ○ Other
Faculty Orientation to Off-Campus and International Campus Locations

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Abstract

Following in the same tradition of seamlessly providing access to library resources to our remote users, our campus has now taken the next logical step in also providing an orientation for new faculty teaching online as well as those teaching at our international campus locations. Without this type of orientation program, new faculty often feel isolated and left to navigate various systems, including library resources, the learning management system, student information systems, early alert tools, etc., completely on their own. Providing an orientation to this audience helps bring them together and allows them to acclimate to the various campus systems in an easier and much-less frustrating manner.

Introduction

The Rochester Institute of Technology (RIT) continually strives to provide equal access to information and resources to all faculty and students, regardless of their location or course delivery mode. This practice has been an ongoing initiative that has now become part of the institute’s normal process and a factor in all library policies. Based on feedback from faculty located at the international campuses as well as faculty teaching online courses from remote locations, it became evident that new faculty were in need of a program orienting them to the wide array of systems, tools, and resources they needed to utilize in their teaching. This information was not something the international faculty were regularly or consistently receiving at their campuses. Once identified as a problem to be resolved, the issue became an opportunity for collaboration between the library and the Faculty Development team. The two units had already partnered to provide faculty orientation and programming for on campus and adjunct faculty, so the next logical step was to determine the best method of delivery to remotely located faculty.

The Faculty Development team already designed and delivered a three-day orientation for full-time faculty at the main campus and a condensed version of the same for adjunct faculty. The international faculty orientation was modeled after these two successful programs. Once the appropriate topics were identified, the team considered how to best implement the program. Factors under discussion were varying cultural norms, differing time zones, and how best to deliver instruction regarding the best practices of usage for the various resources available to
faculty. Based on previous iterations of new faculty orientations, the joint team of two Faculty Development professional staff and one librarian identified the key tools and resources to support faculty success in their first semester. Providing the information asynchronously in a self-paced tutorial format allows for new faculty to access the instruction at their convenience or to view as a group at their individual international campuses. Real-time follow up sessions can also be scheduled to address questions on content and functionality, which the RIT Kosovo campus took advantage of with the Faculty Development team several weeks after the initial materials were shared in order to learn more about specific faculty grant opportunities. The team offers subsequent live sessions scheduled separately for each individual campus, or jointly so that new faculty are given the opportunity to meet and interact with their peers at different international campus locations. This not only provides the learning opportunity to better understand the available tools, but also offers an opportunity to potentially network and collaborate with peer faculty at other campus locations for multidisciplinary teaching and research.

This initiative is a positive effort for all involved as it reduces the sense of isolation and lack of a connection with the home campus as well as offers opportunities for the faculty to understand and utilize the tools and resources which enable the faculty to increase their productivity. Ultimately, the students are the primary beneficiaries by having faculty who are familiar and comfortable using the resources available to them.

**Challenges for Connecting with Remote Faculty**

**Challenge One**

RIT Libraries has long prided itself on being accessible to the entire campus community including students, faculty, and staff. RIT Library services and resources are also freely accessible to our deaf and hard-of-hearing student and faculty population from the RIT’s National Technical Institute for the Deaf located on the main campus. RIT Libraries is a supporting member of the Rochester Regional Library Consortium of member academic libraries which extends the collection and services to academic member libraries beyond the RIT campus. Since the 1980s the library has been actively involved in online/distance learning, with RIT being one of the leaders in early online education. Our library dedicated a librarian position to distance learning students, resulting in specialized programming, resources, and services for this specialized student and faculty group who may never set foot on campus. For students, that meant access to our library and its wealth of resources wherever they may be living—across the nation or the world. For faculty teaching a distance learning section of a course this often meant assignments requiring online resources like journals, videos, and other multimedia.

**Challenge Two**

With the new millennium came a new set of challenges as RIT expanded its campus beyond the continental United States, adding remote campuses in Croatia, Kosovo, and Dubai. The Global Education Librarian has regularly made visits to RIT’s European campuses to provide research instruction and meet with faculty about their research needs. The personalized outreach has helped foster relationships between the global campus faculty, administrators, and
the librarian. In April of 2017, the Associate Provost for Faculty Development and The Wallace Center travelled with the Global Education Librarian to the RIT Dubai campus. The purpose of this visit was to explore the needs of the faculty and to identify areas where both the Library and the Faculty Development team could provide resource assistance. A significant and recurring response from faculty was a sense of isolation and the need for timely and relevant information on tools and resources available to them. This need was particularly essential for new faculty.

Upon return from the RIT Dubai visit, the Global Education Librarian met with colleagues from RIT’s Faculty Career Development (FCD) unit to discuss ways to expand faculty orientation to the international faculty. FCD had already been running successful orientation programs each year for new, full-time faculty and an orientation specifically designed for part-time adjunct faculty. The problem presented an opportunity for the team to collaborate to design a program to orient the international faculty population to the main RIT campus so they would feel less isolated and more inclusive of the larger RIT campus community, capable of navigating the various technologies and systems that all RIT faculty are expected to utilize in their teaching.

Throughout spring and summer 2017, the team worked with several campus divisions to design a series of online modules that would introduce these faculty to the campus and share knowledge on the use of several campus technologies. Resources were either repurposed from existing material or created fresh for the International Faculty Orientation (IFO) pilot. Key topics included the campus student information management system (SIS), the academic warning tool (Early Alert), learning management system (myCourses), and a number of library resources, (library web page navigation, academic integrity, plagiarism, and high tech cheating). Valuable information about RIT’s Teaching & Learning Services unit on course design and access to individual consultations to discuss syllabus or pedagogy was also presented. These initial topical presentations were determined based on critical need for faculty to become familiar with RIT systems and technology, modeled after the Faculty Development team’s successful adjunct faculty orientation programs.

**Literature Review**

In order to address the challenges posed, the team researched the literature and previous studies on topics related to providing access to library resources to remote users of academic libraries, equal access regardless of proximity to campus, and orientation programs for faculty teaching online and remotely at international campus locations. In reviewing the historical literature regarding distance education, remote access for library services in higher education, and faculty development for remotely located faculty, the importance of inclusiveness and equal access were quickly identified as being paramount needs to those not located at the main campus. The literature clearly details that institutions should be providing equal access to information and resources to all faculty and students regardless of their location or their course delivery mode. Faculty professional development, specifically as it relates to orientation and onboarding programs, including research on faculty populations feeling isolated and in less than inclusive environments, are current topics of concern within the higher education professions.
Distance Education

Early forms of distance education in the United States can be traced back to correspondence courses where the course instructor and individual students were located in different geographic areas and communicated via the U.S. postal system. As technology evolved, new opportunities for course delivery and communication were developed. In 1922, Pennsylvania State College began broadcasting courses over the radio. The State University of Iowa soon followed by offering course credit for five radio broadcast courses. Televised college courses became available in the 1950s. By 1976, Coastline Community College began offering a range of telecourses (Miller, 2014). The Internet, however, brought about the most significant revolution in distance education. By the mid-1980s, more than 300,000 students were enrolled in higher education distance education courses in the United States (Matthews, 1999). The National Center for Education Statistics reported that in the fall of 2014, 5,750,417 students were enrolled in a distance education course at a degree-granting institution (National Center for Education Statistics, Fast Facts, n. d.).

The flexibility of distance education provides great benefit to busy students juggling multiple commitments. In spite of the advantages afforded by distance education courses, commonly reported challenges in the literature include: (a) there is little support available, meaning those involved in distance education courses are often expected to find their own resources, and (b) there is a lack of campus atmosphere (Walsh, 2011). Neither of these responses were unexpected and both are of critical importance in the successful implementation of providing courses at remote campus locations and to individual distance learners across the globe. Equally common among faculty teaching remotely or at satellite campuses is the feeling of isolation and disconnection from their peers. Small satellite campus departments may consist of a single faculty member. This often requires faculty members to serve in multiple roles, which can provide more opportunities, but it can also create stress. Satellite campuses with “one person” departments can result in greater job complexity, generalist role expectations, professional isolation, and limited collegiality (Wolfe and Strange, 2003).

Remote Access to Information

The Association of College and Research Libraries (ACRL) released their revised Standards for Distance Learning Library Services in June 2016. The Standards require the university library to make its resources available for all users, stating, “The library has primary responsibility for making its resources, services, and personnel available to its users regardless of their physical location” (ACRL, 2016, para. 1). Library programs that are intended to meet the needs of the campus community must also meet the needs of the off-campus community of users. The Standards also require the Library to strive to provide access to library services to better enable students to achieve academic excellence. Library instruction must also be provided for those not located at the main campus. The Standards outline the necessity of providing equal access to all members of the university community regardless of location (ACRL, 2016).

Equal Access
Today’s technology allows remote users to access campus resources in a much simpler and seamless manner than what previously existed. Utilizing EZProxy provides remote users with authenticated access to the library’s licensed resources. A Virtual Private Network (VPN) allows remote users to connect to the network and thereby access the library’s resources. Other tools for providing remote access include Athens and Shibboleth, which authenticate users so they can gain access to licensed library resources remotely. A quick review of web search results shows that most academic libraries provide information on how to access their resources remotely. Fulkerson (2012) states, “Libraries will not go out of existence, but they will offer more services to their remote users because of improvements in technology. […] The library of [the] 21st century will be a place where users can find the resources they need without having to set foot in the building” (pp. 171-172).

Faculty Development

Evidence shows that orientation programs can be powerful ways to engage new faculty, acclimate them to the campus, and familiarize them with the resources and services that will allow them to be successful in their teaching role. The challenge with developing orientation and onboarding programs is to reach all faculty groups with a consistent message, yet design individualized programs to meet their specific needs, creating an inclusive and welcoming experience. Designing effective new faculty orientation programs is a necessary first step to faculty success and retention -- reaching all of the faculty is imperative. According to Kreitner (2004), orientation programs in which newly hired faculty learn about their organization’s history and culture is important for their socialization process at the campus. Many orientations are designed in a hurried fashion, or do not exist at all, leaving the new faculty to sink or swim (Kreitner, 2004). More recent research in faculty development reflects the importance of designing faculty orientations with a learner-centered approach (Scott, Lemus, Knotts, & Oh, 2016). Cullen and Harris (2008) shared their results of an orientation program for new faculty designed according to learner-centered principles that also sought to establish a community of scholars that encouraged collaboration and innovation. According to Cullen and Harris (2008):

A workplace that is collegial, that fosters collaboration and takes into consideration the diverse backgrounds of the new scholars reflects the best practices regarding how people learn. The process of socializing new faculty to their role in an institution requires an understanding of that process and the factors that affect or inhibit learning. (p. 20)

Ladyshewsky (2016) studied the changing landscape for academic staff and the implications for educational management, administration and leadership relative to faculty located in a different country than the home campus, and those findings suggested that the virtual setting was successful because of the “intrapersonal competencies” and the technology rich environment. However, he noted challenges with communication and relationships with colleagues due to the distance.

Methodology to Address Challenges

An orientation web site was created specifically for our international faculty where new media modules would reside. Individual presenters of topics had already worked with delivering
their training to our campus orientations and were happy to record presentations to bring our international faculty up to speed. The self-paced tutorial format allows new faculty to access the instruction at their convenience or collaborate as a group at their individual international campuses. Modules were created using Camtasia software and a media mix of audio, video, digital photographs, and PowerPoint presentations. The production team involved in designing and delivering the modules included two very creative, talented student employees who enabled the taping of presenters, editing audio and video, and post production to fit web configuration of the newly designed orientation page. Post-production included transcription and captioning of all audio, making the media accessible to the deaf and hard-of-hearing impaired as well as for those whose original language is not English.

Fall 2017 brought the pilot launch of the new IFO with a synchronous kick-off session to the RIT Dubai campus. Using Bluejeans technology (a cloud-based, video-conferencing tool) to host an online meeting, this first session included a brief welcome from the associate provost, and an informational message from the Faculty Development team and the global campus librarian. This session was intentionally kept short with brief overview of a sampling of the new web site and the invitation to faculty to go back and view the tutorial at their leisure. Each of the RIT campuses in Croatia and Kosovo were emailed a self-instructional model that included an introduction to the international faculty orientation website and inviting their participation to view the specific modules and respond with questions and feedback.

Since start dates for each of the campuses varied, all international site faculty were told that the orientation team would follow-up with a survey in two to three weeks to collect their feedback on the modules and to find what additions or improvements they would like for the resources. With three of RIT’s campus sites in Croatia and Kosovo opting to pilot our orientation site and modules asynchronously, it was important to gather feedback from a group that did not have any real time introduction or overview of the resources on the website.

**Online Resources Created for International Faculty**

Designing effective orientation programs for faculty often involves many areas of the campus collaborating to create a cohesive program. For the IFO pilot, the team reached out to various service units of the institute asking for their participation in this venture. With the assistance of talented student employees experienced in videography and web design who created the videos and processed them to the Faculty Development YouTube Channel and accompanying website, resources were collected and created for the international faculty. The original pilot was designed for new faculty; however, recognizing that these resources were relevant and important to all faculty, the entire faculty population for each RIT international campus were invited to participate. Based on a study completed by MIT faculty, the use of videos in online learning suggests that instructors segment videos into short chunks of less than six minutes as they are more engaging for the intended audience (Guo, Kim, & Rubin, 2014). The MIT team recommended investing heavily in pre-production lesson planning to segment videos into chunks shorter than six minutes. Following these recommendations and other best practices considered, the goal for the IFO team was to produce two types of resources for faculty: (a) brief, engaging videos to welcome faculty to the RIT community, and (b) self-paced tutorials that faculty could return to at their convenience. All of the resources are housed under
one website for easy retrieval. A summary of the resources created for RIT’s international faculty are presented in Table 1.

Table 1

*Summary of Online Resources (See http://bit.ly/InternationalFacultyOrientation)*

<table>
<thead>
<tr>
<th>Topic/Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome Message from Associate Provost</td>
<td>Introduce and acclimate faculty to the main campus with a warm, welcoming message.</td>
</tr>
<tr>
<td>Faculty Career Development</td>
<td>Outline professional development opportunities for all of RIT’s faculty (e.g., grant opportunities).</td>
</tr>
<tr>
<td>Student Information System</td>
<td>Tutorial on the student record system; the most important technology that faculty member will need to grasp as it contains student rosters, grades, etc.</td>
</tr>
<tr>
<td>Starfish - Early Academic Alert System</td>
<td>Tutorial on the academic alert system, process, and best practices.</td>
</tr>
<tr>
<td>Teaching &amp; Learning Services</td>
<td>Video on resources offered by Teaching &amp; Learning Services, including requests for 1:1 consults</td>
</tr>
<tr>
<td>myCourses</td>
<td>Overview of the course management system and where to get more information and support.</td>
</tr>
<tr>
<td>RIT Library Resources</td>
<td>Overview of the many resources available to faculty on campus and online.</td>
</tr>
<tr>
<td>Academic Integrity</td>
<td>Academic integrity policies and best practices</td>
</tr>
<tr>
<td>Turnitin</td>
<td>A web-based tool that checks for originality in written work; short tutorials on navigating a Turnitin originality report.</td>
</tr>
<tr>
<td>High-Tech Cheating Module</td>
<td>Looks at academic cheating and the methods being used to cheat; links to available resources.</td>
</tr>
</tbody>
</table>
Survey Results

Four of RIT’s global campuses participated in the pilot orientation program including RIT Dubai, RIT Kosovo and RIT Croatia campuses in Dubrovnik and Zagreb. The number of faculty and the delivery mode of the orientation materials for the fall 2017 semester are presented in Table 2. While only one campus had a synchronous orientation, all were provided with access to the website, videos, and self-paced tutorials whenever they wished to access; all campuses received follow-up contact emails. The RIT Kosovo campus requested a follow-up video-conference with the Faculty Development team to discuss grant opportunities.

Table 2

Fall 2017 RIT International Faculty Counts

<table>
<thead>
<tr>
<th>Campus</th>
<th>Full-time Faculty</th>
<th>Adjunct Faculty</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIT Dubai</td>
<td>30</td>
<td>7</td>
<td>Synchronous</td>
</tr>
<tr>
<td>RIT Kosovo</td>
<td>17</td>
<td>14</td>
<td>Asynchronous</td>
</tr>
<tr>
<td>RIT Croatia - Dubrovnik and Zagreb combined</td>
<td>30</td>
<td>21</td>
<td>Asynchronous</td>
</tr>
</tbody>
</table>

Feedback Instrument

The feedback instrument consisted of six questions including three Likert-scale questions to evaluate faculty opinions of the resources provided. Questions asked included: the frequency with which they visited each resource, the usefulness of the resources, and whether the level of coverage was sufficient to meet their needs. The team was seeking an overall measurement on these three key questions to be used to guide future iterations of the website/resources. An additional question asked faculty status (new or returning faculty), and one open-ended question asked their opinion on additional materials they would like to see on the international faculty website. The instrument was deliberately designed for brevity to encourage responses from the faculty. It is evident from the survey results that faculty went to those resources they thought were essential for getting the semester underway and may have skipped the introductory navigational videos and welcoming messages that were intended to provide a personal connection with the campus and its support staff.

Responses

Thirty faculty responded to the survey collectively from all campuses, representing both new and returning faculty ranks (see Table 3). Because of anonymity, the survey did not differentiate between new or returning faculty who took advantage of the resources.
Table 3

Survey Responses by Campus

<table>
<thead>
<tr>
<th>Campus</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIT Dubai</td>
<td>4</td>
</tr>
<tr>
<td>RIT Kosovo</td>
<td>3</td>
</tr>
<tr>
<td>RIT Croatia-Dubrovnik</td>
<td>8</td>
</tr>
<tr>
<td>RIT Croatia-Zagreb</td>
<td>15</td>
</tr>
</tbody>
</table>

**Question 1 results.** Faculty were asked to respond regarding the frequency of visiting each of the resources provided to them (see Table 4). The most frequently visited were myCourses and Early Alert technology support. Note these are both campus technology tools that faculty need to teach. The least resource visited were the Faculty Development informational video and the High-Tech Cheating tutorial.

**Question 2 results.** Faculty were asked what they found to be the most useful and responded that myCourses and the Early Alert technologies as the top most useful (see Table 5). Faculty did not access the two informational/welcome videos. It is clear that faculty seem to be seeking the basic technologies needed to teach.

**Question 3 results.** Faculty were asked if they felt the level of coverage provided was adequate for each resource they visited (see Table 6). Note that faculty responses dropped significantly for this question, even though the survey instrument was designed to be brief enough to encourage faculty input.
Table 4

*Question 1 Results*

<table>
<thead>
<tr>
<th>Resource</th>
<th>More than Once</th>
<th>Once</th>
<th>Not at All</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome from Associate Provost video</td>
<td>0</td>
<td>15</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Faculty Career Development video</td>
<td>3</td>
<td>7</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Student Information System (SIS) tutorial</td>
<td>11</td>
<td>7</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td><strong>Starfish - Academic Alert System</strong></td>
<td><strong>19</strong></td>
<td><strong>6</strong></td>
<td><strong>4</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td>Teaching &amp; Learning Services video/links</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td><strong>myCourses links</strong></td>
<td><strong>21</strong></td>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>RIT Library Resources video</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Academic Integrity tutorial</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Turnitin ® tutorial</td>
<td>10</td>
<td>3</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>High Tech Cheating tutorial</td>
<td>3</td>
<td>6</td>
<td>19</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 5

*Question 2 Results*

<table>
<thead>
<tr>
<th>Resource</th>
<th>Extremely useful</th>
<th>Somewhat useful</th>
<th>Not at all</th>
<th>Did not use</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome from Associate Provost video</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Faculty Career Development video</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Student Information System (SIS) tutorial</td>
<td>14</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><strong>Starfish - Academic Alert System</strong></td>
<td><strong>19</strong></td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Teaching &amp; Learning Services video/links</td>
<td>8</td>
<td>12</td>
<td>0</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>myCourses links</strong></td>
<td><strong>20</strong></td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>RIT Library Resources video</td>
<td>14</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Academic Integrity tutorial</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Turnitin ® tutorial</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>High Tech Cheating tutorial</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>14</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 6

*Question 3 Results*

<table>
<thead>
<tr>
<th>Question 3 Results</th>
<th>Too much</th>
<th>Adequate</th>
<th>Not enough</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome from Associate Provost video</td>
<td>3</td>
<td>15</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Faculty Career Development video</td>
<td>3</td>
<td>11</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Student Information System (SIS) tutorial</td>
<td>2</td>
<td>18</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td><strong>Starfish - Academic Alert System</strong></td>
<td>1</td>
<td>23</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Teaching &amp; Learning Services video/links</td>
<td>1</td>
<td>17</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td><strong>myCourses links</strong></td>
<td>1</td>
<td>23</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>RIT Library Resources video</td>
<td>1</td>
<td>16</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Academic Integrity tutorial</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Turnitin ® tutorial</td>
<td>1</td>
<td>11</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>High Tech Cheating tutorial</td>
<td>2</td>
<td>7</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>

There were only nine responses to the open-ended question, and a sampling of those responses is below:

- It would be extremely beneficial if the International Faculty Orientation website would list grant opportunities to faculty from Global Campuses. Additionally, if website could also list possible teaching opportunities available on Global campuses. This would allow faculty from Global campuses to compete for teaching opportunities (temporary, semester long for example) across RIT Global campus network.
- Good go-to page for new faculty. Not that important for me as senior faculty, but looking forward to explore more of the faculty development offerings there.
- More possibilities to network with other faculty members teaching similar courses.
- There seems to be too much information. However, if it can be organized in a user friendly way, it will be more effective for new faculty.

However, more promising feedback was collected from several emails that were sent to the RIT Global Librarian:
• **RIT Croatia:**
  o I think you touch a lot of good topics for new faculty there, like using all the usual electronic tools. The other links on the page (grants, fac development etc.) are things we occasionally talk about in faculty meetings and wish there was one go-to page for all info. This looks like it is!

• **RIT Dubai:**
  o I just had a chance to review the page. In my opinion it is just wonderful. All videos are around 5 minutes and to the point on critical topics like entering grades on SIS, Early Alert scenarios, myCourses scenarios, etc. That said, I look forward to the feedback of my colleagues here and what they think about it through the survey.
  o Thank you, Sue for your interest in our productivity and success. Very much appreciated.

• **RIT Kosovo:**
  o Thank you Sue and team! A wonderful resource to begin with here. This month we are reviewing resources available for teaching, scholarship and service from RIT so this comes with excellent timing.
  o Just wanted to note that the intro about RIT Libraries is really good.

**Going forward.** Feedback from the three Likert questions will be used to guide the next iteration of the international faculty orientation. Plans are underway to update the online resources once again collaborating with the campus divisions involved in the pilot project. Other feedback will also be integrated, such as the faculty suggestion to list available grant opportunities for the global campuses on the IFO website. Some suggestions cannot be integrated; for example, it is not under the purview of this department to list teaching opportunities as that is a function of the individual college deans and Human Resources. The comment suggesting possibilities to network with colleagues may be achieved with other technologies and the IFO team will continue to investigate better, more reliable collaborative technologies.

**Web resources.** A routine part of both teams’ practice at RIT is the design and delivery of numerous resources and links to assets via webpages. Both the Wallace Library and FCD maintain a robust web presence accessible 24/7 to all faculty. These resources particularly for faculty development point the viewer to many materials beyond university boundaries and further extend the nature of collegial sharing and networking. FCD prepares a web list of resources each academic year detailing both internal and external sites worthy of perusing for a successful start to a professional career at RIT. These sites offer practical and helpful information related to career development, student support, and teaching support. The FCD team also offers a Faculty Success Series, a sequence of professional development and networking activities offering opportunities for faculty to grow their network, discover resources at RIT, and enhance teaching and scholarship. At this time, FCD is exploring the possibilities to link RIT’s global campus to events in this series whether via real-time or possibly time delayed. With more cost-effective and reliable modes of communication available for distance education in the form
of video/web-conferencing, these delivery modes will become more feasible in the near future. Another potential area for future development connecting faculty from RIT’s global campuses to the main campus are social networking sites such as Google Hangouts or Zoom due to their multi-faceted capabilities and cloud-based, community orientation (Hanover, 2011). This technology is less likely to fail, making for a user-friendly, interactive experience.

Since the early 1990s, RIT Libraries has made a concerted effort to provide access to all members of the RIT Community regardless of location. Today, the librarians provide a variety of tools to ease using and accessing the library’s resources remotely. As part of the strategy for providing access to all, books are purchased in electronic form whenever possible. Interlibrary loan is utilized for those resources not available in electronic form. Like many other libraries, the implementation of SpringShare’s LibGuides has been a popular mechanism for sharing library resource information. These guides not only include library research resources but also tutorials on how to best access, locate, and use the provided resources. Library instruction can be provided remotely via Blue Jeans video-conferencing and Skype. Real-time chats are also popular and beneficial for quick questions. With the RIT global campuses located in different time zones, the chat feature is popular when the international campus librarian is not available. The goal is to provide access to resources so that there is no real differentiation in services to our remote users.

Recommendations and Conclusion

As a result of survey responses from the pilot, the team learned that question construction must be reconsidered to solicit better feedback on the resources assessed. Going forward, guidance on which resources faculty should view first in their instruction should be added to the site; e.g., begin with the welcome video; the Student Information System is a technology that faculty will need immediately for their class rosters so they should spend time on that tutorial, etc. Another point to be considered going forward is which faculty are participating from each campus.

Although slow to demonstrate crucial impact, this pilot initiative is a positive effort for all involved as it reduces the sense of isolation and lack of a connection with the home campus. It also provides faculty with an opportunity to learn how to fluently use the tools and resources which enable the faculty to increase their productivity. Just as the purpose of the on-campus orientation is to familiarize new faculty with the available tools and resources, the international faculty orientation was designed to achieve the same result as well as to foster better communication between all of the RIT campuses.
References


Supporting Student-Led Content Creation in the Distance Learning Environment with LibGuides CMS

Jeffrey M. Mortimore
Ruth L. Baker
Georgia Southern University

Abstract

By supporting student profiles, blogs, content curation, and HTML and scripting projects, Springshare’s LibGuides CMS provides a flexible platform for student-led content creation in the distance learning environment. This paper describes how two librarians at Georgia Southern University opened up LibGuides CMS to host collaboratively developed course content and student-created work grounded in metaliteracy concepts embedded in the Framework for Information Literacy for Higher Education. Faculty and students were invited onto the platform as content creators, while librarians provided instruction and technical support. Practical, pedagogical, and technical considerations for supporting student-led content creation are discussed, including implementation, access control, and student privacy.

Introduction

According to the NMC Horizon Report: 2017 Higher Education Edition (Adams Becker et al., 2017), some of the most significant technology trends to arise in higher education since 2012 include students as creators, blended and collaborative learning, and improving digital literacy. Consistent with these trends, librarians have witnessed ongoing development of online teaching and learning tools, including Springshare’s suite of LibApps products. According to Springshare, as of late 2017, more than 5,700 libraries had adopted one or more LibApps, of which LibGuides and LibGuides CMS feature prominently.

LibGuides CMS extends basic LibGuides functionality by providing granular editorial and access controls, inviting librarians to explore new applications for the platform. Further, by supporting student profiles, blogs, content curation, and HTML and scripting projects, LibGuides CMS provides a flexible platform for student-led content creation. However, at the time of this writing, such applications remain largely unaddressed in the library literature.

Expanding on Baker’s (2014) investigation of LibGuides as instructional tools, this paper describes how two librarians at Georgia Southern University opened up LibGuides CMS to host collaboratively developed course content and student-created work grounded in metaliteracy concepts embedded in the Framework for Information Literacy for Higher Education (2011). During the spring 2017 semester, faculty and students from two blended undergraduate courses were invited onto the platform as content creators, while the authors provided instruction and
technical support. Following a brief literature review, this paper describes these collaborations in the context of the Framework, and discusses practical, pedagogical, and technical considerations for supporting student-led content creation in LibGuides CMS, including implementation, access control, and student privacy. This paper concludes by discussing next steps for enhancing these collaborations as well as recommendations for future research and instructional design.

Literature Review

Since LibGuides first launched in 2007, a steady stream of articles have cited the platform’s value for locating and accessing key resources including books, article databases, news sources, and other media (e.g., Bielat, Befus, & Arnold, 2013; Dalton & Pan, 2014; Dobbs, Sittler, & Cook, 2013; Emanuel, 2013; McMullin & Hutton, 2010; Morris & Del Bosque, 2010; Reeb & Gibbons, 2004; Roberts & Hunter, 2011; Robinson & Kim, 2010; Staley, 2007; Strutin, 2008). Recently, as more librarians have integrated LibGuides into instruction, and with the introduction of tools like LibWizard, an increasing number of articles address LibGuides as an instructional platform (Farkas, 2017; German, 2017; Giullian & Zitser, 2015; Jackson & Stacy-Bates, 2016). Even so, little has been published on student-led content creation in LibGuides, including in the distance learning environment.

At the time of this writing, only two case studies explicitly address student-led content creation on the LibGuides platform. Scull (2014) describes undergraduates creating a LibGuide as part of a literature review assignment at the School for International Training in Vermont. More recently, Adebongjo and Campbell (2017) describe a QEP-aligned assignment at Eastern Tennessee State University where undergraduates populated a LibGuide with content relevant to a class research topic, then included the LibGuide as part of an electronic portfolio. According to Adebongjo and Campbell, by developing LibGuides as part of their portfolios, students gained experience producing high-quality research, aligning well with the university’s Information Fluency QEP. While germane to student-led content creation in the LibGuides environment, neither Scull nor Adebongjo and Campbell address distance learning applications.

Taken in context of the 2017 Horizon Report’s findings, this relative lack of recent case studies invites academic librarians to open their library-hosted content management systems to collaboratively developed course content and student-created work. As such, the current paper extends Baker’s (2014) pilot study of a tutorial-type LibGuide in a First-Year Experience course, and subsequent experimentation with flipped assignment guides at Georgia Southern University. In her previous study, Baker noted a lack of literature documenting use of LibGuides as an online teaching tool. The current paper addresses this need by contributing to the literature on communities of learning and student-led content creation within the context of the Framework in blended and distance learning environments.

Engaging with the Framework: Two Case Studies

Founded in 1906, Georgia Southern University currently offers 119 degree programs at the bachelor’s, master’s, and doctoral level to more than 20,000 students. At the time of this writing, Georgia Southern is classified as a Doctoral and Research Institution by the Carnegie Foundation for the Advancement of Teaching, and as a Comprehensive University by the University System of Georgia (USG). The Zach S. Henderson Library employs more than fifty full and part-time faculty and staff and is home to over 665,000 print volumes, 775,000
government documents, 85,000 journals, and 195 subscription databases. The library belongs to the statewide GALILEO consortium, an initiative of the Board of Regents of the USG, which supports many of the library’s databases and electronic resources.

Currently, ten library faculty serve as reference and instruction librarians, providing face-to-face instruction and creating LibGuides supporting subject areas, courses, and programs. These faculty hold office hours and offer individual consultations, and several of them are embedded in courses, both face-to-face and online in the LMS. In 2016-17, librarians hosted approximately 150 face-to-face classes and workshops. Of these, a few included flipped classes; however, most were one-shot information literacy sessions.

During the spring 2017 semester, the authors, who are library faculty, collaborated with discipline faculty in a First-Year Writing course (ENGL 1102) and an Introduction to Digital Humanities course (HUMN 3431) to provide active learning experiences that invited students to participate as online content creators. In each case, the authors invited the faculty and students onto the LibGuides CMS platform as guide owners and editors, then provided instruction and support as each course required. In turn, students developed group and individual assignment guides aligned with metaliteracy concepts embedded in the Framework for Information Literacy in Higher Education (2011). To varying degrees, assignments in both courses engaged each of the Framework’s six Frames. However, two Frames in particular featured prominently during the semester: ‘Authority is Constructed and Contextual’ and ‘Information Creation as a Process.’

For several reasons, LibGuides CMS was well suited to both collaborations. In LibGuides CMS, guides are created or added as members of groups. Guides can be added or removed from any group at any time. Each group may be branded using unique appearance and layout settings. LibGuides CMS supports access controls at the group or guide level, allowing administrators to restrict access by user account, password, or IP range. Further, owner and editor permissions are controlled at the group or guide level. Utilizing these access and permission settings, librarians may customize projects to meet collaborating faculty and students’ privacy needs. At the same time, librarians are able to protect their own guides and platform assets, while maintaining final administrative control over all groups and guides housed on the platform.

First-Year Writing Course (ENGL 1102): ‘MyStory’

The mission of the First-Year Writing Program at Georgia Southern University is:

to give students a foundation for communicating successfully in school, at work, and throughout their communities by introducing them to the complex writing, reading, critical thinking, and research tasks they will encounter (Department of Writing & Linguistics, 2017, para. 1).

Learning Outcomes for ENGL 1102 relate primarily to critical writing and critical reading. In critical writing, students are called upon to synthesize a variety of sources to participate in a scholarly conversation; demonstrate purposeful and appropriate use of voice, tone, medium; demonstrate reasonable fluency in linguistic structures (such as syntax, punctuation, and word choice); and follow academic citation conventions. Learning outcomes for critical reading call for students to use a variety of strategies for inquiry/discovery; find and evaluate sources in multiple genres; and use rhetorical concepts to analyze a variety of genres.
‘MyStory’ was the name given to the ENGL 1102 course by the instructor. It revolves around alternatives to standard research paper or essay writing assignments, in which students synthesize personal, reflexive (metacognitive) writing with analytical writing in a series of essays. Students were assigned essays based on four areas of their lives that have shaped who they are: community, family, career (or major), and entertainment. The course was grounded in the concept of ‘Electracy’ as described in the course guide: the type of writing that will emerge with digital technologies, primarily relying on images. These ‘visual essays’ were supplemented with text from students’ research and reflections; as such, it represented transformational learning through changes in students’ understanding of ‘self’ (Hooper & Scharf, 2016; Mezirow, 2000; Seeber, 2015; Tynes, 2017). The end product in the course was a final essay, based on Gerald Holton’s (1978) ‘wide image,’ that described patterns that emerged from the other essays.

The ‘Mystory’ course was a hybrid or blended learning course with 23 students creating individual essay pages in the course LibGuide1. There were regular face-to-face meetings of the class, including a LibGuides CMS tutorial and two research-related sessions in the library. However, most of the work in the ‘Mystory’ course was completed online in the course LibGuide (see Figure 1).

In collaborating with the course instructor for the ‘Mystory’ course, we designed lesson plans that were guided by concepts in the Frames to help us scaffold activities throughout the semester (Silva, 2016) and enhance student engagement and learning with LibGuides CMS as a learning platform. Students, as they worked through their essays, developed different digital literacies: visual literacy, information literacy, and metaliteracy. Other goals of our design were: a) reduced cognitive load, b) reduced stress on working memory through chunking, and c) scaffolding of activities so students could build their skills over time. This approach resulted in a shorter learning curve enabling students to create and edit their pages more quickly and easily than would have been possible on other platforms.

---

1 Student pages from the ENGL 1102 course are not accessible via Georgia Southern University’s ‘Mystory’ LibGuide due to privacy restrictions.
Librarians served primarily as ‘guides on the side’ in the ‘Mystery’ course, providing short instructional sessions and support over the course of the semester. We were able to have three face-to-face sessions with the students and the instructor:

1) An introduction to the course guide with a short tutorial on editing LibGuides pages (see Figure 2 and Figure 3).

2) A research session with a brief tutorial on using the library’s online catalog (ExLibris Primo) and discovery layer (EBSCO EDS), followed by a book and article search activity. As part of the book search, students searched for a relevant book online in the catalog or the discovery layer, retrieved it from the book stacks, and then shared their discovery with classmates and the instructor. This active learning exercise served as an ice-breaker for the class and got the students interacting and collaborating as they began to build their pages. In this session, and reinforced throughout the course, we addressed the Frame ‘Authority is Constructed and Contextual’ and ‘Information Creation as a Process.’
3) A session with the library’s Special Collections librarian reinforced the Frame: ‘Searching as Strategic Exploration’ through a session to help students gain familiarity with resources available in the library on local and regional history.

Figure 2. Inserting/Editing Text. This figure illustrates tips provided on how inserting/editing text from a word processor into course pages.
Figure 3. Inserting/Editing Images. This figure illustrates tips for inserting/editing images into course pages.

In summary, this approach allowed students to quickly and easily ‘take the lead role’ in the course as content creators (see Figure 4). While creating the pages, students had hands-on experience manipulating images and text in LibGuides CMS, and experienced a shortened learning curve compared to other platforms so they could engage with their course content without the distraction of simultaneously learning and mastering a new technology.
Figure 4. Visual essay from the ‘Mystery’ course. This figure illustrates an exemplary visual essay created by a student in the ENGL 1102 course.

Introduction to Digital Humanities (HUMN 3431): Student Portfolios

In addition to the ENGL 1102 ‘Mystery’ collaboration, during the spring 2017 semester, the authors pursued a second collaboration focusing on student-led content creation with Georgia Southern’s newly established undergraduate Digital Humanities Interdisciplinary Minor. Housed in the Department of History, this program offers minors the opportunity to develop digital skills in the humanities, liberal arts, and social sciences. As part of the minor, students are expected to develop a public-facing online portfolio to display their skills to potential employers.\(^2\) Portfolios may include audio and video projects, website development, digital mapping, data visualization, 3D design and printing, virtual reality, and video games. The first course in the 15-hour minor is Introduction to Digital Humanities (HUMN 3431) which, in addition to introducing disciplinary

principles and theories, allows students to learn techniques, conduct projects, and begin building their portfolios.

Similar to ENGL 1102, HUMN 3431 was a hybrid or blended learning course with ten students creating group and personal portfolios on LibGuides CMS. The course included regular face-to-face meetings, including one session with a librarian on online content development. The impetus to host these portfolios on LibGuides CMS was fourfold. First, the Digital Humanities program required a cost-effective, scalable online content management system on which students with a wide range of technical skills could develop varied projects and portfolios, and make them publicly accessible following graduation. Second, the program further required a platform that would support faculty-led projects, as well as host the program’s instructional toolkit. Third, the program required a platform that would support long-term preservation of portfolio content in the University’s institutional repository. Fourth, the program required a platform that could be adapted to online-only instruction if such offerings are developed in the future.

By supporting student profiles, blogs, content curation, and HTML and scripting projects, LibGuides CMS was well adapted to meet program requirements without the need to work with the University’s Desire2Learn (D2L) LMS or with campus IT services. Prior to the spring 2017 semester, librarians created a series of groups on LibGuides CMS to host program-level, faculty, and portfolio guides, which are accessible from the program’s public-facing homepage (see Figure 5). For the HUMN 3431 course, librarians created a spring 2017 cohort group, which contains group and individual portfolio guides for each student. Students are expected to develop their individual portfolios throughout the minor, and will retain editorial access for a time after graduation. Program faculty have ownership of the guides, ensuring faculty control of portfolio content in perpetuity.
During the course of the semester, students developed a series of group and individual projects on their guides, including exploratory and self-reflective blog posts, and text analytic, mapping, data visualization, gaming, 3D modelling, and digital storytelling projects (see Figure 6). As they developed their portfolios, students gained experience with HTML and CSS coding, and with embedding widgets and external content into the platform. Further, they were encouraged to explore the platform’s appearance and layout customizations. In this way, students completed a series of metacognitive tasks exploring self-representation and representation of digital content to external audiences. Similar to the ENGL 1102 collaboration, students engaged the concept of ‘Electracy’ as related to Digital Humanities content, theory, and practice. As they continue to work on their portfolios throughout the minor, these students should continue to develop these skills.

Similar to the ENGL 1102 collaboration, librarians served primarily as ‘guides on the side’ in the HUMN 3431 course, providing one short instruction session, then ongoing support as students worked on their portfolios. During this session, the authors introduced students to their guides, basic content creation techniques, and tools for customizing guide appearance and layout. This approach allowed students to take the lead as content creators, inviting them to develop and strengthen metacognitive and metaliteracy skills necessary for effective self-representation and representation of digital content. By hosting the program’s instructional toolkit on LibGuides CMS (see Figure 7), transitioning course instruction to the distance learning environment should be relatively straightforward.

In contrast to ENGL 1102, the focus of the authors’ collaboration with HUMN 3431 was to address a programmatic rather than a curricular need. As such, the authors were not involved in the same level of curricular co-development. However, by opening up LibGuides CMS and
encouraging students’ content creation practices, the authors supported their engagement in Knowledge Practices relevant to each of the Framework’s six Frames, especially ‘Authority is Constructed and Contextual,’ ‘Information Creation as a Process,’ and ‘Information Has Value.’
Using text analytics to compare speeches of complete opposites.

by [Author] January 30th, 2017

When it comes to being able to analyze the text on a deeper level, more so than just what you read and get out of it, I think it definitely will give you a more precise and interesting look at what the speech is really articulating and how they went about doing that. You are able to see things such as how many times certain words were used, maybe compare the usage to another similar speech and see how those two tie together. You can also see words that may not have been used or seen together like that before and terms that you can get more insight as to why those words were chosen to be put together like that. So many things that when reading a speech or set of words you tend to look over, but with software like this you are able to see so many more things that can help you really analyze and get a full sense of the message they are trying to convey. When it comes to digital humanities this program can be quite helpful. It can be used to analyze writings from the past. Having this ability can help us better understand why past cultures and human groups did and lived the ways that they did. Something as simple as word choice and how thoughts are verbalized and strung together can tell so much.

As we all know from Martin Luther King, Jr.'s famous I Have A Dream speech, he centers around the positive outlook of freedom and equal rights for all. He was and still is one of the most inspirational and influential speakers of our time. He was able to make amazing changes for our nation that we still think him for to this day. Through the Voyant text analysis, I was able to find out that his top 5 most frequent words were: freedom, let, negro, pay, and ring. While those words sound random and not well linked together, we also have the ability to see what those words tied into. Let's look at the top 3 words, starting with freedom used 20 times within his speech.

As you can see here, it shows the linking of the top three words and what they were tied into. Freedom for example coincides with words like mountain, capped, later, bound, and ring. We are seeing a pairing of positively and hope with those words. Freedom ringing from a mountain! He used his amazing public speaking ability as well as these great words to inspire others to march for freedom. From the mountain tops, below the message! We focused on race, not because he was trying to cause a divide, but to unify. While not everyone on this march was the same, they were all marching for the same cause. Words such as hope, free, and America used together with the word Negro. It's straightforward and optimistic use of vocabulary may well have helped immensely when he was giving his speech.

Figure 6. Student Portfolio. This figure illustrates a text analytics blog post from a spring 2017 student portfolio.
Figure 7. Digital Humanities Toolkit. This figure illustrates an example topic page addressing text analytics tools.

**Discussion**

LibGuides CMS was an effective platform for engaging students from both ENGL 1102 and HUMN 3431 in creating communities of learning and participating in student-led content creation. Results from Project Information Literacy make it clear that students find the research and writing process more difficult than ever before (Head, 2013; Head & Eisenberg, 2009). The vast array of resources that students have available to them creates a cognitive dissonance that frustrates and impedes the success of many novice researchers. Expanding the use of tools like LibGuides CMS to support new instructional practices is one way to address this challenge.

The ability for students to create digital content and interact with one another online as a community of learners was an objective of both courses, but not feasible using the University’s Desire2Learn (D2L) LMS. LibGuides CMS afforded a convenient way for these interactions to take place with minimal training for students to become acclimated to the platform. This resulted in reduced cognitive load and stress on working memory. Further, by scaffolding work as the
semester progressed, students in both courses were able to build on their skills, leading to the capstone essay in ENGL 1102 and the initial portfolio for the Digital Humanities minor in HUMN 3431.

A key feature of these collaborations was the semester-long collaboration between course instructors and the library faculty (Silva, 2016). The authors were able to embed themselves in each course, for information literacy instruction in ENGL 1102, and to provide technical instruction and support in both courses as needed. These collaborations allowed the authors to meaningfully contribute to instruction and active learning experiences that incorporated Knowledge Practices embedded in the Framework.

Fundamentally, the Framework is a constructivist model for promoting the acquisition of information literacy skills and competencies through application of a set of interconnected core concepts, Knowledge Practices, and Dispositions or ‘habits of mind.’ As such, the Framework is grounded in concepts of metacognition and metaliteracy. By engaging with Knowledge Practices, learners build their knowledge and skills, culminating in development of relevant Dispositions. Through this process, other competencies such as visual and digital literacy come into play. For example, learners may demonstrate visual literacy through incorporation of images or video in their work, or digital literacy through application of technologies in writing and research tasks (Kirsh, 2005; Oakleaf, 2014; Savery & Duffy, 2001; Zhou & Brown, 2015).

Thus understood, the Framework guided the authors’ engagement with each course as it evolved, particularly with ENGL 1102. In collaboration with the course instructor, the authors incorporated relevant Knowledge Practices into instructional design for the course, guiding students toward specific Student Learning Outcomes (SLOs). For example, in ENGL 1102, students’ visual essays addressed SLOs related to critical reading and writing. Assignments engaged Knowledge Practices associated with the Frames: ‘Authority Is Constructed and Contextual’ and ‘Information Creation as a Process,’ as well as “Searching as Strategic Exploration.’ In constructing their essays, students:

- Acknowledged that they are developing their own authoritative voice in an area, seeking credible and reliable information, and constructing a body of knowledge (including self-knowledge) and expertise through their visual, reflexive essays (Frame: ‘Authority Is Constructed and Contextual’);

- Recognized that information creation is time consuming and iterative. Scaffolding essays throughout the course allowed students to build on and transfer their previous experiences to new information sources and improve their research and analytical skills with each iteration (Frame: ‘Information Creation as a Process’); and

- Incorporated both reflexive and analytical writing based on original research supported by library instruction (Frame: ‘Searching as Strategic Exploration’).

While, as previously discussed, the focus of the HUMN 3431 collaboration was less on curricular than programmatic needs, this collaboration also presented an opportunity to engage the Framework through support of course objectives. Through development of group and individual projects and portfolios, students engaged in Knowledge Practices associated with the
Frames: ‘Authority is Constructed and Contextual,’ ‘Information Creation as a Process,’ as well as ‘Information Has Value.’ In constructing their portfolios, students:

- Recognized that authoritative content may be packaged formally or informally and may include sources of all media types (Frame: ‘Authority is Constructed and Contextual’);
- Articulated the capabilities and constraints of information developed through various creation processes (Frame: ‘Information Creation as a Process’); and
- Recognized that authoritative content may be packaged formally or informally and may include sources of all media types (Frame: ‘Information Has Value’).

Apart from these pedagogical considerations, LibGuides CMS also was effective for addressing technical requirements related to hosting communities of learning and student-led content creation online. Based on the authors’ experience using LibGuides CMS in the blended learning environment, this platform appears well adapted for use with fully-online courses. For instance, LibGuides CMS supports a variety of course implementations. With ENGL 1102, the authors addressed privacy concerns by creating password-protected pages visible only to course participants and the librarians embedded in the course. By contrast, students in HUMN 3431 were required to develop public-facing online portfolios, meaning that privacy was not an issue. Similarly, both courses required that students have editorial rights only to certain guides or pages. LibGuides supported this flexibility while preserving faculty control of student-created content and protecting the library’s guides and assets.

**Conclusions & Next Steps**

Since this paper represents a pilot of LibGuides CMS as an instructional platform, the authors currently are able to provide only anecdotal evidence of its effectiveness as a teaching tool in meeting SLOs. However, the response from students and instructors during the spring 2017 semester was encouraging, and both courses will repeat for 2017-18. As a result, the authors anticipate expanding our current collaborations to set and further evaluate SLOs and assessment strategies exemplified by the roadmap described by Oakleaf (2014). Based on our experiences during the spring 2017 semester, the authors intend to further evaluate students’ development of Dispositions associated with the Frames as an outgrowth of engaging target Knowledge Practices. As part of this, the authors intend to increase emphasis on copyright and citation practice, especially regarding use of online images and video (Frame: ‘Information Has Value’).

Throughout our collaborations with ENG 1102 and HUMN 343, LibGuides CMS showed significant potential for supporting deeper learning by students as engaged learners and content creators in the blended learning environment. Based on our experiences, we believe the platform is equally well adapted to online-only implementations. Through thoughtful implementation, and with appropriate instructional supports, librarians and instructors may engage students in online communities of learning and digital content creation practices that support richer active learning experiences, putting them on the road to achieving SLOs and developing general dispositions of lifelong learning, critical thinking, and inquiry. As such, LibGuides CMS provides a convenient,
flexible, and scalable alternative to traditional LMS implementations, supporting efforts to move beyond the limitations of one-shot instruction in the blended and distance learning environments.
References


Virtual and Valued: A Review of the Successes (and a Few Failures) of the Creation, Implementation, and Evaluation of an Inaugural Virtual Conference and Monthly Webinars

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Abstract
Planning and implementing online professional development opportunities is challenging but attainable. This paper explains how a group of librarians from different institutions worked to plan, market, implement, and evaluate monthly webinars as well as an inaugural online conference, despite never meeting in person. The web conferences began in-state and grew to include presenters and attendees from across the nation. A review of available web-conferencing technologies will be provided, including free and open-source options. This paper includes details about the planning process, including subcommittee collaborations, social media marketing, and day-of logistics. Failures during event planning and execution—and tips to avoid them—will be discussed, as well as next steps looking forward.

Introduction
The North Carolina Library Association (NCLA) is a statewide organization representing the needs and interests of diverse North Carolina libraries and library professionals. It focuses on topics that include information literacy, intellectual freedom, and general information services. To effectively serve the needs of such a diverse body of professionals, there are over ten sections and roundtables, including the College and University Section (CUS) (NCLA, 2017a). The CUS represents college and university librarians and other professionals employed primarily by academic libraries. Established in 1978, the objectives of the organization are to unite North Carolina college and universities, to provide opportunities for discussion and activities which will further professional growth, to promote and develop improved library service, and to seek to fulfill the objectives of the NCLA and the Association of College & Research Libraries (NCLA, 2017a).

Prior to 2016, CUS offered several opportunities for robust professional development activities, such as one-day conferences and face-to-face workshops for their members. Participants voiced concerns about the cost of such opportunities both in registration fees and travel as many members were hours away from the designated location. When the new executive board began their two-year tenure in 2016, they began to explore online options as a mechanism
to offer travel and registration-free professional development opportunities to their 125+ members.

For academic librarians, professional development offers additional training that may not have been provided in library school or from on the job training (Pan & Hovde, 2010). For many academic librarians, it is part of the job description to stay current on new trends and technological advancements and to present and publish on topics of librarianship (Cary, 2001). As the discipline constantly changes with the unceasing advancement of technological capabilities, librarians are expected by their institutions to keep up with these changes with little or no additional funding for training (Coiffe, 2012; Wyatt, 2007). Those who have a professional development budget are encouraged to travel to conferences or attend high cost online and face-to-face workshops presented by various professional associations. For those with little or no budget, free professional development opportunities are typically hard to find. Also, providing ‘free’ face-to-face professional development can be very expensive if one considers the costs of hosting a speaker, renting a venue, supplying refreshments, and printing handouts, agendas, and programs. The cost is perhaps the main reason behind the increase of online professional development opportunities, such as webinars (Coiffe, 2012; Fink, 2013; Wyatt, 2007).

The high cost of offering face-to-face options was analyzed by the CUS executive board when examining possible professional development opportunities for members. In 2016, the CUS executive board sent out a survey to their members to determine which types of events and professional development opportunities would be most beneficial. Over 95% responded that they would be interested in attending and/or presenting at free virtual webinars and conferences (College & University Section, 2016). The survey results thus demanded that the CUS executive board review various types of web conferencing systems available to determine the most feasible platform for offering online opportunities to CUS members.

**Web Conferencing Systems Review**

There are countless web conferencing options available, ranging from free to prohibitively expensive. The first step in choosing a web conferencing system is taking inventory of institutional needs and using that list to guide decision-making. For example, one may consider the approximate number of people that will attend offered webinars since many conferencing systems have a limit on how many individuals can attend at one time. Systems also vary widely in their specific features, such as the type of statistical reporting, automatic messaging, recording, and interactivity. It’s also worth noting that many colleges and universities may already pay for a web conferencing system that is free and accessible for use in providing professional development opportunities.

The CUS executive board explored well known webinar systems and reviewed their options and usability. After careful analysis, they decided on a system that would allow for 200+ users, offered a video option and included a visible chat for interactive participation. Assessment options such as pre-registration with contact information, automated, edited follow-up emails to include links to evaluations and surveys and recordable options were also identified and investigated.

Appendix A represents the results of the review and includes the following information: cost, maximum number of attendees, specific features, and contact information. Zoom was
chosen as the system of use for CUS professional development opportunities for its function, maximum number of attendees (500), and low cost.

**CUS Webinar Wednesday**

Recognizing the CUS member’s need for accessible online content, the CUS executive board identified opportunities for expanded online teaching and learning. The idea for shorter, content-rich webinars—called *CUS Webinar Wednesday*—was born. Research indicates that an interactive webinar with a maximum length of one hour is ideal for learning (Zoumenou et al., 2015). With this in mind, *CUS Webinar Wednesday* is intended to be shorter presentations, with a maximum presentation time of 40 minutes and 20 minutes for questions. Though hosted by the CUS section, the webinars are an engagement opportunity for all types of librarians and library staff, including library students, professional library staff, academic librarians, public librarians, and others. Given this diverse audience, the webinars were crafted to cover a wide range of topics, including but not limited to distance library services topics. Held at least once a month, the webinars took place on Wednesdays at presenters’ time preference.

The name *CUS Webinar Wednesday* was picked for the ease of scheduling as well as marketing. A consistent day of the week allowed attendees to eventually expect the webinars, and “Webinar Wednesday” seemed like an ideal name for marketing on the CUS website, social media, and listservs. Per request, each webinar was recorded and archived on the CUS web page, [http://www.nclaonline.org/college-university](http://www.nclaonline.org/college-university). Since the first webinar in September 2016, thirteen webinars were presented with over 900 registered US and international attendees. To date, over 959 views have been noted on the archived North Carolina Library Association YouTube channel where the recordings are stored (NCLA, 2017b).

**CUS One-Day Virtual Conference**

Riding on the success of the *CUS Webinar Wednesday* series, the CUS executive board opted to offer a virtual one-day conference for its members. In order to reach a wider audience and to provide concurrent virtual sessions, the CUS executive board collaborated with members of Appalachian State University’s Center for Academic Excellence and librarians from the Belk Library & Information Commons. Additionally, a call for CUS member volunteers to help plan and organize the one-day virtual conference was released and volunteers were recruited and then assigned, per their request, to one or more of a variety of planning subcommittees. The volunteers were located throughout North Carolina and collaborated entirely online. Volunteers used their own institution’s web conferencing system to meet and used the collaborative features of Google Apps for Education to create content from a distance. The following is a summary of the work completed by each sub-committee.

**Registration/Agenda Committee**

The registration subcommittee used Google Forms to create the conference registration form that would be pushed out via the marketing subcommittee. It was decided that the registration form would be as simple as possible and collect some basic intake information that would give the CUS conference planning committee an overview of the type of librarians attending. This subcommittee was also tasked with creating the conference agenda and schedule. It was determined that the conference would run from 9:30 AM to 4:45 PM EST. This included a...
short introduction at the beginning of the virtual conference and three concurrent sessions per 45
minutes, for a total of 17 sessions.

Proposal Review

The proposal subcommittee was responsible for creating the proposal guidelines and the
proposal request form, and then reviewing the proposal submissions. Once the guidelines were
created, Google Forms was used to create a simple proposal form. The members of the
committee created a template and sent out a call for proposals to all relevant library listservs as
well as corresponding Facebook pages. Once the deadline for submissions passed, the
subcommittee met asynchronously to review the submitted proposals. It was determined that
since this was the first virtual conference, all of the proposal would be accepted in order to
provide a wide range of offerings. Once this decision was made, all of the presenters were
contacted and made aware of their acceptance. The proposal review committee would continue
to communicate with the presenters leading up to the conference, to confirm presentation times
and presentation description details.

Marketing Committee

The marketing subcommittee was tasked with creating marketing materials to be used for
branding the conference and soliciting presenters and eventually attendees. To distinguish the
CUS One-Day Virtual Conference from the larger governing body of NCLA, the marketing
subcommittee decided to create a conference logo (Appendix B) that could be used for all
marketing materials moving forward. However, care was taken that the logo complemented the
wider NCLA; to that end, the logo incorporated the NCLA logo and colors. The logo also
featured the theme of international collaboration and learning since the goal was for the
conference to be attended internationally. The logo was added to the NCLA CUS One-Day
Virtual Conference website and was also given to other committees to incorporate into Google
Forms that were created to solicit presenters. The next step for the marketing committee was to
solicit presenters for the virtual conference. Using the list created by the technology committee,
the marketing committee created a list of library listserv email addresses and Facebook pages to
market the opportunity. The goal was for the conference to be far-reaching. With this in mind,
library organizations across the nation were considered in regards to marketing.

Technology Committee

The technology committee was responsible for solving any technical issues with the
webinars before and on the day of the conference. The virtual conference itself was hosted and
run by volunteers from the CAE and Belk Library at the Appalachian State University campus.
Members of the committee also provided training and practice per request, to any presenters that
were new to online presenting or Zoom software itself, prior to the day of the conference. A
committee member was assigned to each webinar as a facilitator and tech support to allow the
presenter to focus on content and presentation. They were available to assist attendees in the
webinar who were having technical problems or questions and to record each session. It was of
great importance for the CUS executive board that technology not become a barrier but rather a
bridge in attending and participating in the conference.
The CUS One-Day Virtual Conference was a huge success and served as a more than adequate substitute for the usually offered in-person conference. Figure 1 reflects data collected from the follow up survey concerning the overall conference rating.

One of the major advantages of the online conference was the cost savings for all parties involved. There was no registration or attendance fees for librarians or presenters. Table 1 shows the cost comparison of the face to face 2014 conference compared to the 2017 virtual conference. Venue rentals fees, refreshments, and other miscellaneous items accrue a large cost that fortunately were not necessary for an online conference.

Figure 1. One-Day Virtual Conference rating
Table 1

Cost Comparison of 2014 and 2017 One-day Conferences

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
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<td>$268.95</td>
</tr>
<tr>
<td>Reg.</td>
<td>$20-$40</td>
<td>$0</td>
</tr>
<tr>
<td>Attendance</td>
<td>125</td>
<td>200+</td>
</tr>
</tbody>
</table>

Assessment

The 2016–2017 online professional development opportunities were evaluated by the CUS executive board and it was determined that while the outcomes were primarily successful, there were a few failures. In regards to assessment, a follow up survey and links to the archived sessions and materials was sent to all registered attendees after each webinar. Data collected from the survey was used to adapt the online series to suit the needs of the attendees and to suggest relevant topics of interest for future webinars. An example was offering the webinars at 2:00 pm EST per the request of the west coast librarians who wished to attend at a reasonable hour in their time zone.

The comments and suggestions section of the survey was overwhelmingly positive as attendees noted that they welcomed both the learning opportunities and the chance to present their expertise at no cost and travel. Many remarked their appreciation that these opportunities were available (and archived) to all library employees regardless of specialization, affiliation, or physical location. Additional comments suggested a list of relevant topics to offer in future webinars such as open source textbooks and makerspaces (whose scheduled webinars revealed a high number of registered attendees). The suggestions mirrored what is up and coming in the library literature and it was considered a great success to provide a free virtual introduction and training for librarians.

The survey was also a useful means of collecting demographic data of the attendees. Figure 2 shows the demographics of the librarians who participated in the webinars as attendees or presenters. It is interesting to note that the webinars attracted 41% senior librarians and 12% who classified themselves as ‘Other’.
Figure 2. Webinar attendee demographics.

Figure 3 shows the webinar attendees’ library specialty classifications. The largest number of attendees were Reference/Instruction librarians at 34%, which was expected due to the instruction-based topics offered. Additionally, there was a remarkably high number of attendees in the IT, cataloging, and special collections fields.

The most surprising statistic was the geographic reach of the webinar attendees. Over 53% were members of NCLA including 28% who were also members of CUS, and the rest were from across institutions across the United States, including librarians from Canada, Mexico, and Trinidad & Tobago.

Figure 3. Webinar attendees library specialties.
As previously mentioned, all sessions from the series and conference were recorded and archived on the CUS website. Analytics from both the website and YouTube channel reveal a large number of views and hits weeks after the scheduled webinars. Archiving on the YouTube channel also provided the opportunity for viewers to leave comments and ask questions which appear on the site.

Additionally, the CUS executive board has received invites to collaborate with other sections, such as the newly formed Distance Learning Section, to work together on future virtual conferences.

**Successes**

The first offered *CUS Webinar Wednesdays* had few (no more than 20) attendees. In order to increase popularity and the numbers of attendees, the CUS executive board extended the monthly webinar series and, later, the one-day virtual conference beyond the virtual borders of North Carolina. This was accomplished by soliciting attendees and presenters from several of the American Library Association and Association of College & Research Libraries listservs, NCLA social media outlets, and a small mention in the “News from the Field” section in the *College & Research Libraries News* (Free, 2017). What was perceived at first as a ‘failure’ quickly became a success as the numbers of registered attendees and call for proposals tripled. There was also a noted increase of views from the archived webinars on the NCLA YouTube channel.

**Failures**

With great success comes several opportunities for failures and opportunities for improvement. Collaborating at a distance is easier with the advent of cloud technology, such as Google Apps for Education, but this distance can also lead to errors if the appropriate editing and double-checking does not take place. For example, when the virtual conference registration Google Form went out, the edit link was included—meaning that interested parties were actually editing the form rather than being able to register. A new email with the correct link needed to be sent out and all of the social media marketing needed to be updated. This was a manageable error, but in the future the committee must pay closer attention to all manners of details, such as the share settings on conference documents.

The scheduling of the one-day virtual conference was also an area of improvement. Since the committee accepted all proposals, some of the sessions were scheduled later in the day on Friday. Attendance definitely tapered off at this point. In the future, the committee will be more critical of proposal and select fewer of them so that attendance can remain high. While not ideal, these failures confirmed the effectiveness of the CUS Executive committee’s evaluation process. The committee will continue to use the qualitative data of anecdotal assessment and the quantitative data of surveys to grow and improve an overall successful online professional development series.

**Next Steps**

After the stage of initial assessment was complete, the CUS executive board spent time considering next steps and the future of the *CUS Webinar Wednesday* series and one day-virtual conference. As the terms of many of the executive board were ending, they considered whether or not the webinar series could be transferred to a NCLA section with more of an online and
distance focus. NCLA had recently approved the formation of a new section, Distance Learning Section, and the online webinars would be transferred to and managed by this new section. The hope was that this transfer would allow the focus to remain on distance and online library services, with an emphasis on instructional library services, and yet also encourage space to meet the needs of more diverse library professionals such as collection managers, archivists, and public and school librarians. The Distance Learning Section could potentially serve a more diverse population of librarians, allowing for a larger assortment of webinars.
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Appendix A

Review of Web Conferencing Systems

<table>
<thead>
<tr>
<th>Web Conferencing System</th>
<th>Maximum # of attendees</th>
<th>Features</th>
<th>Cost</th>
<th>Contact info</th>
</tr>
</thead>
</table>
| Adobe Connect Webinars  | 100                    | ● Audio/video conferencing   
                          |            | ● Analytics  
                          |            | ● Breakout rooms  
                          |            | ● Chat  
                          |            | ● Recording  
                          |            | ● Screen sharing  
                          |            | ● White board  | $130 per month | http://buyconnect.adobe.com/store/adbecnn/Content/pbpag e.LandingPage#info-webinar |
| WebEx Premium 200       | 200                    | ● Audio/video conferencing  
                          |            | ● Recording,  
                          |            | ● Screenshare  
                          |            | ● Whiteboard  | $39 per month | https://www.webex.com/pricing/index.html |
| GoToWebinar Starter     | 100                    | ● Audio/video conferencing  
                          |            | ● Analytics  
                          |            | ● Automatic emails  
                          |            | ● Chat  
                          |            | ● Polls  
                          |            | ● Recording  | $89 per month | https://www.gotomeeting.com/webinar/pricing |
| Zoom                    | 50-500                 | ● Audio/video conferencing  
                          |            | ● Analytics  
                          |            | ● Automatic emails  
                          |            | ● Chat  
                          |            | ● Polls  
                          |            | ● Recording  | Free-$19.99 per month | https://zoom.us/pricing |
| Google Hangouts         | 25                     | ● Audio/video conferencing  
<pre><code>                      |            | ● Chat  | Free | https://hangouts.google.com/ |
</code></pre>
<p>| Skype (Basic)           | 25                     | ● Audio/video conferencing  | Free | <a href="https://www.skype.com/en/">https://www.skype.com/en/</a> |</p>
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| Apache Open Meeting               | 125          | ● Audio/video conferencing
● Chat
● Polls
● Recording
● Screen sharing                  | Free         | https://openmeetings.apache.org/index.html    |
| Team Viewer (Business License)    | 5            | ● Audio/video conferencing
● Chat
● Recording
● Whiteboard                       | $ 41.90 per month | https://www.teamviewer.com/en/pricing/full-comparison/ |
Appendix B

CUS One-Day Virtual Conference Logo
Implementing a Proactive Chat Widget in an Academic Library

Lydia L. Pyburn
University of Texas at Arlington

Abstract
Sometimes users need to be asked if they need help. This is difficult with online users, because in-person cues cannot be used to engage when the users need assistance. Proactive chat widgets help to solve this problem as the chat box slides out onto the screen and prompts the user for help. The need for the proactive chat widget was also seen as EZproxy data revealed only 1% of online students who accessed the library’s resources reached out for help through chat. This paper will cover the successes and challenges of implementing a proactive chat widget on the library’s website, catalog and databases; the review of proactive chat software; the collaboration of departments within the library to test and launch the widget; chat transcript analysis for coverage and training; and roles of the different departments staffing the chat service.

Introduction
The University of Texas at Arlington (UTA) is one of the campuses in the University of Texas System. The full time equivalent of students on campus is approximately 25,000 students, and the campus is well known for its engineering and nursing programs, specifically its online RN-BSN program. The nursing program is the largest program on campus and is a frequent user of the library’s electronic resources. Looking at the EZproxy data of remote uses, the College of Nursing accesses the library’s resources over 20,000 times; however, chat questions reflect less than one percent of the questions received. To increase the services offered to online nursing students, a group was charged to explore how to increase chat usage, investigate implementing proactive chat for the library, and piloting a screen sharing service through chat.

Literature Review
Helping online students can be more difficult than helping someone in person because it is harder to identify when they need help. It is easier in person when working on the desk because staff can scan an area and see if anyone looks confused or is waiting to be acknowledged to receive help. Staff and students are trained to be approachable by not having their eyes glued to the computer, looking down for long periods of time, or otherwise not paying attention. The Reference and User Services Association (RUSA) Guidelines for Behavioral Performance of Reference and Information Service Providers offer behavioral cues for in-person and remote reference with standards for each, but a common theme with remote reference help is that it is best to answer in “a timely manner” (American Library Association, 2013).
But what is a timely manner in reference response time? Is it based on user expectation or on staffing? Zhang and Meyer (2014) note that Zopim, a proactive chat software, has the “Chat Rescuer” feature which will notify the patron that the librarian is busy after three minutes and they will get help as soon as possible. According to Imler, Garcia, and Clements’ (2016) study in implementing the chat widget, if chat was busy and users could send a follow-up question and get an email response, over half of the users expected a response within an hour. To manage users’ expectations, the follow-up message needs to include an estimated time frame for when users will receive a personalized response.

Though offering help through email and chat is available to online users, often times the help button is hidden on a help page or somewhere on the website. Several studies have shown that placing the chat on the most visited pages of the website such as homepage of a library website, within the library catalog, or within a database has helped to increase chat usage. The Health Sciences Library at the University of Tennessee Health Science Center in Memphis (UTHSC) analyzed and coded virtual reference questions from 2012-2014 to understand user search behavior to direct the redesign of their library website (Fan & Welch, 2016). UTHSC’s new website included terminology to match the patrons, fewer clicks to get information, and a revision of the search box to search more databases (Fan & Welch, 2016).

One of the issues with implementing a proactive chat widget is compatibility with the website. UTHSC could not implement a pop-up widget on their home page due to coding, so they implemented a pop-up chat box on their E-Resources page to appear after five seconds and static widgets on database LibGuides and other pages (Fan, Fought, & Gahn, 2017). The placement of the chat widget on the E-Resources page received questions about e-resources and how to request articles and access e-resources (Fan et al., 2017).

Timing of the chat trigger is important in extending the offer of help before users leave the library website. Penn State University Library conducted a study on whether users would find the pop-up widget annoying or not. The study consisted of 30 participants and the chat timer was set at 18 seconds, and only one participant found the study annoying (Imler et al., 2014). The University of Texas at San Antonio (UTSA) did annoy some of their users with their proactive chat timer set at 30 seconds, but the complaints were minimized in comparison to the number of users initiating and responding to chat (Kemp, Ellis, & Maloney, 2015). Graselli Library at John Carroll University chose to set the chat trigger at three minutes to give students time to become familiar with the website (Zhang & Mayer, 2014).

After implementing a proactive chat widget, UTSA chat questions increased 40% with an average of eight questions and hour (Maloney & Kemp, 2015). An analysis of chat transcripts and statistics showed an increase in reference questions with subject expertise, so the UTSA changed staffing model to include subject librarians as “advanced instruction skills and collections knowledge were necessary to provide expert and timely answers” (Kemp et al., 2015, p. 769). In Fan, Fought, and Gahn’s (2017) study, the pop-up widget did not result in more chats than the static widget on the home page, which received approximately half of the incoming questions; instead, the pop-up widget was in second with 18% of the questions. The increase in reference questions online differs from in-person reference, which has been on the decline in the
past decade. This decline could be attributed in part to the convenience of using the library online, changes in user behavior, and increase of online programs available at universities.

**Progression of Virtual Reference at UTA**

The previous model of chat was staffed by one department. The reference desk consisted of librarians and reference assistants. Chat was available from 8am to midnight, Monday through Thursday; 8am to 6pm on Fridays; 9am to 6pm on Saturdays; and 10am to midnight on Sundays. Staff was trained to answer any incoming questions on the phone, chat, and email, and to refer to librarians or other departments when needed. There were weekly meetings to explore databases and cover questions and training to help with anticipated questions. Questions were received through chat, email, or texts, and there was a designated phone line that users could call for reference help. Chat at that time was advertised as Ask a Librarian, and a link on the library homepage directed users to chat.

With the creation of a consolidated service desk that combined reference and circulation, the chat staffing model was rearranged. Primarily library assistants and student workers would answer incoming questions on chat with librarians handling a few hours a week. The chat hours were expanded to reflect those of the main library, Central Library. Central Library was open 24/5, starting Sunday at 9am and closing on Friday at 8pm and then reopening on Saturday from 9am to 8pm. Since the librarians’ time on chat was limited, the service was change from Ask a Librarian to Ask Us. At the time, there was a proposal for more departments on campus to help staff the chat service, so Ask Us was removed to avoid confusion and to be more inclusive to users who needed to ask a question outside of research. The email alias changed to askus@uta.edu from library-ref@uta.edu to reflect this. The old reference number was removed as well on order to centralize the service.

The library used an embedded widget on the Ask Us page that linked from the library homepage, LibGuides, and the EBSCOhost and ProQuest databases. Users could remain anonymous and not have to type in a question before entering chat. The current staffing model consists of library assistants, lead student workers, and librarians doing chat. The library assistants and lead student workers perform chat while on a desk with multiple staff. The librarians do chat from their office.

With two departments covering chat, the expectations of answering and referring questions was based on the Reference Effort Assessment Data (READ) Scale. The READ Scale “is a six-point scale tool for recording vital supplemental qualitative statistics gathered when reference librarians assist users with their inquiries or research-related activities by placing an emphasis on recording the effort, skills, knowledge, teaching moment, techniques and tools utilized by the librarian during a reference transaction” (Gerlich, n.d., para. 1). The service desk staff was expected to answer questions rating 1-3 on the READ Scale: informational, directional, equipment troubleshooting, and reference questions. The reference questions included instruction on searching the library catalog and databases, directions to recommended databases and guides, and when to refer. The librarians were expected to answer...
all questions, but questions related to library accounts, book renewals, and fines were answered by the service desk staff.

After each chat transaction ends, a popup of the statistics form will appear so staff can enter their data from the transaction. The statistics form is standard for all statistics entered by all library staff (see Figure 1).

Advertising of the chat service is primarily through information literacy instruction sessions. A link to the library and chat is placed as part of the syllabus as well as in Blackboard. At the beginning of the school year, emails are sent to faculty detailing services, collections, and the chat.

**Chat Task Force**

After a visit to the University of Texas at San Antonio Library and seeing their use of Zopim on the library website and catalog, a task force was formed to investigate the cost of implementing a proactive chat widget. The group tackled whether the scope of chat services should be an informational aspect or to get more in-depth reference help. The group was also tasked with implementing a new screen sharing option to chat to provide the same visual information a user would experience in receiving in-person reference help. The chat task force was not part of the original staff that had created and implemented LibChat for the library, so there was a lack of experience in creating widgets.

![Figure 1. Screenshot of library website](image-url)
The task force included staff from the different departments staffing chat. There was a library assistant who was the administrator for LibAnswers and LibChat from the consolidated service desk; the health sciences librarian whose expertise on nursing questions was needed as the majority of questions on chat were nursing students; the business librarian with extensive reference experience whose department was sharing staffing of chat with the service desk; and the online librarian who was the administrator for LibGuides and oversaw tutorial creation for the library.

Proactive Chat Widget Review

The chat group looked into different chat software available. Funding for the new chat widget was expected to come from online user fees. The criteria were to find software comparable to LibChat, the library’s current chat software. The group identified key features such as the software needed to be able to accommodate over a hundred accounts as the library staff and some student workers needed accounts. The ability to have multiple staff on chat at the same time as well as handle multiple incoming users was a requirement. Other functionalities included the ability to attach files and transfer chats among library staff. The software would incorporate into the other Springshare products the library used such as LibGuides, the discovery tool Summon, library website and some databases. With assessment, the software would need to be able to pull statistics and data at will, and not rely on the company to generate the report. Cost was another factor as some chat software was disregarded, as the charge for 100 accounts was $25,000 dollars. An environmental scan of other libraries using a proactive chat widget showed Zopim as the preferred chat software.

While looking into the functionality of the embedded widgets and features used to compare to other chat software, it was discovered there was a slide-out tab option. This option could be set on a timer and slide out on the screen similar to proactive chat software that uses time as a trigger. With this discovery, the decision was made to do a pilot using the slide-out tab as a test on the library website before purchasing other chat software.

Screen Sharing Service

Screen sharing is the ability to share screens with another online. The use of screen sharing can replicate in-person reference help as both the user and library are on the same screen to show steps taking in the research process and adding value to service for online users. The chat group developed criteria for evaluating screen sharing software to be used as part of the screen sharing service. This service was for more in-depth consultations online when a chat conversation could be seen taking more than 20 minutes.

The first of the three criteria for the screen sharing software was that it required no downloading. This would result in a delay for the user getting immediate help on chat and could be interpreted as a barrier for chat. Any software required would need to be supported by library systems and installed on computers. The second criteria was that it not require a camera to use the software. Some screen sharing software required a web camera to be installed to share video and audio. The requirement would be another barrier for users without a web camera. Web cameras were purchased so users could see the library staff helping them on chat. Though it does
help to build rapport with the user if they can see that they are being helped by a person and not a chat bot, a web camera is not a necessity and an image of library staff can suffice. The third requirement was that it would be free to use. To remain sustainable and with the pending budget, it was necessary to find a free option with minimal advertising.

The software selected was join.me, a web-based software that uses an URL link to access the chat and which can be given to the user within LibChat. There can be multiple users at the same time getting help if you are doing a group consultation. There is also an internal chat within so if the student does not have a camera or mic they can still communicate within the screen sharing consultation. Join.me features include letting the user control the mouse to replicate how they discover information, but the library staff can regain control if the session goes awry.

**Piloting Proactive Chat**

After deciding to use the slide-out tab chat widget from LibChat, a meeting was scheduled with Digital Creations (DC), the department that maintains the library website and oversees digital projects within the library. The library currently uses Drupal, an open-source content management system, for its website. The purpose of the meeting was to determine if the widget could be incorporated into the website and what amount of the code could be edited. The decision was to place the chat widget on the right-hand side of the screen as users do not scroll down, sync the colors with the website design, and create a new chat icon to increase visibility of Ask Us. DC added the java script tag to the Drupal HTML template, which is the outer HTML template for all pages on the library website, and added it to the library test server before placing on the website (see Figure 2).

In late June 2016, the chat widget was placed on the website. The website previously had Chat text and a link to the chat. During this testing, Crazy Egg was used to see whether more users clicked on the chat icon compared to the chat text. The chat widget was set to 0 seconds, meaning it would not slide out but remained fixed on the website until someone clicked on the tab to chat. The Crazy Egg testing failed the initial week so the trial was extended and the heats scans did not reveal much information. Instead, we looked at the statistics for the embedded widget on ask.uta.edu and the proactive chat widget. Data showed 122 users clicked on the widget versus 21 who clicked on the text. Looking at the statistics for June, it was discovered that the chat widget increased visibility and resulted in more chats. The decision was made to remove the Chat text from the website for redundancy and keep the proactive chat widget on the website.

**Proactive Chat in Summon and Databases**

A month after testing the widget on the website, the decision was made to add the proactive widget was added to the library’s discovery tool, Summon, databases, and LibGuides. Although the chat widget will have the URL of where the user initiated the chat, it is harder to separate for statistical purposes. The chat widget code for the website was duplicated and renamed for each placement on the library resources.
This was not the first time the widget had been edited within Summon. After usability testing in Summon, the chat had been moved to the top in the page and put in red. Its previous placement on the right-hand of the screen was covered up when users hovered their mouse over more information for the items in the search results. The new widget did not face the same problems, as it overlays on the page. The proactive chat widget was added to the EBSCOhost and ProQuest databases, but there were errors, so the embedded chat widget had to remain at the time. Several months later, the ProQuest databases received an update and the proactive chat widget code was added. With librarians having personal chat widgets, more than one chat widget on a guide caused errors, so the embedded chat widget remained on the LibGuides.

**Setbacks**

The weekend before the beginning of the fall semester, chat was inundated with questions from nursing students in the RN-BSN program over their first assignment. In response, staffing would need to be increased to accommodate more than one person on chat and more than two during peak times. While working on the staffing model, there was an abrupt departure of staff that covered approximately 40 hours of desk coverage. With the increase of usage, the statistics showed an average of nine questions an hour. One person would not be able to handle that many questions, especially if a reference question was received. As a result, staffing of chat was changed to the service desks at the branch libraries, librarian hours on chat were increased, and volunteers with previous chat experience were asked to help.
In addition to the staff departure, the expected funding from online students was prioritized to other needs on campus. This meant that no new staff could be hired to assist with nursing questions on the weekend and purchasing any additional technology and software was put on hold.

As a result from the lack of funding, the hours were reduced for chat and the timer for the chat trigger was turned off. The chat was also set to automatically log staff off at closing as long as they were not in an active chat. This would help to reduce missed incoming chats when staff forgot to log off at the end of their shift. The screen sharing service was also placed on hold since only one person would normally be on chat.

Six weeks after chat triggers turned off, incoming chat questions stabilized. The new staff hired to replace the departed staff were expected to start soon, so chat triggers were turned on and set to slide out 60 seconds.

**Assessment**

After the end of the first semester with chat triggers partially on, an analysis of the implementation was a priority to prepare for the spring semester. The assessment looked at statistics, chat transcripts, and staff feedback.

The statistics indicated that there was missing data on the READ Scale and the entering of statistics was not consistent. Part of the inconsistency was with dropped chats when users would not open links that would open in the same window than in a new window. Other dropped chats were from navigating the library website and not being reconnected due to Internet problems. Some of users would reconnect, stating they had been disconnected, so some staff only entered the statistic for one chat. When juggling multiple chats during busier times, some staff did not enter in statistics.

Looking at the data based on the READ Scale, there were more 1 and 2 level questions, which indicated there were not as many in-depth research questions as anticipated compared with other academic libraries that saw an increase in reference statistics. To correlate the lack of reference questions, the statistics tagged as reference questions were analyzed to show entries on the READ Scale as 1s and 2s when they should have a rating of 3 or higher. Looking at corresponding chat transcripts, known-item searches were being marked as a reference questions. Some librarians were ranking the questions as a level of difficulty of 1, which is the least amount of effort despite the expertise of knowledge.

This analysis highlighted the need to explain to staff the importance of entering statistics correctly, as they were used for staffing purposes. A one-page guide of the READ Scale ranking with examples was created for staff to use during reference and for training and clarification of questions.
**Staff Feedback**

The next step of assessing the implementation of the proactive chat widget was staff feedback. A meeting was scheduled to talk with staff without supervisors present in order to get candid responses. The reasoning for not including the supervisors was that some staff will not be honest with their complaints or issues because they do not want their supervisors to think less of them as employees. It was emphasized during the meeting that the purpose was to fix issues, not to place blame on anyone, and that anonymity and honesty would work. Staff stressed that they felt at times that they could not refer questions to librarians because it could be perceived that they were not doing their job. Staff also asked that chat end one hour before closing, because it was difficult to go through the closing procedures and be on chat at the same time at the branch libraries. Chat was the responsibility of staff at the branch libraries because it has much less traffic than the Central Library.

Staff also mentioned concerns and frustration with the chat widget sliding out and wished that once they said clicked “No Thanks,” it would remain on the side of the screen. Another concern was that users would be less inclined to discover information on their own and would use the chat service to get an answer. This was evident in reviewing chat transcripts as some users would express frustration at being given steps to access an article and would demand a PDF of the article to be sent to them because they did not have the time. Also, some users disconnected from a chat if they did not get the response they wished and reconnected trying to get another person on chat. Some users reconnected as anonymous with the same request, but their IP address would reveal it as the same user.

**WORF**

For quality of chat transcript analysis and to rate chat transactions as a secret shopper, a rubric was developed based on the reference training that service desk staff received the previous summer. The training incorporated the name, Lieutenant Worf, a Klingon security officer on the Enterprise from “Star Trek: The Next Generation” and “Star Trek: Deep Space Nine,” and used it as an acronym to help staff remember the reference interview process. The television character stresses honor and duty, and WORF was translated to Welcome the user, ask Open-ended questions, Repeat for clarity, and Follow-up to make sure the users need is met or referred to other staff. The motto “Be like Worf” was also used on flyers on the service desk. The rubric adapted the RUSA Guidelines for Behavioral Performance of Reference and Information Service Providers to a three-point scale with one at the lowest and three at the highest (see Figure 3). For each point on the scale, there was an in-person and online rating with examples.

LibChat offers chat ratings as a qualitative measurement and the library includes it with every chat widget created. At the end of chat, the user is prompted to rate after the end of chat with 1 as Bad, 2 a So So, 3 as Good, and 4 as Great. Chat ratings were not used for quality transactions, because approximately 61% of chat transactions were not rated from when the proactive chat widget was implemented to the end of the semester. Out of users that do rate chats, satisfaction average was 3.47.
### Results and Recommendations

From implementing the proactive chat widget in the library’s online resources, incoming answered chat questions have doubled overall from 4020 questions answered in 2015-2016 to 8120 questions answered in 2016-2017 (see Figure 4). For some months, the incoming chats have tripled in numbers. These numbers affirm that having a proactive chat widget on a library’s online resources will increase chat usage which means reaching more online users. With the increase in numbers, the staffing model has changed to make sure there are two or more staff members on chat during busier times of the day. If a staff member is overwhelmed with chats, they could send an email to each department asking for help similar to ringing the bell for help at a service desk.

There have been some canned messages added to LibChat for more commonly asked questions. These were a quantitative research nursing assignment, ending chat for unresponsive users after 5-10 minutes, revising directions to the databases and how to select a database, and adding the EZproxy URL for sending links to database search results. The language of the canned messages was changed to more of a conversational than transactional tone.

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### WORF Rubric flyer

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcoming</td>
<td>No greeting, noisy environment, rushed through transaction</td>
</tr>
<tr>
<td></td>
<td>Greets with hello, some eye contact, no alternatives offered</td>
</tr>
<tr>
<td></td>
<td>Greets and offers assistance, eye contact, clear and polite, lets user pace the transaction, offers alternatives</td>
</tr>
<tr>
<td>Online</td>
<td>You allow to great/respond, short responses, non-friendly, ignores incoming chat</td>
</tr>
<tr>
<td></td>
<td>Greets, offers help, uses positive language</td>
</tr>
<tr>
<td></td>
<td>Greets and offers assistance of statements question formats help, emphasizes with user's need, maintains contact with user, uses positive language</td>
</tr>
<tr>
<td>In-Person</td>
<td>Not asking questions, asks yes or no questions</td>
</tr>
<tr>
<td></td>
<td>Asks some open-ended questions</td>
</tr>
<tr>
<td></td>
<td>Asks many open-ended questions letting the user guide the transaction</td>
</tr>
<tr>
<td>Online</td>
<td>Not asking questions, asks yes or no questions</td>
</tr>
<tr>
<td></td>
<td>Asks some open-ended questions</td>
</tr>
<tr>
<td></td>
<td>Asks many open-ended questions letting the user guide the transaction</td>
</tr>
<tr>
<td>Repeat</td>
<td>Doesn't repeat user's questions, makes assumptions, no explanation of process</td>
</tr>
<tr>
<td></td>
<td>Repeats user's questions for clarification but minimal explanation of process</td>
</tr>
<tr>
<td></td>
<td>Connects open-ended questions to discover actual need and correct misinformation, explanation of process and policies</td>
</tr>
<tr>
<td>In-Person</td>
<td>Doesn't repeat user's questions, makes assumptions, no explanation of process</td>
</tr>
<tr>
<td></td>
<td>Repeats user's questions for clarification</td>
</tr>
<tr>
<td></td>
<td>Repeats user's questions for clarification, explains process or need to find information, provides explanations</td>
</tr>
<tr>
<td>Follow-up</td>
<td>Doesn't offer do satisfaction check</td>
</tr>
<tr>
<td></td>
<td>Does satisfaction check to make sure need is met, offers referral to patron but doesn't contact staff</td>
</tr>
<tr>
<td></td>
<td>Does satisfaction check, sends referral to appropriate staff, offers referral to patron, accepting it possible, encourages use of library</td>
</tr>
<tr>
<td>Online</td>
<td>Doesn't check if user's need is met, doesn't welcome user to use service again</td>
</tr>
<tr>
<td></td>
<td>Checks if need has been met during transaction, encourages user to use service again</td>
</tr>
<tr>
<td></td>
<td>Checks if need has been met, offers assistance for other help during session, sends referral email to appropriate staff and includes user, encourages user to use service again</td>
</tr>
</tbody>
</table>

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Figure 3. WORF Rubric flyer
In order to be proactive rather than reactive on chat, the health sciences librarian sent an email out to both departments with details of upcoming assignments, steps on how to handle the question, directions to resources and guides to use, and when to refer to a nursing librarian. Communication for other issues on chat such as database issues are emailed to staff to make sure they are informed when on chat.

Ongoing training for library staff is recommend in order to retain and improve their searching skills and their knowledge of the library and its policies. This will build up upon their expertise of answering questions, which is needed with the complex questions users are asking. After training on the READ Scale, there have been fewer errors in associating the READ Scale with type of question. Analysis of chat transcripts can help to change the nature of chat. Harvey Sacks said that “omitting a greeting establishes roles as transactional rather than relational” and “courtesy tokens” such as please and thank you and “verbal ‘softeners’” to minimize request for information (as cited in Dempsey, 2016, p. 457). With this in mind, training should also include adding users name in response to help and adopt conversational language in transactions and canned messages. Chats are longer with relational cues than those without and this was evident in transcripts. An example is a user initiating a chat with “I need this article” rather than with greeting.

Before implementing a proactive chat widget, it is recommended to do a pilot test because visibility of the widget can lead to increased usage. It is essential to manage expectations and draft a chat policy that staff can refer to, especially when multiple departments staff chat. A similar policy can be drafted and advertised so users know what to expect when they use the service, such as help and response time on emails.
To help avoid staff burnout, look at times of increased chat and place additional staff during peak periods. Adjusting the time of the chat trigger can help to manage incoming questions. Also, do not have staff work more than four hours of chat at a time. Acknowledging staff feedback can help to improve morale and service on chat.

Set up maintenance checks as updates to databases and other software can cause errors. One update had the chat icon image turned vertically, so the image had to be rotated and fixed with the update. An update to Summon removed the widget code and the website widget had been added, so there was no distinction of that time period from the catalog of the website. Also, update FAQs and information before every semester.

When implementing a proactive chat on a library’s resources, there will be a need to find a balance between teaching and customer service. Assessment, maintenance and training are essential in keeping up with the needs of online users.

**Acknowledgements**

Special thanks to the library staff that contributed to making the proactive chat possible at UTA: Carol Byrne, Kalei Vandertulip, Kalei Malczon, Ramona Holmes, Andrew Leverenz, Krystal Schenk, Candy McCormic, Fen Lu, Ashley Zmau, and Holly Talbott. William Glenn at UTSA for his correspondence on their chat experience implementing proactive chat.
References


Library Connection: An Interactive, Personalized Orientation for Online Students

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Abstract
Library orientations are a very common learning experience for residential and online students. These all have similar goals of introducing students to the library and helping them feel more comfortable in navigating the library. The Library Connection is a unique type of library orientation that provides meaningful feedback to students in a personalized, connected learning environment. This program is offered through digital badges. A conventional qualitative content analysis was used to analyze the text responses of students completing this orientation. Six interesting themes emerged from this data including student perceptions of the use of the library, developing advanced search techniques, and managing a complex information environment. Interesting trends include the disparities between student and instructor perspectives of their learning and the need for a hybrid orientation that provides scaled instruction while still giving meaningful feedback and personalized responses to students from librarians.

Introduction
Librarians involved with distance learning should regularly look for ways to provide equivalent services to online students as recommended from the Association of College & Research Libraries (ACRL) Standards for Distance Learning Library Services. In particular, the principle of equivalent access states that:

all students, faculty members, administrators, staff members, or any other members of an institution of higher education are entitled to the library services and resources of that institution, including direct communication with the appropriate library personnel, regardless of where they are physically located in relation to the campus where they attend class in relation to the institution’s main campus, or the modality by which they take courses. Academic libraries must, therefore, meet the information and research needs of all these constituents, wherever they may be (Association of College & Research Libraries, 2016).

In the case of Pennsylvania State University (Penn State), the location for this study, residential students at the main University Park Campus are able to participate in a large, two-day Open House event (Cahoy & Bichel, 2008). This event has established learning outcomes that aim to make new students feel comfortable in accessing the library and learning strategic ways to effectively utilize everything the library offers. Penn State World Campus is the online
campus that has about 14,301 students in fall 2017 (Penn State University Budget Office, 2017). These students are located all over the world and have access to the library in an equal capacity to residential students. Access is not enough, however, and the library has developed a dedicated plan for strategic information literacy integration. Part of this plan is a program known as The Library Connection. This serves as the equivalent event of the residential Open House. Students earn four digital badges in one of their first semester courses. Librarians personally evaluate each student’s work and provide meaningful and targeted feedback based on the student responses. There are established learning outcomes for this program:

- Students will locate the subject guide for their specific course in order to find resources relevant to their field.
- Students will select a topic in LionSearch and find one book and one article or one popular and one scholarly resource for their paper topic.
- Students will assess their information to access through ILL/borrowing resources/commonwealth campuses.
- Students will be able to identify librarians as resources/experts and contact them for their reference, instruction, and navigational questions in order to forge a connection to the library.
- Students will locate and understand the library resources listed in Canvas in order to use the library within their learning management system.

The problem we were trying to solve through the development of this initiative was a way to meaningfully integrate a library orientation into the course of a student’s instruction. Therefore, we partnered with the English department to place The Library Connection in English 015, a course in which the library traditionally instructs several face-to-face courses in the form of one-shot instruction. This is a novel way to deliver online instruction and library orientations and there is not a lot known about what students are learning or affectively experiencing in this design. Therefore, the research question we sought to answer is: How are students experiencing their online library orientation through The Library Connection? Secondary questions include: What are students discovering about services the library provides? How do students perceive the value of The Library Connection? How do students feel after attempting library related tasks?

**Literature Review**

*Common Barriers to Online Learning Success*

Regardless of the quality of design of online learning (Clark, 1983; Kozma, 1994), students will have their own perceptions around the barriers that exist to their successful learning. Common barriers include lack of social connection, confidence level with learning technologies, belief that they can learn online, enjoyment with learning online, and perceived differential treatment to residential students (Muilenburg & Berge, 2005).
Perceived isolation

The most critical barrier found by Muilenberg and Berge (2005) was a lack of perceived social interaction. Related to this support from the university and motivation were the next most important barriers to success. Students are completing their schoolwork from wherever and whenever is most convenient for them. In an asynchronous environment, like Penn State World Campus, they do not even have regularly scheduled class time together. This perceived isolation impacts their motivation, persistence, and likelihood to finish their degree at that school (Hart, 2012).

Another aspect of isolation is the lack of a connection to the university, both emotionally and physically. Students at a distance will frequently have less of an emotional connection to their university than students who are there in-residence. They do not get to experience key moments that are integral to the culture and community. Because of this, it is imperative to go beyond providing access and equivalent services. While those are noble goals, a holistic approach to serving online students will consider their emotional needs as well (Delahunty, Verenikina, & Jones, 2014). From a physical standpoint, online students do not have the fortune of connecting buildings with services and ideas with opportunities (Ludwig-Hardman & Dunlap, 2003). Effectively, they have no mental structure of the organization of the university. For instance, Penn State World Campus students often call the library seeking help from library staff on finding a book only to find out that they are on the bookstore website. When students are commonly introduced to all of the resources of a university they can experience cognitive overload (Mayer & Moreno, 2003) and fail to make connections in a meaningful way.

There are specific ways to reduce the isolation students feel such as utilizing discussion boards or other Web 2.0 tools, informal groups, reaching out and interacting with students often, and being present in the class. In this instance, we employed the use of digital badges to create a personalized and interactive learning environment where students received meaningful feedback from librarians.

Online Library Tutorials and Modules

Several studies have explored the effectiveness of online tutorials for library instruction. Silver and Nickel (2005) found that there was no difference in learning outcomes between a face-to-face and online tutorial and students actually preferred the online tutorial. Gonzales (2014) found through a survey of the literature that even though some results are mixed, that online tutorials are at least as effective as face-to-face instruction. Stiwinter (2013), used multiple development tools to create simple modules that replicated information covered face-to-face. Students showed learning gains on the module content, but students who received face-to-face instruction faired 10% better on the citation analysis of their major research paper in the class. This points to a common limitation of scaled modules, they have a narrow scope of effectively teaching content. Shen (2016) conducted research that showed no statistical differences between the content covered in in-person and online instruction.
Interactive Learning

Recent evidence in online learning has come to the conclusion that adding online learning to a traditional face-to-face course increases student achievement, but only when this additional learning is structured as interactive. In specific, “increasing the time spent studying online is only useful when it takes place as some form of interactive learning” (Castano-Munoz, Duart, & Sancho-Vinusea, 2014, p. 157). In this case, interactive learning refers to actual interactions in the learning environment. This is different than interactive simulations which seemingly permit learners to take ownership of the simulation and control different variables and parts of the system. The purported learning that occurs through these simulations has not actually been realized in practice (Holzinger, Kickmeier-Rust, Wassertheurer, & Hessinger, 2009). Raish (2016) came to the conclusion that simulations and interactive tutorials can reach the goals of teaching content but are lacking in building the practices and crosscutting concepts of a field. Conceivably, interactive tutorials designed with eLearning tools such as Articulate or Captivate afford significant scaling because all of the interaction comes through the technology. When learning outcomes are measured in terms of content gains (Chen, 2010) found that these modules and simulations effectively meet the outcomes. If learning goals extend beyond content and declarative knowledge, then the results of interactive simulations to meet those goals becomes less positive (Chen, 2010).

However, when it comes to looking more at the nuanced aspects of the field and developing sound understanding from exploratory learning, a blend between interactive modules and tutorials, and instructor guidance to focus learners’ attention is ideal (Holzinger et al., 2009). Interactive tutorials typically do not include some of the most effective points of effective instruction including articulation and externalization (Krajcik & Blumenfeld, 2006), reflection (Sawyer, 2006), meaningful application (Bolin, Khramstova, & Saarnio, 2009), and accommodation of new ideas (Cress & Kimmerle, 2008). Interestingly, no library online tutorials took full advantage of the interactive learning described above (Stiwinter, 2013). Not only did they not have reflective components, but the interactions largely consisted of watching animations and clicking through with arrow buttons. The Library Connection described in this paper adopted the blended approach of a multimedia learning environment in the form of text, videos, interactive simulations, and personalized guidance provided by a librarian offered through digital badges.

When this focus on content learning is turned to the library, it makes sense to bring into the conversation the transition to metaliteracy, threshold concepts, and the ACRL Framework. These efforts have driven a force away from skills and traditional bibliographic instruction and towards multiple literacies, the practices and dispositions of information literate professionals, and the expansive information environment. Mackey and Jacobson (2014) espouse metaliteracy as how learners navigate “the expansive and interactive information environment” (p. 1) and Townsend, Brunetti, & Hofer (2011) explain threshold concepts as “the ways of thinking and practicing for a discipline” (p. 854). More research is needed to see if traditional library tutorials are effective at helping students meet these outcomes in addition to the already established ways that they effectively reach students.
Effective Online Instruction

Library research is slowly reaching the conclusion that there is no significant difference between the effectiveness of instruction delivered face-to-face or online (Churckovich & Oughtred, 2002; Germain, Jacobson, & Kazcor, 2000; Holman, 2000; Nichols, Shaffer, & Shockey, 2003; Zhang, Goodman, & Xie, 2015). This debate has been settled for decades in educational technology and learning design since the famous Clark and Kozma debate of the 1980s. More interesting questions have emerged as these conclusions have been found. Namely, people have begun investigating learning outcomes between different online instruction such as Guide on the Side versus online video tutorials which found that students had better learning outcomes from the Guide on the Side instruction (Stonebraker, Robertshaw, & Moss, 2016). This again points to the importance of design in online instruction.

One of the more interesting current debates in online instruction is personalized versus scaled instruction. Bowen (2015) explains the two major trends in higher education as the rapidly rising cost of a degree and the increase in online learning. Online learning has the potential to increase productivity and rein in costs of higher education. However, doing so comes at a current risk. It necessitates that online learning is scalable and has less manual labor required. Personalized learning is gaining traction as a valuable way to provide differentiated instruction and meet students where their zone of proximal development is. What is unclear is if there are differences in learning between scaled interactive modules such as Guide on the Side and the personalized design established through The Library Connection. Each of these types of online instruction have different pros and cons. Two benefits of the model of The Library Connection are the ability to provide feedback and a relationship built with a librarian. The Library Connection is personalized and provides feedback to each and every students across their learning journey. Gaytan and McEwen (2007) emphasize that “the role of meaningful feedback cannot be overstated” (p. 117). The Library Connection does have a degree of labor evolved in these manual evaluations, but it also affords for more nuanced evidence and assessments and a deeper understanding of how students perceive their library instruction. In terms of the relationship with the librarian in this case, Stronge, Ward, and Grant (2011) found that the most effective teachers had different strategies than the least effective including strong relationships and support for their students. Unlike scaled online modules, The Library Connection starts a personal relationship with a librarian for the student.

Connected Digital Badges

A digital badge can be considered a microcredential that recognizes learning in a variety of contexts from formal classroom settings to afterschool clubs to professional development. This movement was started in large part from a partnership between Mozilla and the MacArthur Foundation. The Mozilla Open Badges program created a standard in the field that allows badges to be shared between platforms and social media networks as long as the developers and issues follow the Open Badging Standard (Goligoski, 2012). Rughinis (2013) characterizes digital badges as visual markers with conditionalities and tails. He stresses that badges need to be considered in their role in motivation, setting learning pathways, and providing clear expectations from the badges. The digital badge movement has increased in adoption with researchers doing work in teacher professional development (Gamrat, Toomey-Zimmerman,
Digital badges fit well in a connected learning environment in which students are connecting nodes and making insights based on new networks formed. They also complement the new focus on metaliteracy and threshold concepts because they allow learners to navigate the complex information environment in a way that is meaningful and open-ended, with structure and guidance provided. There are multiple aspects of this connection. Figure 1 visualizes all of the connections being made when students earn a digital badge in The Library Connection.

**Library Orientations**

Library orientations take many formats but the goal is always to introduce students to the services and resources available for them in the library. Library orientations have been shown to significantly increase student usage of the library (Walsh, 2008). Orientations can also begin the student’s information literacy development. Farrell, Driver, and Weathers (2011) created tutorials delivered through Blackboard, their LMS, in foundational online courses. Other researchers have also seen the need to make library orientations more meaningful to students. Pashia & Critten (2015) used ethnography as a way to engage students in how they would use the library following a tour. There are three other library orientation type modules in other World Campus orientations including Transitions, Tech Camp, and New Student Orientation. All of these programs are developed for new World Campus students who need to learn about essential university support services and technical requirements. These follow a more traditional scaled tutorial format. The Library Connection is an orientation that takes place in weeks five and six of English 015 directly before their first research assignment.

*Figure 1. Model of student earning a digital badge in The Library Connection*
Our Design

The Library Connection uses expected frames and outcomes from the ACRL Framework in order to build connections and make nodes in the course of the student’s natural searching. For example, students are encouraged to use LionSearch with a topic that is of interest to them and make connections with guidance from the design of the badges. Additional interactions come from the feedback provided by the librarian. Every badge starts with an articulation of prior knowledge and ends with a reflection and application of what students learned throughout the badge. The middle steps, which are two or three, have the students complete some activity within the context of the library and information seeking. A few of the middle steps have automated quizzes, but the prior knowledge and reflection are always given as text responses. This design comes from findings from Sawyer (2006) and Krajcik and Blumenfeld (2006) that articulation of prior knowledge, externalization, and reflection are very important components of effective learning environments.

Students earn digital badges by joining their class group at badgesapp.psu.edu, completing the badges listed in their group, and submitting their evidence. Librarians who have been trained to evaluate are then added to the student groups and provide feedback to students when their evidence is submitted. Students do not need to wait for librarian feedback in order to progress to the next step. The librarian uses the rubric shown in the badge system to determine if a student has met the requirements for that badge. The badge step is then either approved or returned depending on the quality of the student work.

Figure 2. English 015 Library Connection group.
Context

Penn State is a large R1 university located in the Mid-Atlantic area. There are over 96,000 students, including just over 14,000 fully online students. These students are part of the World Campus, the online arm of Penn State. World Campus started in 1998 out of a strong tradition for distance education and correspondence courses. Since that time, World Campus has evolved Penn State into a strong dual-mode institution. These students come from all over the world, but a large percentage of undergraduates are Pennsylvania residents and/or military students at 44 and 18%. Regardless of their proximity to a Penn State residential campus, these students are deliberately choosing to partake in the Penn State experience at a distance.

In January of 2016, the lead author started as the Online Learning Librarian for Penn State. This position was created out of a commitment to increase the library’s presence in the online course space. Prior to this there was uneven and inconsistent outreach to online students. As I started in the position, my major directive was to increase library services, resources, instruction, and awareness of those services for online learning stakeholders. This population includes the students, course authors, course instructors, instructional designers, academic advisors, multimedia specialists, and administrative personnel. Penn State online learning development and design is truly a team-based approach (Moore & Kearsley, 2011).

One of my first initiatives was to create an online learning orientation program for students that was instructionally meaningful and engaging. What emerged from this is a program known as The Library Connection. This program is offered as a series of connected digital badges that have flexible completion options. It can be completed by students as part of a class, on their own as a virtual library orientation, or as part of a required new student orientation. This study reports on two cohorts of English 015 who participated as a pilot group to assess the scalability of the orientation and the impact of having it offered later in the semester when it was meaningfully connected to assignments.

The Library Connection was run in half of all English 015 sections in fall 2017 and will be offered in all sections starting in spring 2018. This expansion points to the success of the program. This article describes the student experience as evidenced by their textual reflections, and a survey, as well as the instructor survey that explored broadly the impact of the badges on the quality of student work.

Researcher Bias

All research has bias. A sign of credible interpretive research is that the researchers address their potential bias and assumptions made (Golafshani, 2003). Two major assumptions of this research are that the ACRL Distance Learning Standards should guide initiatives made in online learning and that there is inherent value in providing meaningful, personalized feedback to students through an interactive, connected learning environment. The lead author has been involved in designing and implementing digital badge systems since 2012 and is a strong advocate of their potential for capturing previously unrecognized learning and providing signposts on the learning journey.
Methods

An IRB was successfully obtained to collect student data in the form of text responses and survey results. Within the badging system, students are asked to provide evidence in a variety of formats. They can upload a file, take a quiz, enter a text response, or supply a URL to a Web 2.0 tool used to create their information. For the purpose of this study, we did not look at responses to quizzes but maintained records from file uploads, text responses, and URLs. Each step of a badge requires evidence and each badge used has an average of five steps. The pilot classes each had an enrollment of 24 students. Over the course of two semesters we could have had a potential of 96 students complete The Library Connection. There was an average step completion rate of 55 students. Some steps had more completions and some had less. Seventy-two students completed the initial survey in the first badge they complete. Twenty students completed the post-survey. The instructor who partnered for the initial pilot also completed a survey each semester. The records from these badges were kept in a secure Box folder. In addition to the data from the text responses, we also administered an initial and post survey. The initial survey sought to gather information on prior library use and confidence levels while using the library while the post-survey assessed their experience in completing the digital badges, both user and learning experiences.

Methodology

The methodology used here was a conventional content analysis (Hsieh & Shannon, 2005) with supplemental data provided by the surveys. Conventional content analysis is used when you have limited use of emerging themes from existing literature. This was an appropriate methodological choice because completing a library orientation through interactive digital badges has not been reported on in the literature. In addition, existing online modules research has relied on the pre and post survey method of analysis, not textual responses. Essentially, while there is existing literature on library orientations and online student’s experience using the library, these do not capture what students do in The Library Connection. This approach to data analysis is very similar to other qualitative methodologies that immerse themselves in the data and allow themes and findings to emerge. In this approach, relevant literature or findings are addressed in the discussion section with any exploration of how it connects to other literature and suggestions for future research. The expected outcome of conventional content analysis is “concept development or model building” (Hsieh & Shannon, 2005, p. 1281).

Results

The research question we sought to answer is: How are students experiencing their online library orientation through The Library Connection? Secondary questions include: What are students discovering about services the library provides? How do students perceive the value of The Library Connection? How do students feel after attempting library related tasks?

There were six themes that emerged from the data. These are discovery of library services in a strategic manner, deeper understanding of access to information, advanced searching techniques, student perceptions of librarian usefulness, and complex information
environment. The designation of Student A, B, C, does not mean the same student. Due to the nature of data collection quotes were not attributed to one student repeatedly.

**Discovery of Library Services**

The first theme that emerged was the discovery of library services in a strategic manner. In response to the first secondary question, students commented on the most helpful part of the badges being that it helped them discover services and ways to access their class prior to beginning the badges.

This theme became evident through several comments such as:

- **Student A:** I also learned how to request an interlibrary loan, which is something that I never knew was available to World Campus students.

- **Student B:** The most I learned was the various functions available to students for use of the library.

- **Student C:** I learned about the resources available, many of which I was unaware of. This is a good course for first time online students as they start their coursework. Wish I would have taken sooner.

Students were clearly making gains in discovery of services. This accomplished multiple of our learning goals which were to help students learn and identify use cases for services such as Ask A Librarian and Interlibrary Loan. Sixty-one percent of students who completed the post survey discovered Ask-A-Librarian, Interlibrary Loan, and I Want It through the Library Connection. An interesting finding is that only 16% of students discovered LionSearch, but that this was the most helpful badge.

As a particular example, here is a deep explanation of InterLibrary Loan:

**Student A:** Illiad is a service that allows Penn State students to access materials that are not necessarily available in Penn State’s database, it allows the users to request a resource that will be typically delivered to them in a few days. The end result for this allows students access to even more materials to help them succeed.

**Deeper Understanding of Access to Information**

The second theme that emerged was deeper understanding of access to information. We prompted students to dig into what it means to have E-Reserves listed for you in your course.

- **Student A:** I’d use E-Reserves if I needed to access a certain resource for my class. E-Reserves makes it possible for everyone to access the same resource all at once.
• **Student B:** The goal of E-Reserves is to provide open access to any resource that might be closed. Since some resources allow 2-3 users to view the resource at a time, E-Reserves makes it possible for a whole class to access a resource together.

Students were clearly engaging at a basic level with the notions of access to information, licensing constraints, and the value of library-purchased materials.

*Advanced Searching Techniques*

In this instance, the notion of the word advanced needs refined. This is because as you learn more about a field, your zone of proximal development with searching would become more refined and advanced would look different than when you started. These students are showing progression in their information discovery process.

• **Student A:** I learned that LionSearch can provide many resources in the Penn State Library, but you may enter a search text that is too broad and gives too many results. One trick that helps is using quotation marks to ensure the words must appear next to each other and narrow the search.

• **Student B:** LionSearch is used most to research topics and not specific items. Also the use of quotation marks helps refine the topic search even better. With the refine your search column on the left side of the screen we can use the publication date to narrow our search.

Both of these students are showing development of nuanced searching features including the realization of a search that is too broad and the best types of searches to perform in LionSearch or another discovery based tool. The application of iterative searching is best demonstrated by the comment below:

**Student A:** I was searching for a rhetorical analysis of a presidential speech that I had to review for my speech class. The rhetorical analysis was not easy to find, but I chose to search for both the Penn Library and Google Scholar. I was able to see that the information was relevant to me because it would support the rhetorical situation of the speech. There were a tremendous amount of roadblocks on the library site because it brought out information that was not relevant to my search. I searched more than 30 times to locate the information that I needed. Even after I discovered the information I needed, supporting searching would bring any additional material that I needed. Once I found the information, I was very confident that the finding would answer my question.

This particular student is truly remarkable in their persistence in searching. They did not give up after searching for 30 different searches. However, after spending all of this effort, they were very confident in the information that they found.


**Student Perceptions of Librarian Expertise**

In the Ask A Librarian badge, students were asked to comment on questions they would pose to a librarian as well as the variety of jobs that librarians perform. Some students posed questions suitable for response on Ask A Librarian chat while others asked questions that would be best served through a more intensive reference session.

- **Student A:** One additional case is you can contract a Librarian if you have an idea for a business or product, librarians can direct you to resources on how to obtain a trademark.

- **Student B:** There is something very important to me: I’ve often wondered how I can evaluate if I can trust an information source on the internet. Sometimes the sources say the direct opposite, and I don’t know how to evaluate which is more trustworthy. I would love a librarian to teach me that. I’d also like to know the steps, every good research should follow.

While Student A here posed a question that was capable of being answered in a short reference chat, Student B is really posing something best addressed through a longer research appointment or consultation.

**Complex Information Environment**

A step in the subject guides badge required students to begin using the library without any guidance or resource assistance. This leads to students seeing a tremendous amount of information or no information at all. Both of these results led students to being dissatisfied with their initial search. The next step introduces students to subject guides, course guides, and how-to tutorials. The first step points to the challenges students have in navigating information without assistance.

- **Student A:** I was impressed with the amount of information available to me on a wide range of topics; but it is extremely overwhelming, and yes, I would probably spend too much time looking through many things that were not relevant to my search.

- **Student B:** I went to digital maps and searched for allergrippis trail. Now I did spell it wrong the first time, which was an error that I like about Google. If I don’t spell it correct, it makes successions. Anyway, the trail I was looking for is located within an hour of main campus, so didn’t think I’d have an issue with finding it. It returned no maps, however, even with all the map options selected.

This second student continued their search with a different map and did end up having success in finding some maps. Students received feedback from librarians that prompted them to take the next appropriate action, whether that was narrowing strategies or connecting students to the correct library department in order to access this information.

Supplemental results come in the form of quantitative feedback from surveys given to the students and instructor.
When students were asked how much they learned from the badges, 80% stated that they learned either a great amount (45) or a fair amount from the badges (35) (see Figure 3).

In addition, students were asked which badge was most useful to them. An overwhelming 35% felt that the LionSearch (Summon) badge was the most beneficial and the least useful badge was tied between the I Want It/Interlibrary Loan and Course Reserves badge at 30%.

An interesting trend from the survey results was that more students viewed The Library Connection as having no impact on their assignment than students who perceived it having maximum impact. While the difference was slight at 25% and 20% respectively, the instructor who participated in the survey felt that student’s work was significantly improved in relation to their assignment and indirectly our learning outcomes for the Library Connection. Even more interesting is the finding that only 25% of the students felt their assignment was stronger as a result of completing the badges.

For the most part, students felt that completing The Library Connection improved their confidence level as 70% saw an increase in this level and 30% felt it would not change their level of confidence.

**Discussion**

In the Ask-A-Librarian badge, students complete their presurvey. A key finding from this survey illustrates the lack of understanding students have with their perceived use of the library. Students were asked if they have previously received library instruction and how they received it. An overwhelming 58% of students stated that they have received this instruction through Canvas, their learning management system (see Figure 4). The student’s perception of library instruction as accessing the library through the library resources tab as indicated below is not the same perception as what librarians consider to be formal library instruction as this tab simply provides links to their E-Reserves and subject guide.
Figure 4. Library Resources tab in Canvas.

One of the most interesting trends that has implication for other research that utilizes a pre and post survey model for both learning gains and students preferences is that there were differences in the students’ text responses and in their overall feedback provided by the post-survey. While it is impossible to match individual text responses to survey responses, the qualitative responses entered during the course of engagement with The Library Connection are overall more positive in perceptions than the post-survey. Time may play a role in student’s perceptions.

Another aspect of time is the placement of The Library Connection. In comments from the post-survey, a student stated:

Earning the badges were great, there is so much information offered at the beginning of the semester. Sometimes you forget and it leaves you searching in the wrong places to find it. The badges aided in finding information that was forgotten from Tech Week.

Much library literature on orientations has focused on helping connect students to the library, making it a less scary place, and learning about essential services (Brown, Weingart, Johnson, & Dance, 2004). The theme about connecting students to services shows exactly what students are taking away from an interactive orientation. They are getting to experience these services in their natural information seeking cycle, it is not an imposed module not connected to the information network that they navigate. Additional research is needed to explore the notion of authentic learning in asynchronous library orientations as authentic learning has been demonstrated to increase student engagement and learning gains (Herrington, Oliver, & Reeves, 2003).
The finding that only 16% of students discovered LionSearch, but that it was considered the most helpful badge lends credence to the notion that it is not enough to give students access to information. While this is a great start to equivalency, it does not mean that students will know what to do with the tools they are provided. This is a similar finding to the repeated failures of SchoolNet in Canada (Shade & Dechief, 2007).

Diamond & Pease (2001) investigated the types of questions received through reference chat and found that in the early days, the service could handle a range of questions, but that complex questions were not answered in the same manner as they would be in a longer research appointment. Helping students to see if their level of question was appropriate for the communication format they used was a goal of much of our feedback in The Library Connection.

A certain level of the badges used are designed to have students struggle. This is connected to the theme of using advanced searching techniques. Holzinger et al. (2009) suggest that simulations are most effective when they include some level of ambiguity supported by experts. Bransford (2007) finds that helping people to adapt and proactively change in rapidly evolving environments. When students would write a search response about how they felt with their searches in LionSearch, they would frequently comment on the challenges they had or the number of results their search returned. A common conclusion would be that more search results are better than fewer. As experts, we know that this is not the case. Thus, the feedback provided to the student would include something that would help them to realize that their frustrations are legitimate, searching is iterative, and that targeted search results are actually preferred. This type of learning environment solves the problem that Mayer (2004) is concerned with in a pure discovery-based learning environment. As students’ progress, they must be supported at a developmentally appropriate level.

The complex information environment is described by multiple researchers from diverse fields such as Siemens (2005), Head (2013), Thompson (2013). Our findings suggest that students really struggle with navigating this environment, which is aligned with the findings from Head (2013). Information access at our fingertips does not mean that students can automatically filter and find relevant information. Siemens (2005) views this as an aspect of the connected environment in which multiple nodes affect other nodes and the ability to find information is more important than the information currently found. Students need guidance and feedback in order to begin navigating complex information environments.

Conclusion

The Library Connection is an interactive learning experience from the perspective of the activities the students complete and the feedback they get from librarians. The goal of this orientation was to provide an equivalent access to the services that residential students experienced through Open House. While the findings revealed important feedback and perceptions from students, supported with survey data, there is much more work that can be done in this area. One direct area to look at the actual scores of students who completed and did not complete The Library Connection to see if it is improving learning outcomes. Another direct line of research is to explore the potential of artificial intelligence to support automation of evaluation while still providing meaningfully relevant feedback to students. There are additional research
lines such as analyzing the results with different methodologies or to use these emerging findings to develop more directed or quantitative assessments for students. Namely, exploring the potential of interactive learning environments to go beyond content and engage students with the practices of their field are currently unknown.
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When Online Instruction Doesn’t Measure Up: How Can You Tell, and What Should You Do?

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Abstract
At Duquesne University, freshmen are required to take a one-credit information literacy course. This course has traditionally been offered mostly face-to-face, but has expanded into more online offerings. Unfortunately, the experience for students and instructors online was not as positive as those involved with the face-to-face version of the course. Assessment results on a variety of levels and anecdotal evidence indicated that students did not work as well together to learn as those did in the face-to-face version of the course. Not only did instructors receive lower student evaluation scores, but students did not perform as well on their final, collaborative project. While there will be barriers to learning online, especially when students work together in a group, instructors and instructional designers can take distinct steps to make the experience a positive one. Instructors must use particular interventions to increase student-to-student interaction that leads to learning.

Introduction
Many universities offer for-credit courses for information literacy, and many of these started as or have become online, or at least have an online version of the course. While most librarians have experience creating online content, creating a successful online course can be more challenging than it first appears. Successful online education is not simply placing readings and tutorials in a course shell and then letting the students navigate these on their own. While this might be beneficial at the point of need, to have students become information literate, especially in light of the Association of College & Research Libraries’ (ACRL) Framework for Information Literacy for Higher Education, requires engagement, collaboration, and interaction at a deep level. At Duquesne University, the online course of UCOR 100: Research and Information Skills was revised and expanded its offerings in 2016. However, many lessons were learned from this experience that revealed some deficiencies in the course content, structure, faculty preparation, and student learning outcomes. To improve the online course, the instructors used assessment, learning theory, and new learning outcomes based on the Framework to revise the course content and improve the experience for students and instructors alike.

Course Description
UCOR 100: Research and Information Skills is a one-credit course that is required of all students at Duquesne. In 2016, it was offered in several versions, including sections online, face-
to-face, and integrated in the learning communities offered through the College of Liberal Arts. The online and face-to-face versions were taught by library faculty as well as adjuncts, some of whom were librarians, but most of whom have master’s degrees in other fields. The course is created by the author in collaboration with other librarians, and then the author creates a Blackboard course shell and shares that and all the assignments with the instructors. All instructors meet at least once before the course to discuss assignments, strategies, and questions.

In 2016, the course online and face-to-face had a collaborative project in which students had a research topic (some instructors assigned a topic while others let students decide), described and critiqued their search strategy, cited their sources, and then included a CRAAP (Currency, Relevancy, Authority, Accuracy, and Purpose) evaluation of their sources. While the lessons tried to integrate some of the Framework, the course learning goals still reflected the ACRL Standards, and so the course included a combination of information literacy as conceived by the Framework and a more traditional approach to information literacy instruction. Thus, while there were some changes, it was still very similar to the way that the course had been taught in previous years. For the online version of the course, this was the first time a major collaborative assignment was required. Student-student interaction has been shown to increase learning and satisfaction in online courses (Bernard et al., 2009), so the instructors felt that having a collaborative assignment was important.

Group work in the online version of the course was much more difficult for students than for students in the face-to-face version of the course. Groups were asked to use the Blackboard group discussion function to collaborate, and sometimes there was very little activity among group members. Nonresponsive group members were a larger issue in the online course, and some groups, even after prodding, did not complete some of the group activities. Only one group discussion was graded, and this came late in the course (week twelve of a fourteen-week course). Most group discussions were focused on group coordination rather than on the completion of an activity or assignment.

Another issue with the course was lack of preparation for some of the online instructors. While some were experienced, others had no training on online instruction. Some instructors did not engage enough with students throughout the process, and students reported feeling abandoned halfway through the course by some instructors. While the author had tried to prepare instructors for some good practices for online instruction, there was not enough accountability of the online instructors until it was too late for some students.

**Assessment Results**

The author performed an authentic assessment on student work in 2016 by using a simple rubric to evaluate students’ search strategies. One requirement was that students consider alternate search terms, and so the author looked to see if students included this, and then looked to see if these would be appropriate terms for academic research. So, for example, if students were researching “Does music therapy improve outcomes for children with autism,” and they used “kids” as an alternate search term, then that was not considered appropriate for academic research. However, if they used “adolescents,” then that was considered appropriate. Students in the online version of the course performed worse overall on this assessment. Of the eighteen
face-to-face assignments collected, sixteen (88.89%) identified alternate terms for a search, and these were appropriate for academic research. Of the twenty-three online assignments assessed, seventeen identified alternate terms (73.91%), and sixteen of those seventeen identified terms that were appropriate for academic research. It should be noted that simply because the students did not report using alternate terms, that does not mean that students did not use them or did not know that they should use them in research. This assessment in combination with other assessment results did lead to some concern about online student success, though.

Additionally, the author completed her dissertation research that compared the way that students in the online course regulated their group learning with those in the face-to-face version of the course. Students online rated themselves significantly worse at regulating the group’s learning than those in the online version of the course, despite the fact that students online and face-to-face had similar ratings of their ability to regulate their own learning. Online students perceived group work as being less effective and less collaborative.

Course evaluations indicated that students were less satisfied with the online course than with the face-to-face course. At Duquesne, the Student Evaluation Survey (SES) asks questions to which students can respond to on a scale of one to five, with five being the most optimal score. The average SES score for the online course was 3.44 while the average SES score for the face-to-face course was 4.13. Additionally, students had higher rates of withdrawals from the online course and higher failure rates. According to a report by Litzinger (2017) in Enrollment Management, there were thirty-one withdrawals, nine incompletes, and eight cancel/dropped for students online for UCOR 100 out of 358 students. Face to face, there were four withdrawals, two incompletes, nineteen cancel/dropped, and twenty-five transfers out of 433 students. About 65% of the online students received a B- or better, while a little over 82% of face-to-face students received a B- or better.

Course Revisions

At the beginning of 2017, several of the library faculty at Duquesne revised the learning outcomes for information literacy at the university. These were based on the ACRL Framework, and also required that the course content be revised. Additionally, after the success of a seven-week course on information literacy for students in healthcare-related fields, the library faculty decided to try a seven-week format for UCOR 100. Since the author was also asked to create a six-week version of UCOR 100 online for the summer, this course was also used in the fall for all online sections.

The author convened a curriculum redesign task force, which used the new learning outcomes and the seven-week format to revamp the course. The course content focused more on critical thinking and reflection than a skills-based approach. For the final assignment, students were to collaboratively approach an authentic problem and present their findings in a website. These authentic problems were selected from a list, but focused much more on performing research for a real purpose. For example, while the previous iteration of the course included research questions like “Are dress codes sexist?” and “Does social media cause narcissism,” the new version of the course had a much more problem-based approach to learning. For example, one possible topic for the final assignment in the new version was, “You live in a city that has
found elevated lead levels in the water supply. You are on a neighborhood committee that is concerned that the mayor is not taking action. You will be speaking at a city council meeting, providing a potential solution, and also trying to convince the council to take action.” Not only is this an issue relevant to Pittsburgh and therefore might have impact on students, but this also required coordination and research to solve.

In the final assignment, students still evaluated their sources, but instead of using the CRAAP test, which resulted in a checklist approach to evaluation, students were asked to reflect on issues of authority, value, uniqueness, and bias of a source. This resulted in deeper reflection and engagement with the sources, and an understanding that context influences an evaluation. Additionally, students were asked to identify which sources were public and which were only available to those with access to databases so that they would consider how barriers to information access could impact those trying to solve problems in the community. Finally, they were asked to make recommendations to solve the problem so that they synthesized their research.

To improve the group dynamics in both the face-to-face and online version of the course, students were asked to complete a group contract. One of the questions asked students to consider how they would communicate with each other, and many of the online groups chose to text or use apps like GroupMe and Slack rather than to rely on the discussion board in Blackboard, which students did not seem to engage with as much. This also asked students to sign up for a role and gave guidelines to the role played by each student. Groups also completed at least one group report halfway through the semester as a way to hold themselves accountable for their progress. The author also had the leader of the group give weekly check-ins so that she could intervene if a student or students was not as involved as they should be. Groups could request that a student be removed from a group if they were not participating, in which case the removed group member would complete an assignment on their own. Since “commitment imbalance” – students not working as hard as others – is a great source of dissatisfaction students have with group projects online (Capdeferro & Romero, 2012), these steps help to remedy a scenario where a student is not contributing to the group.

Additionally, more of the work was scaffolded throughout the group project so that students worked on pieces of the final assignment and built on their skills throughout the course, something that is key to facilitating the group learning process (Brindley, Walti, & Blaschke, 2009). For example, after students individually found resources relevant to their topic, they were asked to post their citations on a Google Doc. Students also posted a draft annotation on the group discussion board to receive feedback from their fellow students and from the instructor. Points were often associated with group activities, whereas they had not been explicitly associated before, and these were focused less on group coordination and more on completing a specific activity. With these directed, graded discussion board assignments, students were more likely to participate in their group discussions and to complete part of their final assignment in the process. Group coordination occurred mostly on informal channels, though students were directed to consider progress and given guidance on steps they should take throughout the process. This is similar to macro-scripts given to students to help them coordinate group activities (Miller & Hadwin, 2015).
While some adjuncts who had experience with online learning were kept as instructors for fall 2017, new adjuncts were hired as well. Unlike previous job postings, this required that candidates had an MLS and experience using a Learning Management System. The author held a session with the online instructors to facilitate a discussion on good instructional practices for online learning. The author also asked to be placed as an observer in new instructor’s course shells so that she could ensure that they were engaging with students enough and provide feedback to improve their approach to online learning. All interacted with students and ensured that the students knew that the instructor was involved with their learning. Faculty contact with students is very important to online learning (Cable & Cheung, 2017). Guidance from faculty increases the likelihood that a student will complete assignments in the course (Ma, Han, Yang, & Cheng, 2015), and student-faculty interaction has been shown to have a positive impact on student learning and satisfaction (Bernard et al., 2009), along with persistence (Croxton, 2014).

**Revision Results**

The author taught two sections of the course in 2017, and had much more positive outcomes than with the fall 2016 students. Only one student withdrew from the course, and no students failed the course. Student Evaluation Survey results were above the mean for the University, School, and Department, and certainly well above previous SES scores for the online version of the course. While the final project had changed and could not be compared with the previous year’s, only one group out of eight (each group had four or five students) received less than a B grade on the final assignment.

There may have been some additional reasons for this improvement in course outcomes, though. One was that this course was limited to incoming students who enrolled and paid an additional fee. Many of the students, when asked why they had enrolled in the course over the summer, mentioned motivations like wanting to get a head start on their college careers and to free up time in their fall semester. Students were motivated to succeed, and since all were still living at home, may have had their parents or guardians encouraging them to keep up with their coursework. They also did not have a full course load to juggle, and while some had jobs and went on vacations, they did not have the hectic schedules of a college freshman in the fall.

The success of some of the changes was tested more thoroughly in the fall semester of 2017, when seventeen online sections were offered. Instructor grades for the group portion looking at source choices was evaluated. While individual differences in grading must be considered, the rubric gave direction to instructors by asking them to examine if the sources were relevant to the topic and met the criteria for being a mix of openly accessibly and only accessible with institutional credentials. This was a grade out of five points. For face-to-face groups, the average was 4.44, while online was lower with 4.22, which is not significantly different according to a t-test ($p=.136$). Despite the similar scores, instructors and students online still had some difficulties navigating the group project. While it is important for student success that students feel that they are a part of a learning community (Liu, Magjuka, Bonk, & Lee, 2007), after another semester of some students struggling to coordinate group work despite using guided activities, a team contract, and much instructor prodding, we decided to revise the course so that, while students would be required to interact on smaller assignment, the final assignment (and thus, the majority of their grade), would not be a collaborative one.
Suggestions for Successful Online Instruction

Teaching online is not simply a matter of moving assignments and discussions from a face-to-face course to a Learning Management System. Instructors need to have professional development opportunities to prepare them for the opportunities and challenges that online learning affords. Duquesne University is developing an online certification course, and all new instructors of the Research and Information Skills course who teach online will be required to be certified.

Assignments online should not necessarily appear like those in a face-to-face course, though certainly strategies like backward design works well for online learning. Students need detailed instruction about how to complete an assignment, and clear indications of the relevance and goals of the assignment are highly valued by students (Hosler & Arend, 2012). Students do not always avail themselves of discussion board areas devoted to asking questions, virtual office hours, or even the instructor email, so providing students with enough information on how to complete an assignment is very important. Providing students with rubrics that indicate how they should perform and how instructors will be grading allow students to direct their own learning as they are completing assignments (Haugh, Ahern, & Ruberg, 2017).

Instructor feedback is an important aspect of student success and satisfaction. Students who receive personalized feedback rather than collective feedback feel more satisfied and perform better in the course (Gallien & Oomen-Early, 2008). Students want timely feedback and feedback that highlights both what they have done well and what could be improved (Hosler & Arend, 2012; Sheridan & Kelly, 2010). In addition to using rubrics, we provide comments and feedback on student assignments so that they can improve their critical thinking skills by pushing their analysis further.

Instructor responsiveness is highly valued by students (Sheridan & Kelly, 2010). In an integrative review of online learning literature, lack of communication from an instructor is listed as a barrier to student persistence (Hart, 2012). Students should not feel abandoned by the instructor or that they are directing their learning all on their own. Instructors for Research and Information Skills post reminders, video announcements, and interact with students on the discussion board so that their presence is felt.

Collaborative work should be guided much more in an online environment. Even in discussion boards, assigning particular roles to students increases cognitive presence (Gašević, Adesope, Joksimović, & Kovanović, 2015). The earlier in a project that a group begins regulating their learning, the more successful the group will be (Kwon, Liu, & Johnson, 2014). Groups should be reminded that they should be setting deadlines, monitoring progress, and distributing workloads early in the project. In our course, associating these activities with grades increased group interaction.

When moving to an online course, appropriate steps should be made to ensure student success. Instructors must be prepared for the amount of effort that will be required of them as they set up the course, interact with students, deliver content, and give students feedback. Assignments should be designed with clear instructions and goals, and with rubrics or grading
information so that students understand how they are being evaluated. Student collaboration should be facilitated and scaffolded to ensure students move through the process of regulating their group work. Finally, the success of online instruction should be deliberately assessed. Student pass/fail rates, final grades, assignments assessed with rubrics, teaching evaluations, and self-assessments can all create a better understanding of where students (and instructors) are struggling. Using this information and the research on designing and delivering effective online courses, librarians and instructional designers can create more effective information literacy instruction delivered online.
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Ask Me Anything!: Reaching Out to Online Students in Higher Education Through Librarian-Led Virtual Office Hours

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Abstract
Offering students synchronous research and reference help can be a challenge for libraries that offer services at a distance. Virtual office hours can be a means of overcoming this challenge, allowing patrons the opportunity to seek timely point-of-need assistance. The author implemented a librarian-led virtual office hours pilot project at her home institution, Athabasca University. The program was initially received enthusiastically, but fewer and fewer patrons availed themselves of the service as the pilot progressed. This paper explores the implementation of the virtual office hours pilot project and its outcomes, and concludes with a discussion of how the pilot could have been more successfully carried out.

Introduction
Academic libraries that serve distance education institutions face challenges when it comes to providing for online students' information literacy and reference needs. Such libraries are, on the other hand, uniquely positioned to offer their students innovative, web-based takes on traditional library services. The author, the Information Literacy and Resource Access Librarian at Athabasca University (AU) Library and Scholarly Resources, implemented a six-month Virtual Office Hours (VOH) pilot project to determine the viability of providing patrons with a virtual space in which to seek synchronous research and reference help. VOH were offered as weekly, two-hour sessions via Adobe Connect, with each session taking place on the same day and at the same time every week. VOH were promoted within the AU community through a variety of channels, and feedback from faculty, university administration, and students regarding the implementation of the VOH pilot was generally positive. Initial uptake of the service was promising, although attendance numbers dropped relatively early into the pilot and did not recover. The author determined that this drop in uptake was due in part to a failure to market VOH directly to students, as well as to the decision to offer the service university-wide rather than to a specific academic program or course. At the end of the six-month pilot period, the author decided to discontinue VOH due to this lack of uptake.

Background
Athabasca University (AU), headquartered in Athabasca, Alberta, Canada, is a distance education institution that offers online instruction at the undergraduate and graduate level. AU currently has over 40,000 students enrolled in both full- and part-time programs of study, and
AU’s students come from a wide variety of educational, professional, and cultural backgrounds (Athabasca University, 2017).

AU Library and Scholarly Resources provides AU faculty, students, and staff with all of the services typical of an academic library, including reference services, research support, instruction in library use, materials lending, and interlibrary loans. These services are offered virtually through the use of technologies such as telephone, email, webinar, and text- and video-based tutorials.

AU students are directed to seek reference support and information about library services and resources via email, telephone, or online question form. All queries not directed to a specific Librarian or staff member are received by the library’s information desk, and are either answered by the staff person on the desk, or are re-directed to the appropriate individual or department. AU Library’s Reference Librarians provide reference services predominantly via telephone and email, and occasionally through Adobe Connect. AU Library does not currently offer live chat due to staffing constraints.

While these services are generally an efficient means of providing assistance to our students, they do not offer the same personal, synchronous service as does the reference desk. In addition, many of AU’s students are not aware of the library and the services that it offers. Many students’ first contact with AU Library is through their learning management system (LMS); although links to, and information about, the library are embedded in most of AU’s LMS courses, many students do not pursue this information if it is not perceived as directly relevant to their course or program of study. The author developed a virtual office hours (VOH) pilot project in the interest of raising awareness of library services, and of offering patrons a more personal, synchronous means of accessing library support.

Review of the Literature

Conducting a literature review on the topic of virtual or online office hours, the author found that, while there is a considerable amount of scholarship that has been published relative to librarian-led in-person office hours, and to faculty-led virtual office hours, there is very little published research dedicated to exploring the effectiveness of librarian-led virtual office hours. In the literature related to the topic, virtual or online office hours are typically discussed only cursorily, and usually as one component of an embedded librarian effort designed for a specific program or course (Burns, Howard, & Kimmel, 2016; Slavin, 2015; Sullo, Harrod, Butera, & Gomes, 2012; Summey & Kane, 2017). Handler, Lackey, and Vaughan’s (2009) article on the librarian-led in-person and virtual office hours program at the University of Chapel Hill’s Schools of Medicine, Pharmacy, and Public Health provides an in-depth analysis of the value of librarian-led virtual office hours. They found that online office hours received fewer visitors than did onsite office hours, with the medical school librarian seeing five attendees over a 17-session period. The public health librarian stopped offering online office hours after “several sessions of no shows” (p. 339), opting instead to offer only onsite office hours.

There is very little extant scholarship dedicated specifically to librarian-led virtual office hours, but the literature that focuses on faculty-led virtual office hours does provide insight into
how online office hours can positively affect student outcomes. Hajibayova (2017) notes that a sense of community “is among the most important… factors that may positively affect online teaching and learning environments” (p. 13), and that it is important to learning outcomes and overall educational satisfaction that students have a sense of “social presence” (p. 13) in their online courses, given that students often feel isolated from their peers in such faceless environments (Oguz, Chu, & Chow, 2015). Gibbons-Kunka (2017) also notes that the “power of communication via virtual office hours immediately generates a sense of community” (p. 102). The research cited above is concerned with the presence of the instructor in the online environment, rather than the librarian; however, the authors’ respective contentions that offering a synchronous online presence to students can help them establish a sense of community among their peers and an emotional connection to the institution itself can be extrapolated to demonstrate the potential value of offering synchronous online support to library patrons.

**Implementation of VOH**

The VOH pilot project at AU Library began with a series of discussions between the author and AU Library’s Director regarding the potential value of an online office hours program. The author presented the Director with a detailed proposal of the VOH pilot project, and brought the proposal to a general library staff meeting in order to solicit feedback from colleagues. The pilot project proposal was approved, with modifications made based upon colleagues’ feedback and that of the Director.

The author chose to offer VOH on Thursday afternoons, from two to four PM Mountain Time. Although analytics provided by a colleague demonstrated that traffic on AU Library’s website is somewhat higher on Monday and Tuesday afternoons, regularly-scheduled professional obligations on the part of the author excluded those dates and times from consideration. A Reference Librarian colleague volunteered to act as backup host for the program, on occasions when the author would be unable to do so.

Implementation of the VOH pilot project was relatively simple. The author first created a Microsoft Outlook OneDrive folder containing a procedures document, a spreadsheet in which to record statistics, a folder for recording chat transcripts, and PowerPoint slides to be used as promotional images. AU uses Microsoft Outlook 365 as their email service, so OneDrive was selected for this purpose as the simplest means of sharing documentation with the author’s VOH backup host.

The author then set up a new meeting room within Adobe Connect, with a unique URL that would be easy for patrons to remember. Adobe Connect was chosen as the VOH online space as it is supported by AU Information Technology Services (ITS), and all AU faculty and staff are supplied with Adobe Connect accounts. Adobe Connect also offers other advantages to the user; for instance, guests can enter meeting rooms without needing to have an Adobe Connect account. Adobe Connect offers desktop sharing – both session hosts and guests can share their desktops – which facilitates instruction. The VOH meeting was set up to enable the host to communicate with guests via microphone and text-based chat, although guests in the session would be able to communicate via chat only. This was recognized by the author as far from ideal, as one disadvantage of using Adobe Connect as the VOH meeting space is that it can
be difficult for users new to the software to set up an audio connection. Guests must also have a working microphone and speakers on hand in order to do so. The one-sided aspect of verbal communication within the VOH meeting space will be addressed further in the discussion section below.

Once the meeting room was in place, the author began a promotional campaign to raise awareness of this new service within the AU community. VOH were marketed through four main channels: AU’s Brand and Marketing Unit; email; the library homepage; and social media.

The author contacted the Brand and Marketing Unit to let them know about this new program, and to encourage the promotion of VOH through the communication channels available to them. These channels included AU’s Facebook page (the library maintains a separate page) and the “AU News Articles and Events” web page.

The author also sent emails to all faculty, staff, and course tutors, as well as to members of the Athabasca University Students’ Union (AUSU) and the Athabasca University Graduate Students’ Association (AUGSA). AU did not, at the time of the commencement of the VOH pilot project, provide students with university-affiliated email accounts, and so direct email marketing to students was not possible. It was hoped that faculty, tutors, and student associations would promote the service to students, as is also the case with the promotion of library webinars. These emails were sent both two weeks and one week prior to the commencement of the program, and reminder emails were sent to all of the aforementioned groups periodically throughout the course of the pilot.

The library’s Web Projects and Services team created a new “Virtual Office Hours” web page that included information about the VOH program, as well as a prominent, dynamic banner for the library homepage which features VOH among other library events and services.

The author also marketed the VOH pilot via social media. The author created several images using Microsoft PowerPoint that were used to promote the pilot on the library’s Facebook page. The author promoted VOH on Facebook both two weeks and one week prior to the launch of the pilot, and once weekly thereafter. The Communications and Member Services Coordinator for the AUSU, and the Social Media Marketing Coordinator for AU’s Brand and Marketing Unit, respectively, promoted the launch of VOH through their official Facebook pages and Twitter accounts. The Senior Manager, Course Development and Production for AU’s Faculty of Business, promoted VOH to students in that program through a link on the Faculty’s homepage.

Results

Over the course of the six-month, 34-week pilot project, a total of 32 sessions were offered. Two sessions were cancelled due to a combination of illness and vacation leave on the part of the author and her backup host. Fourteen students in total, over 10 sessions, attended VOH, 11 of whom asked a question or questions during the session. During the first VOH session, four students logged in but only one student asked any questions; the other attendees were content to listen in. Overall, a total of 13 questions were asked. The category of, and the
number of questions asked in each category, can be broken down thus: citing sources (2); library events and services (3); library website (1); materials access, e.g., locating journal articles (2); reference (2); writing help (1); not library related (2). On occasion, a student would log in to the session without a specific question in mind, in which case the session’s host would offer a basic introduction to the Library’s services and resources.

An analysis of the 11 chat transcripts revealed that students who attended VOH felt that their questions had been answered satisfactorily, and that, in general, they found the service useful. Replies to answered questions typically included comments such as “very informative”, and, “You have been really helpful”. Some attendees were more voluble in their feedback, with one student commenting that the service was “Brilliant!”; that it was “exactly what [she] needed”. Another student, with whom the host spent nearly an hour, noted that she “really appreciate[d] your time and support”. None of the attendees gave negative feedback, although one attendee left the session without leaving any comment on the service, either positive or negative.

Discussion

The announcement of VOH elicited a positive response from several members of AU’s faculty and staff, and the initial uptake of the pilot was encouraging. Ultimately, however, attendance numbers and the number of actual questions asked during the pilot indicate that VOH at AU Library could have been implemented more successfully.

The major constraints on AU Library’s VOH pilot were time and staffing. The selected date and time for offering VOH was not ideal, as it was based more upon the author’s and her backup host’s schedules than upon library website traffic analytics (an assessment of the analytics does show, however, that the difference between the AU Library homepage’s highest traffic days and lowest traffic days is marginal). Offering VOH on more than one day of the week, and at different times of the week, might increase visits as guests who are unable to attend VOH at the scheduled time would have a second option. Having other Librarians and library staff take on hosting duties would also allow for this flexibility in offering multiple VOH sessions per week.

It would also be valuable to explore the use of alternative online spaces that would more easily facilitate two-way communication via microphone. Several VOH attendees expressed the desire to speak to the host, but were unable to set up their microphone and speakers during the session.

It would almost certainly have been more effective to have offered VOH only within a specific program or course. The literature on the topic indicates that most virtual office hours programs are implemented in this manner, and generally as part of a broader suite of embedded librarian services. Nelson (2007) notes that it can take quite some time to raise awareness of the availability of office hours services within a single university program; reaching a globally-distributed online student body of over 40,000 presents a further set of challenges which could be obviated by offering the VOH service to a more limited audience. Marketing VOH to online students via the web only also poses a challenge. Handler et al. (2009) had the advantage of
being located on a physical university, with a satellite campus as the main beneficiary of VOH. This made it possible for the authors to promote VOH and other aspects of the embedded librarian program at orientations, faculty meetings, and after instruction sessions in the classroom (Handler et al., 2009). Librarians at AU Library do not have these means of promoting VOH, and so must rely on web-based promotional tactics only. In October 2017, AU ITS commenced the roll-out of university-affiliated email accounts to students, which will provide a means of contacting them directly should the VOH program be reinstated at some future date.

**Conclusion**

The low uptake of the VOH service at AU Library led the author to consider it an unsuccessful pilot project. Given the vastly higher volume of queries fielded by the Library’s information desk over the same six-month period, the 13 questions answered by the VOH hosts over the duration of the pilot cannot be said to have made a markedly positive difference to the library’s level of service. Qualitatively speaking, the patrons with whom the VOH hosts interacted apparently came away feeling positively about the library and VOH, which goes some way towards the goal of fostering a stronger connection between AU students and their library. Despite this, and despite the enthusiasm with which the program was initially received, it ultimately became too time-consuming for the author and her co-host to continue. The author decided to end the VOH program after the six-month trial period came to an end. The author would consider offering VOH again in future, but within a specific course or program, and with a more effective marketing strategy in place.


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Going the Distance for Grads: What Online Graduate Students Want from the Library

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Abstract
With new program additions and changes to existing graduate programs, librarians at the University of Nevada, Las Vegas were interested in investigating if students taking online courses were successful in accessing the library services and instruction. A survey was created that included all types of graduate students (fully online to fully in-person) to identify how they accessed the library and how confident they were in finding resources. The results of this survey have provided the researchers insight regarding successful strategies and where we need to improve; where distance learners are struggling more than on-campus students; and how we need to create varied approaches to disseminate library information and instruction. The study has also opened up communication and stronger collaborations with teaching faculty and instructional designers to better integrate the libraries into the curriculum. To help make findings more generalizable, the researchers aligned them with the Association of College & Research Libraries (ACRL) Standards for Distance Learning Library Services.

Introduction
The University of Nevada, Las Vegas (UNLV) is a large urban university with a goal to achieve top tier status by 2025. As part of this ambitious plan, a goal is in place for creating strategic increases in master’s-level enrollment both onsite and online. According to the UNLV Office of Decision Support (2017), the preliminary number of Master’s level students in fall 2017 is 2,007, with 335 Master’s students in the College of Urban Affairs, which includes disciplines such as journalism, public policy, and social work. The Urban Affairs library liaison recognized a transition in degree programs in her area and was curious if new approaches needed to be taken to connect these new programs and students to the library. Graduate programs on this campus include those that are fully online to those that are fully in-person with many variations of hybrid programs.

The information obtained in the survey will be used to make library resources and services more useful for UNLV students in the future. By investigating the perceived usefulness of library services and resources for on-site and off-site graduate students and their confidence in researching and obtaining information, the researchers were hoping to address any possible problems and improve outreach and library services in general to this diverse group of library users. Additionally, by conducting this needs assessment, the library liaison will be able to share
results with teaching faculty members and will be able to propose possible faculty-librarian collaboration efforts that will provide better library experiences for the students. Moreover, by sharing the results of this survey with colleagues in the Educational Initiatives Department, it will also provide collaboration opportunities which may include the creation of digital learning objects (DLOs), tutorials, lesson plans, and other information literacy activities for various graduate programs within the college.

Literature Review

Since the beginning of the 21st century, much of the emphasis in professional literature has centered on faculty-librarian partnerships and campus collaborations for graduate education, the popularity of distance education (Blummer, 2009), and the technologies used in distance education. Additionally, several library researchers have surveyed graduate distance learners in order to assess what is working well with the diverse group and on what can be improved in their library experience.

Faculty-librarian Partnerships

Faculty-librarian partnerships to better instruct and prepare graduate students in conducting academic research and for their future careers have been discussed by several authors in recent years. Many of these faculty-librarian partnerships for information literacy instruction stemmed from librarian efforts to address the needs of nontraditional graduate students whose numbers increased since 2000 (Blummer, 2009). In particular, Jacobs, Rosenfeld, and Haber (2003) outlined the collaborative efforts between nursing faculty and librarians at New York University's nursing master's program to integrate information literacy components into the curriculum of five core courses. Cooney and Hiris (2003) attributed their collaboration with university instructors to a desire to improve the research skills of nontraditional graduate students within their university’s business department that outlined specific goals and objectives, assignments, and learning outcomes. Lampert (2005) traced the collaboration between the College of Education faculty and librarians at the California State University Northridge for information literacy instruction for graduate students according to basic, research, and professional competencies. A comparison of students' pre-instruction with post-instruction self-assessment scores revealed gains in their “comfort and confidence” (p. 5) as well as in learner's “resources and information competence skills” (p. 18). Bellard (2005) utilized a pretest to measure information literacy perceptions and skills among graduate students at Adelphi University's School of Social Work.

Collaborations with Non-Academic Campus Units

Along with faculty-librarian partnerships, some academic libraries have collaborated with non-academic units on campus to target students and extend the library’s outreach efforts, including student resource centers, international student services, centers for teaching and learning, and writing centers (Covert-Vail & Collard, 2012). Lightman and Reingold (2005) reported that Northwestern University's graduate training day represented collaboration among campus information technology professionals, librarians, administrators, and humanities faculty. These individuals joined forces to devise and implement a full day centered on introducing
incoming humanities doctoral students to electronic resources in their field. Song (2005) described the collaboration between the University of Illinois at Urbana-Champaign's Business Career Services Office and the University's Business and Economics Library to offer a career services workshop for graduate business students. The ultimate goal of the program centered on demonstrating the usefulness of the library in providing information to support activities outside of coursework. The program offered students a career workshop followed by a personalized consultation service to facilitate their understanding of how to conduct company and industry research for job interviews.

**Distance Education**

Distance education is not a new phenomenon, and it is quickly becoming a standard method for delivering educational content at higher education institutions. As universities expand the availability of online courses, and even entire academic programs, support for the courses and programs must be taken into consideration. Academic libraries have long supported the academic programs on university campuses, and they have continued this support through the expansion of resources and services for distance users. In addition to supporting distance users in academic libraries, many services and resources have also been implemented to provide support to instructors who teach in distance education classes and programs (Nielsen, 2014). The literature addressing the use and implementation of distance education resources, technologies, and services in academic libraries for the graduate student population is abundant. For example, librarians at Oregon State University (OSU) Libraries used the discussion board features of Blackboard courseware to create an interactive experience for graduate students at a distance who could not attend the on-campus “Literature Review Workshops” (Rempel & McMillen, 2008). Kumar and Ochoa (2012) highlighted the value of sustained involvement of librarians at the program level to provide information literacy in an online environment. Edwards and Black (2012) described how an embedded librarian created and integrated content in an online graduate course in educational technology. The embedded librarian utilized tools such as LibGuides, videos, discussion forums, and others to create and distribute library content related to course topics. Following a needs assessment of distance instructors, Kvenild and Bowles-Terry (2011) stated that instruction techniques such as demonstrations, live chat, polling, screensharing, blogging, video blogging (vlogging) and other interactive practices were the most popular. Other ideas that could be incorporated might include audio podcasts or video vodcasts for asynchronous classes, a menu of courses for library users to choose from like YouTube, Vevo, or Hulu, a librarian embedded into full credit-bearing online courses to aid students with classwork, and library orientation via webinars.

**Library Surveys to Distance Graduate Students**

Surveying graduate students in distance programs has been a constant theme in the library literature to discover their knowledge and opinions on library services and resources, their possible frustrations, and their comfort levels with the research process. For example, Hensley and Miller (2010) reported the results of a 2009 University of Illinois at Urbana-Champaign survey that explored distance learners’ perceptions about and use of library services and provided insights into distance learners’ communication preferences, and their particular research needs. The aim of the survey conducted by Pival, Lock, and Hunter (2008) was to
assess the skill level, confidence, and overall research readiness of selected groups of graduate 
students (on and off campus) within two divisions housed in the Faculty of Education at the 
University of Calgary. Clark (2014) conducted a survey with graduate students in the School of 
Music’s online Master of Music in Music Education program at Kent State University. Eighty-
two respondents answered questions about their awareness and use of library services, non-
library resources, and desired means of obtaining help, as well as their opinions about the most 
important services University Libraries offer. The results afforded insights into the needs, 
preferences, and information-seeking behaviors of students in an online program, and have 
informed the library’s approach in revising its supporting materials for the distance education 
program. Mitchell (2016) provided results from usability testing of graduate distance learners. 
The impetus for the study discussed in Mitchell’s article was to gain insights about SUNY 
Oswego’s distance learners and their library use. Following the tests, Mitchell noted that 
learning about these students has proven to be beneficial for a number of reasons, including 
creating a dialogue about distance learner needs, sparking conversations about the information 
literacy needs of these students, and reinforcing important lessons about how students use the 
library website.

Methodology

Knowing that surveys have been successfully used to gather information from distance 
education graduate students, it seemed like a great fit to use one to gather data from graduate 
students in the Greenspun College of Urban Affairs. Individual surveys were created in 
Qualtrics (a survey creation tool available at www.qualtrics.com) for each academic department 
(Criminal Justice, Journalism, Public Policy, Communication Studies, Urban Leadership, Social 
Work, and Executive Crisis and Emergency Management). Surveys were given to all types of 
students, from those taking classes online only to those taking classes in-person only.

Surveys were distributed in three ways. If cohorts came to a library session, they were 
asked to complete the survey and a link was included on the LibGuide that was created for their 
class. If the department had a listserv just for graduate students, that channel was used to 
distribute the survey. Some surveys were also sent directly to individual e-mail addresses, if 
those were available. Once all surveys were returned, the survey results were combined into a 
master survey using Qualtrics. Individual surveys were also kept, so they could be analyzed at a 
later date to determine if there are any differences in preferences based on academic department.

The survey consisted of 19 questions. Most were single or multiple choice answer, but 
two were open-ended. Ninety students clicked on the link to begin taking the survey. However, 
only 74 students answered the first question agreeing to informed consent, and one person opted 
out of the survey at that time. This left 73 usable responses, although not all students answered 
all questions.

Results

Respondents were asked in what formats they took classes. Multiple answers were 
allowed, since students on our campus tend to take classes in multiple ways depending on their 
needs or how a particular class is offered in a given semester. An equal number of students,
23.53%, reported taking classes solely online or hybrid classes (classes that are a combination of in class and online meetings). Almost half (49.02%) of respondents reported taking classes on-site at the UNLV campus. Only four (3.92%) respondents reported taking classes off-campus (such as classes offered at Nellis Air Force Base), which is most likely due to their low availability.

Overwhelmingly, students who responded to our survey live within Las Vegas or Clark County. Of all respondents, 88.06% came from this region, including 86.96% of online students. Students taking hybrid courses were the most likely to live out of state with 27.27% of students taking this type of class living out of state compared to only 8.7% of online students and 2.08% of on-site students living out of state. Off-site students all lived in Las Vegas/Clark County and only one student in any category reported living in Nevada, but outside of Clark County. Most of our respondents were women, comprising 73.13% of our overall survey respondents. This held true across all categories of class types. Most students were currently employed, with 50.75% of the total respondents working full-time and 43.28% working part-time. Students spanned from 18-64 years of age. The majority of respondents fell into the 25-34-year range (49.25% overall). This age group comprised 65.22% of online only students. The next most common age range was 18-24 years (19.4%). However, there were fewer online only students in this age range (4.35%) and more hybrid (18.18%) and onsite (20.83%). The age range of 35-44 years was only slightly smaller (17.91% overall). Online students were more likely to fall into this range (26.09%) versus onsite students (14.58%).

When asked, “Where do you usually do your research?”, students were most likely to answer, “from home.” In fact, across all categories of students (online, hybrid, off-site, and on-site), 82.86% of students reported researching from home. For online students, the second most common place to do research was at work, with 41.67% of respondents working from there. Hybrid students and on-site student’s second choice of place to research was at UNLV Libraries (37.5% of hybrid students and 40% of onsite students chose this answer). Off-site students were equally split with 25% researching at UNLV Libraries, 25% at another campus building, 25% at a library other than UNLV, and 25% from work. Surprisingly students taking classes online were still coming to campus, with 33.33% doing their research at UNLV Libraries and 25% researching at another building on the UNLV campus.

A similar question was asked about where students were accessing their courses. As with the previous question most students were working from home (86.76% of the total respondents). The second most common place for online-only and hybrid students was tied between the UNLV Libraries and their workplace (37.5% for online-only, 33% for hybrid courses). For students taking on-site courses, their second most common place to access their course was at another building on the UNLV campus (presumably the building where their class is held).

Students were asked if they encountered problems when accessing the library website and materials. The majority of the respondents (78.57%) said they encountered problems less than 5% of the time and another 18.57% stated they had problems only 6-25% of the time. One respondent (1.43%) had issues 26-50% and one unfortunate student noted having issues 76-100% of the time.
Respondents were asked where the first place they started when doing research. The majority began with Google Scholar (28.57% of total respondents). This was followed equally by Google or another search engine (22.86%) and Library QuickSearch (the UNLV Libraries discovery tool) (22.86%). However, starting places for research varied greatly by what type of class the person was taking. For students taking online only classes, Google (29.17%) and Google Scholar (29.17%) were equally split as the top two places to begin research, followed by the Library QuickSearch (25%). The last place choices for online only students were split between the Internet (other than Google) (8.33%) or using library databases (8.33%). For students taking hybrid classes the majority began with Google (41.67%), followed by Library QuickSearch (25%), Google Scholar (16.67%), and on the Internet (other than Google) (8.33%). The last categories that this group used were split between Library Databases (4.17%) and Other—“depends—if I know it’s for school and very academic I start at library DBs” (4.17%). For onsite students, the majority (34%) began with Google Scholar, followed by Library QuickSearch (26%), then Library Databases (22%), and Google (12%). Off-site students were equally split with where they began 25% started with Google, 25% started with Google Scholar, 25% began with Library databases, and the remaining quarter began with Library QuickSearch (see Figure 1).

![Figure 1. The first place students normally start when doing research.](image)

Students were asked how confident they were with their ability to do various tasks they would need to do while they were researching. Overall, they were fairly confident about their research skills. For instance, 28.99% of overall respondents were extremely confident developing a research strategy and 59.42% were somewhat confident. No hybrid or off-site students felt uncomfortable developing a research strategy, while 8.7% of online students felt somewhat or extremely uncomfortable developing a research strategy and 8% of onsite students
felt somewhat or extremely uncomfortable. Of the overall respondents, 92.75% indicated they felt extremely confident or somewhat confident locating research materials (books, journal articles, etc.). The only group that felt somewhat unconfident, was on-site students (4%).

When asked about their confidence with effectively searching library databases (such as Academic Search Complete, QuickSearch) 85.51% of the total respondents felt either extremely or somewhat confident. Hybrid users were somewhat unconfident 12.5% of the time and onsite users were 2% of the time. No other group felt unconfident. Results were similar when asked: How confident are you with your ability to search the library catalog to find books, 82.6% of overall respondents felt either extremely confident or somewhat confident. On-site students were the least confident at 8%, with students taking online only classes being somewhat unconfident 4.35% of the time and 4.17% of hybrid students being somewhat unconfident. Students were slightly less confident about finding federal and/state government websites. Of overall respondents, 75% felt extremely or somewhat confident finding these types of websites, while 11.76% felt neither confident nor unconfident finding government websites, but 13.23% felt either extremely or somewhat unconfident finding these types of sources.

When asked how confident they were with obtaining the full-text of articles, most students were either extremely confident or somewhat confident (83.83%). However, this was a category with some differences between user types. For example, students who took classes online or in-person only were extremely confident about their ability to find full-text (60.87% online, 56% on-site), more often than they were somewhat confident (34.78% online, 38% on-site). The reverse was true for hybrid class and off-site class takers. Only 29.17% of hybrid class takers were extremely confident, while 54.17% were only somewhat confident. For off-site class takers, 25% were extremely confident, while a full 75% were only somewhat confident. When asked how confident they were with their ability to format citations and create a bibliography, 83.83% of total respondents felt either extremely confident or somewhat confident. However, online students were more likely to say that they were extremely confident (52%) versus hybrid students (33.33%), on-site students (40.82%), or off-site students (25%). Only 4.35% of online students only felt somewhat unconfident with this task, versus 16.67% of hybrid students who felt somewhat unconfident. On-site students were the only ones who felt extremely unconfident with this task (2.4%) and 6.12% of them also felt somewhat unconfident. No off-site students felt unconfident formatting citations and creating bibliographies.

Students were also asked how confident they were with their ability to obtain research help when they needed it. Again, most students felt confident in this task with 82.61% of the total respondents felt either extremely or somewhat confident with getting research help. Of total respondents, 14.49% felt neither confident nor unconfident with this task. The only students who felt uncomfortable with this task fell into the online only and on-site only classes. With online only students, 4.35% felt extremely unconfident with this task, while 2% of on-site students felt somewhat unconfident and 2% felt extremely unconfident getting research help when needed.

To gain more information about how students preferred to get research help, they were asked a series of questions about how they would be interested in receiving help from the
When looking at all survey respondents they were most likely to want help in the following ways: via e-mail (86.96%), through a consultation with a subject librarian (82.61%), in-person at the reference desk (81.16%), via online chat (80.60%), during a library workshop or instruction session (57.97%), by phone (54.41%), or by text (51.52%). Preferred methods of obtaining help varied by group. The top three ways online students were more likely to say they would use help were via chat (95.65%), through a consultation with a subject librarian (91.30%), and in-person at the reference desk (91.30%). Hybrid students were more likely to say they would want help via e-mail (95.65%), in person at the reference desk (83.33%), and online via chat (82.61%). Students taking on-site classes were most likely to want help via a consultation with a subject librarian (88%), via e-mail (84%), and in-person at the research desk (82%). Off-site students were more likely to want help via chat and through a consultation with a subject specific librarian (100% for both categories) or via e-mail, by phone, or in-person at the reference desk (75%) for all categories. It was interesting that all categories were willing to obtain help physically at the library, despite the fact their class may not meet at physically on campus at all (see Figure 2).

**Figure 2.** How students would be interested in receiving help from the library.

Respondents were asked how helpful would they find it to have a librarian provide instructional materials on conducting research specific to their course. Overall, 54.29% of respondents would be very interested in having instructional materials about conducting research specific to their course and 35.71% were interested in the service. Only 10% of respondents
were either not very interested or not interested in all. Responses were quite similar across the different class types.

To follow up with this question, we asked what ways would be the most valuable for students to obtain library information specific to their master’s degree. For overall respondents, 74.29% were interested in getting their information via the library website. Second most chosen was using a course-specific web page/course guide from the library website (54.29%). A majority of users (51.43%) preferred to obtain library information via WebCampus (our course management system), while 50% wanted to get that information via e-mail. Via in-person consultation with a librarian was the next most chosen option, with 45.71% of respondents and 37.14% of respondents wanted to get library information using a course-specific web page/course guide found on their academic department’s website. YouTube videos were a way 15.71% or respondents wanted to get library information, while another 10% of respondents were interested in getting library information via webinars. Only 7.14% of students wanted to get library information via social media and no respondents selected “other.” Getting library information from the website was the number one choice for students taking all types of classes. However, top choices varied after that. For students taking online classes, the second most popular choice was to get library information via e-mail (66.67%), followed by getting library information using a course-specific web page/course guide on the Libraries website (58.33%). Hybrid users had the same percentages for their top three choices: wanting library information via the library website, getting library information using course-specific web pages/course guides on the library’s website, and getting library information via WebCampus (70.83%). Students taking classes on-site rated both via in-person consultation with a librarian and via e-mail highly (52.00%). For off-site students, they had the same percentages for their top three choices for getting library information: via the library website, via in-person consultations with a librarian, and via e-mail (75%). It was interesting to note students taking on or off-site classes were more likely to desire an in person consultation than those taking either online only or hybrid classes (see Figure 3).
Respondents were asked to rate various library services based on their satisfaction with their experiences. It turned out that most respondents had not used many of our services. Consultations by appointment and assistances by library staff at the Research & Information Desk were the only two services where more than half of respondents had used. In both cases, students tended to be more satisfied with their service. For consultations by a librarian, students were either very satisfied or satisfied 49.27% and only 2.9% of students were unsatisfied or very unsatisfied with their service. With assistance at the Research & Information Desk 57.35% were satisfied or very satisfied with their service, while 4.41% were unsatisfied or very unsatisfied. All students who used e-mail were either very satisfied or satisfied with the service (33.82%), while 25% of those who used assistance via chat were satisfied or very satisfied and 1.47% were very unsatisfied. For those that received assistance via the phone, 23.89% were satisfied or very satisfied, while 1.49% were very unsatisfied. It was reassuring to see that when people did use services, they were usually satisfied with them; however, a high percentage of people did not use the services at all, which is concerning. This could be because a large portion of our respondents may have just begun their degree program, but it could also signal that students are not becoming aware of what services are available to them. Low use held true regardless of what type of classes the student was taking, so it is not just a problem for students who do not come on campus.
Students were asked a question to gauge if they were aware of their ability to use Interlibrary Loan to request books and journal articles, even if they were not local to Las Vegas. Overall, 69.12% of respondents had not used this service. More people in hybrid classes and off-site classes hadn’t used it (78.26% and 75%) than those in online or on-site classes (56.52% and 64%). When queried why they hadn’t used the service, just under half stated it was because they did not know the service was available (44.44%). Students also didn’t use the service because they didn’t have time (15.56%), because it was faster to use a local library (8.89%), or because it was too complicated to request items (4.44%). Additionally, 26.67% of students responded, “other.” with most writing in that they had not used the service.

The final question was open-ended that asked students for additional comments or suggestions regarding the services and support provided by UNLV Libraries regarding their degree programs. A few people complimented the library saying things like, “I love our library it has been a great asset to my education career” and “Very pleased and appreciate all efforts to make researching easier.” Others recommended changes to services, such as “Please bring LINK+ back,” (our former book borrowing service) and “The library should be open 24 hours a day during the week.” Others recommended ways to increase research assistance such as, “Tutorial on tips for more effective database searching would be helpful,” or “It would be helpful to have guidance one [sic] which databases are best to use when searching for various times of sources.” One student said, “The services are not well known and I believe should be a part of the curriculum for general education.” These comments echoed the rest of the survey results. Overall students were mostly satisfied with the library, but many were unaware of services and needed some guidance to assist with their research.

**Discussion**

As UNLV Libraries’ approach to serving distance learners continues to evolve, surveying the College of Urban Affairs graduate students has allowed us to explore the students’ awareness of library services and how they obtain assistance, along with their confidence levels with the research process. The data collected in this survey suggests that a more expansive survey, perhaps with the other graduate programs, should be considered in the near future. By expanding this survey, it would allow for collaborative opportunities among library liaisons, which could allow colleagues to brainstorm ways to improve outreach and instruction efforts with distance learners, as well as graduate students in general.

UNLV is a unique institution. A diverse university, many of our students are non-traditional and we are aware that some things our students do may not be representative of students at other institutions. Therefore, we decided to look at how our survey results fit into the recommendations of the ACRL Standards for Distance Learning Library Services (2008). The Library Requirements section of the Standards was of particular interest, because it recommends specific library services that should be in place for all distance learners.

**Library Requirements**
**Availability for all users.** The library has primary responsibility for making its resources, services, and personnel available to its users regardless of their physical location. With this in mind, after analyzing our survey results, it appears that the library needs to do a more comprehensive job in promoting its services and making the distance learners aware of what is offered to them. For example, while hybrid students regularly have the opportunity to meet with the library liaison during regularly scheduled workshops or instruction classes, online students do not have that advantage. Interestingly, many of our off-site and online only students still desired to have in-person interaction with their subject librarian. It is important to let them know that they do have access to schedule consultations or attend workshops, even if their classes are not being held on campus. Additionally, we need to investigate more innovative ways to reach the students who will rarely (if ever) be on campus and perhaps offer more formalized online workshops, instead of just relying on students connecting with research help via chat and e-mail.

**Academic excellence.** Access to appropriate library services and resources is essential for the attainment of superior academic skills in post-secondary education, regardless of where students, faculty, staff, and programs are located. Members of the distance learning community, including those with disabilities, must therefore be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to, those provided for students and faculty in physical campus settings. In order to achieve academic excellence in this area, librarians will need to concentrate on developing faculty-librarian and/or other campus-librarian partnerships to better serve the distance learning community. In addition to these partnerships, academic excellence can be achieved by exploring innovative ways and “going the extra mile” to reach, assist, and educate the distance learners through targeted communication and through various technologies. Our survey helped to bridge the faculty-librarian partnership, by opening a dialogue with departmental faculty and demonstrating our interest in supporting their disciplines. It also opened up areas to explore for future partnerships and strengthened our knowledge that we must rely on faculty to help spread the word about the services and support the library offers.

**Direct human access.** Library personnel must be made directly available to the distance learning community through instruction, interaction, and intervention in the provision of library services and in facilitating successful use of library resources, particularly electronic resources requiring computer and digital literacy, and information literacy skills. While it is not always possible to meet with distance learners in person, connections can be made through e-mail, chat/text, or phone. In fact, e-mail was one of the most desired ways that our survey respondents wanted to connect with the library. Additionally, online through instruction and information literacy activities, library staff can make themselves available to assist distance learners in obtaining the assistance or information that they need. It was positive to see through the survey that most respondents were confident that they could obtain research assistance if needed.

**Instruction.** The library must provide information and digital literacy instruction programs to the distance learning community in accordance with the ACRL standards and other ACRL documents relating to information literacy. With course guides, tutorials, DLOs, and other online tools, distance learners will have the opportunity to explore resources, develop search strategies, successfully find what they need, and gain information literacy skills.
Although not yet accomplished at UNLV, colleagues are currently exploring more innovative tools and techniques, including courseware discussion boards, webinars, live chat, and demonstrations to improve information literacy efforts with distance learners.

**Needs and outcomes assessments.** The distance learning community must always be represented in the planning and assessment activities of the library. These include, but are not limited to surveys, e.g., LibQual; focus groups; discussion forums and other formal and informal feedback mechanisms; usability studies; collection reviews; and instructional planning. Although less than 75 students completed the College of Urban Affairs survey, we obtained quite a bit of new information about our graduate student population and we have discovered both what we are doing well with or graduate students, as well as what needs addressed through instruction, promotion and publicity, and general awareness of services. As the distance learning programs evolve, the library will definitely need to develop assessments to see whether library services have effectively met distance learner needs over time.

**Strategic planning.** The library must maintain a current strategic plan and vision for serving distance learners, which ideally should be integrated into the overall library strategic plan. Strategic planning should be an iterative process that includes evaluation, updating, and refinement. As distance learning programs change or expand on campuses, the library’s strategic plan will need to adapt on a regular basis. This survey and other needs and outcomes assessments are helpful to provide input for strategic planning. Knowing where our users felt confident and where they feel more resources are needed, helps us to plan for the future.

**Conclusion**

The research indicates that the UNLV College of Urban Affairs graduate students, whether distance learners or on-campus, are generally satisfied with what UNLV Libraries provides for them with resources, instruction, and general assistance. However, this survey has indicated that many students are not aware of services such library consultation appointments, receiving general research assistance, or using Interlibrary Loan to obtain materials that the library does not own. The findings of the survey indicate that the library needs to take steps to build awareness of the wide range of services available to graduate students, especially to those learning at a distance. This is of particular importance because the library offers research assistance in many ways that were most desired from distance learners, but they were unaware that these services existed. Before making any sweeping changes, survey results will be further analyzed and shared with colleagues. In the future, we hope other liaisons will conduct a similar needs assessment with their distance learning graduate students so that we have a larger group of survey results to ascertain what UNLV graduate students need from the library. This way, the library can continue to meet the needs of a diverse group on a larger scale.
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400 Years Old and Still Cutting Edge: Applying Ignatian Pedagogy to an Online Library Orientation

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Abstract

The Ignatian Pedagogical Paradigm is centuries old, but its focus on student-centered learning is cutting edge. When the Gonzaga University library was asked to collaborate with an online graduate studies department, the Ignatian Pedagogical Paradigm provided the guiding framework. The first principle of Ignatian pedagogy is Context, which involves understanding and meeting students where they are. Building on this foundation, the other principles of Experience, Reflection, Action, and Evaluation keep the student at the center of the learning process. Reflection is the fulcrum of the paradigm, prompting students to think consciously about what they have learned and how it impacts them, thereby taking ownership of the learned material. Applying these principles to a self-paced Online Library Orientation resulted in self-reported student confidence with library resources, and the integration of better sources into their work.

A central problem confronting all teachers is some variation on the theme of, “How do I make this stick?” That simple phrase, often uttered in frustration, can be unpacked to read, “What I have to impart is valuable and important, and I wish it to be recognized as important by the student, to be taken in by them, and to have an effect on them.” In other words, what invested educators really seek is the transformation of the student. It is not enough for the student to memorize and regurgitate facts; they must also be moved by their newfound knowledge to apply it in their lives and work. This application looks different in every discipline; in engineering the application is immediate and practical, while in history it is more often broadly conceptual, but no less transformative. For librarians the application is both practical — how do students find the information they need? — and conceptual — what is information, how is it created, how is it valued, how is it used? For librarians, the concern for “making it stick” is heightened by comparatively little time spent with the students in the classroom. How does the librarian impart all that is needed to transform a student in a typical one-shot session? And what about the students the librarian never gets to see, the ones whose only contact with the library is through a web site and electronic resources?

These questions were at the forefront when work began on a new Online Library Orientation (OLO) for the master’s students in the Department of Educational Leadership and Administration (DELA) at Gonzaga University. DELA students are typically professionals living
and working over the border in Canada, and their instruction is accomplished almost entirely online. Online learning can be disorienting, as interaction with instructors and learning materials is mediated through technology. An effective OLO ought not to be merely another task to be checked off or barrier to be hurdled on the road to graduation, but rather a resource which students choose to use. This requires the OLO be friendly, helpful, and non-intimidating. Therefore, the two main criteria were ease of use and conceptual clarity.

In a brainstorming session, the contact in the DELA department added another element: reflection (E. Radmer, personal communication, July 17, 2015). Intriguingly, Radmer spoke of reflection as both providing a way to verify students’ completion of the guide without subjecting them to a long assignment or boring test, and also as something valuable to the students themselves as part of their learning process. When this compelling idea was mentioned to a librarian colleague she replied, “Ah, Jesuit pedagogy!” (T. Kappus, personal communication, July 21, 2015). Thus began the exploration of a hundreds-year-old guiding framework that proved to be exactly what was needed to accomplish the goal of a helpful OLO.

**Ignatian Pedagogy**

It may seem strange to look for inspiration for an online library orientation in a 400-plus year-old religious educational philosophy, but the core concepts of Ignatian pedagogy are as relevant today as in the 16th century. In fact, it has taken modern pedagogy centuries to catch up to Ignatius’ primary insight: education is about the student.

Ignatian, or Jesuit, pedagogy begins with St. Ignatius of Loyola, the founder of the Society of Jesus. Ignatius founded the Jesuits in 1540 as a missionary order in the Roman Catholic Church; within a decade of that foundation the first Jesuit school was opened in Messina, Italy, and the mission of the Society quickly became largely about education, in particular the education of laymen from all classes (O’Malley, 2014). These two foci, education and missionary work, are not contradictory. The Jesuit concern for education springs from the same well as its foundational concern for missionary work: a desire for the transformation of the individual. Indeed, the backbone of Ignatian Pedagogy has its origins in the famous Spiritual Exercises, composed by Ignatius during his spiritual awakening in the 1520s, when he renounced his life as a courtier and soldier, with its dreams of worldly heroism, for one of singular focus on God and a different kind of heroism (Wright, 2004). Jesuit pedagogy was codified in the 1599 *Ratio Studiorum* (“Plan of Study”), which unified Jesuit teaching across its by-then international network of schools and universities, and still informs Jesuit education today.

The Ignatian Pedagogical Paradigm (IPP) has been broken down into five elements: context, experience, reflection, action, and evaluation (Jesuit Institute, 2014). Each of these can be fruitfully applied to an online library orientation.

**Context**

The first element of Ignatian pedagogy can be summed up by the common phrase, “meet the students where they are.” Teaching is a two-way interaction, and effective teaching demands an understanding of the students and what they bring to the table. This includes prior knowledge,
of course: what the students know, what they don’t know, and what they think they know which might need to be “unlearned.” But it goes deeper. A key value of Jesuit spirituality and education is *cura personalis*, “care for the person,” often translated as “care for the whole person” (Kappus & Jenks, 2010). Context should include not only where students are in terms of knowledge, but their lives as a whole, as much as can be understood.

As mentioned previously, DELA students are often professional educators in Canada, returning to school to get a master’s degree in educational leadership and administration. Their program is expected to be rigorous, as is any good master’s program. That rigor is compounded by the students’ day jobs and fully-developed lives outside of school, often with families and their attendant obligations, as well as by the inherent difficulty of online schooling, with little face-to-face interaction with instructors or peers. It was obvious that the library needed to be positioned as a *help* to the students, rather than yet another hoop to jump through.

Previous integration of the library and the DELA program had taken the form of a self-paced non-credit course embedded into the students’ learning management system. A benefit was the in-depth instruction this course offered, culminating in an annotated bibliography assignment graded by librarians. The downsides included the need to charge students a small but still onerous fee to enroll in the course (meaning students were essentially being charged for library instruction), the difficulty of being sure all students took the course in a timely way, and the fact that it created not-insignificant extra work for students (not to mention the time the librarians had to spend grading!). The new approach, more suited to the context of the students, would rely on a single, self-paced library online orientation, with a reflection component serving as a checkbox of completion, allowing students to receive full credit from their cohort advisor.

**Experience**

The second element of Jesuit pedagogy, experience, refers to the students’ experience of learning itself; what is done in the classroom (or online) that students will experience in order to learn. Going back to *cura personalis*, the IPP understands that learning is affective: it is not merely thoughts or facts in a vacuum, but it impacts and interacts with the whole person of the student, which includes feelings. The hearts as well as the head is part of the learning experience (Jesuit Institute, 2014). That means that effective teaching considers not just the facts that need to be imparted, but also how they will be received. This was a significant consideration in the final design of the Online Library Orientation (OLO).

To make the experience of learning as smooth as possible, keeping in mind the context of the students, a high priority was placed on removing barriers of intimidation or confusion that often accompany library resources. Friendliness and ease of use were to be the order of the day. The finished OLO tries to avoid overly technical language, and takes time to define terms. It assumes an informal tone, often addressing students directly in asides. For instance, on the first, Welcome page, students read, “This guide is broken down into bite-sized chunks (okay, maybe a little bigger than a bite), which you can access by using these tabs at the top of the page” (Tardiff, 2017, para. 3).

The OLO includes acknowledgement that library resources can be confusing and
intimidating; for instance, a “Glossary of Scary Library Terms” is provided. Sometimes the informal tone is extended by the use of images, such as illustrating the triumphant feeling which comes when receiving an article ordered via the ILLiad interlibrary loan system, with a cropped image of Franz Matsch’s 1982 painting The Triumph of Achilles, photoshopped to show Achilles holding aloft a book instead of Hector’s helmet, and a cartoon bubble caption reading “I have the article!”

The online guide was built in LibGuides, a library-centric content management system from SpringShare, which the Gonzaga library already uses for the bulk of its website. LibGuides provided a clean look likely to be familiar to students from similarity to regular web sites, as opposed to the often opaque organization of a course in a learning management system. Individual guides are broken into pages, which are listed in tabs across the top of the guide. In each page are arranged multiple “boxes” where a variety of content can be placed, from rich text to html embeds. Boxes can also be tabbed, allowing students to click through more content in a single spot, and allowing in-depth concepts to be layered behind more basic concepts so as not to overwhelm the student with too much information at once. The ability to use html embeds allows the integration of YouTube videos, Google Slides, and Google Forms directly into the guide.

The finished OLO has seven pages: one welcome page, a page for each of five library competencies (see Table 1), and a final page for reflection. Students are expected to start at the welcome page and work their way through the OLO in a self-paced, linear fashion, as the concepts often build upon each other. But the OLO’s structure also allows students to come back to it as a non-linear quick-reference, easily finding specific information again. The underlying organizational principal is hierarchical and intuitive, with page tabs representing the major concepts, and information arranged on each page in discrete boxes that move from basic at the top of the page to more advanced deeper in (see Figure 1). Content is a mixture of rich text (often illustrated with screenshots and other pictures), short videos, and slideshows (often pulled from other existing guides and tutorials), which are navigable directly in the guide, depending on what seems the best way to get the information across. To use a complex resource as an example, students find information about the link resolver on the “Databases” page, in the “Database Basics” box, and in the “Periodicals@Foley” tab, in the form of a colorful three-page slideshow. The information is nested but also quickly revealed and placed in a spot which makes sense. The hope is that this is a less intimidating and easier to use system than, for instance, a long, scrolling web page, or a booklet-style manual. To make it even easier to use as a reference, most discreet sections of the OLO, whether rich text or a slideshow, have an attached PDF that students can download, formatted specifically for printing.

Most pages end with an optional exercise and self-quiz, easily recognized by stylized title icons. “Get Your Hands Dirty” provides short exercises students can perform to interact with the library resources they’ve been reading about, and “Quiz Yourself,” is a short, often goofy set of multiple-choice questions. (For example, a choice for the question “What is a boolean search?” is “A galaxy wide quest to find the fabled Boolean, the last surviving native of the magical planet Bool.” A choice for the question “What does ‘Check Gonzaga Libraries for full text options’ mean?” is “Threaten the king of Gonzaga Libraries with your rook, allowing you to unlock the secret of full text” (Tardiff, 2017).) The quizzes, created in Google Forms, do not record any data, but merely tell students if they got an answer right or wrong. If wrong, there might be a
Table 1

*Online Library Orientation Pages and Library Competencies*

<table>
<thead>
<tr>
<th>OLO Page</th>
<th>Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome!</td>
<td>NA</td>
</tr>
<tr>
<td>Library Overview</td>
<td>1. Familiarity with what resources Foley Center Library offers and how to access them</td>
</tr>
<tr>
<td>Library Logins</td>
<td>2. How to log in to the various services the library offers</td>
</tr>
<tr>
<td>Databases</td>
<td>3. How to find and access journal articles in online databases</td>
</tr>
<tr>
<td>Getting Books</td>
<td>4. How to access books, both ebooks and physical books from Foley or other libraries</td>
</tr>
<tr>
<td>Refworks</td>
<td>5. How to use RefWorks</td>
</tr>
<tr>
<td>Get One-on-One Help</td>
<td>6. How to get one-on-one help</td>
</tr>
<tr>
<td>Reflection</td>
<td>NA</td>
</tr>
</tbody>
</table>
Reflection, the third element of the Ignatian Pedagogical Paradigm (IPP), is the element with the strongest link to Jesuit spirituality, having its roots in Ignatius’ famous Spiritual Exercises, specifically in a process of reflection called the Examen.

Ignacio López de Loyola, known to us as Ignatius of Loyola, spent his youth as anything but a spiritual man. Accounts of his early life read like the stereotype of a foppish, womanizing Spanish swordsman, prickly about honor and quick to duel. The youngest of thirteen children, he entered service as a page and courtier as a boy, and became a protege of the Duke of Najera, making a name for himself in multiple battles. In 1521, he helped defend the fortress of Pamplona against invading French forces. During the fight, Ignatius was struck by a cannonball which shattered one leg and injured the other. He had so impressed the victorious French by his gallantry, however, that they gave him special care and sent him back on a litter to his home in Loyola (Ignatius o. Loyola, 1959).
During his long convalescence, Ignatius asked for books to read, hoping to pass the time immersed in the tales of chivalry and romance he loved. But the religious sisters who cared for him could only give him two books, one a life of Christ, and the other a collection of lives of the saints. In his sickbed, he went back and forth between daydreaming about impressing a woman with his great deeds and gallantry, and new daydreams prompted by his reading, in which he imagined following the example of the saints.

His autobiography, dictated by a fellow Jesuit near the end of his life, reports (Ignatius o. Loyola, 1900):

This succession of thoughts occupied him for a long while, those about God alternating with those about the world. But in these thoughts there was this difference. When he thought of worldly things it gave him great pleasure, but afterward he found himself dry and sad. But when he thought of journeying to Jerusalem, and of living only on herbs, and practicing austerities, he found pleasure not only while thinking of them, but also when he had ceased . . . He learned by experience that one train of thought left him sad, the other joyful . . . Afterward, when he began the Spiritual Exercises, he was enlightened, and understood what he afterward taught his children about the discernment of spirits. (p. 26-27).

When he had recovered, Ignatius gave up his place in society and took on a life of asceticism and penance, giving away his clothes and weapons and living as a beggar (Traube & Mooney, 2015). He turned his steps towards Jerusalem, intending a pilgrimage, but stopped for ten months at a hospital for the poor in Manresa, near Barcelona, doing chores in exchange for food and shelter. It was here that he found a balance, relaxing his austerities, becoming less hot-blooded, and reaching a new peace. It was also here that he wrote the bulk of what became the Spiritual Exercises (Traube & Mooney, 2015). Eventually he would attend the University of Paris, where he recruited his first followers and founded what became the Society of Jesus, or Jesuits. The Spiritual Exercises and their core of discernment are still central to Jesuit and Catholic spirituality today.

The Spiritual Exercises are usually engaged with in a silent retreat whose length can range from five to ninety days. Retreatants follow a plan of meditation and prayer (which can be adapted to each individual) in order to have “an intimate encounter with God,” as O’Brien (2015) terms it, to “learn to think and act more like Jesus” (p. 2). Each evening, in a process called the Examen, the retreatant brings to mind the experience of the day, reflects on it, and makes resolution for action to address shortcomings or extend success (Nowacek & Mountin, 2012). In this process of discernment, one carefully considers the interior movements of one’s soul — feelings, dispositions, reactions, thoughts, and so on — distinguishing between those which are good and those which are not, in order to make a good decision for action (Hardon, 1998). When the Jesuits moved into education, this reflective process helped them to evaluate and adapt the contemporary teaching methods of the University of Paris, which they took as their foundation, and give it a distinctly Jesuit character (Codina, 2000). Reflection became the fulcrum of Jesuit pedagogy on which all else balances.
In the academic milieu, reflection is how students make what they have learned their own. Summarizing a document created by the International Center for Jesuit Education, Korth writes, “Reflection is a thoughtful reconsideration of some subject matter, experience, idea, purpose or spontaneous reaction, in order to grasp its significance more fully. Thus, reflection is the process by which meaning surfaces in human experience . . .” (2008, p. 282). Reflection also includes one’s own internal responses to the subject. Ultimately, Reflection should help students to “move beyond knowing to action” (Jesuit Institute, 2014, p. 4).

The final page of the OLO, labeled “Reflection,” presents an embedded Google Form with three pages. The first asks students to give their name and choose their cohort. The second lists the OLO’s six library competencies and presents a checkbox for elements within each. This prompts students to reflect on their understanding of each competency, with the ability to quickly refresh their understanding using the matching page in the guide.

The final page of the OLO is labeled “Final Reflection.” Students are given the following prompt:

Please take a few moments to think about this guide and your understanding of the competencies:

• Are you confident in your ability to navigate and use library resources?

• How might these skills affect your work as a student?

• Is there anything you are still uncomfortable with?

(Your reflection will also provide us with valuable feedback about whether this guide is working for you!)

Students are given space in the form to write, which grows with the length of their reply. All responses to the form are saved to a spreadsheet which is shared with the advisor of each cohort. Advisors can quickly filter the spreadsheet for their own students’ responses. This provides a method of verifying that the students have completed the OLO. Beyond that, it provides a wealth of qualitative assessment information for the OLO itself, for more on which see the section in this paper on Evaluation.

Action

Flowing from reflection, action is what is taken forward and applied. In Jesuit spirituality the interior process of reflection should lead to exterior decisions and deeds. In an ultimate sense, action in Ignatian education means action for others (Korth, 2008), in which students carry their knowledge and skills beyond the classroom into life itself, applying them in the service of God and neighbor.

Limiting focus to the classroom context, action may be an exercise or assignment in which students apply their new understanding. For the OLO, the action phase is simply the students’ actual use of the library resources to help them in their coursework. That is the doing
that their reflecting should flow into.

Evaluation

The basics of evaluation are familiar to teachers: quizzes, grades, etc. These are important in Jesuit pedagogy as well. However, the IPP extends evaluation to the whole person of the student, encouraging instructors to look beyond the rubric and consider the “well-rounded growth” of their students (Korth, 2008, 283). Are they truly grasping and applying the material? Evaluation of the student is an opportunity for reflection on the part of the instructor.

The OLO includes no formal assignment. However, there are still opportunities for evaluation. First is the statistic of views of the guide. Between June 1, 2016, and May 1, 2017, the OLO received 2,129 views. This is not a perfect metric, since it is impossible to say how many of those views are from DELA program students and how many are from other sources (the guide was added to the Association of College and Research Libraries’ Peer-Reviewed Instructional Materials Online database, for instance), but it is possible to make informed assumptions. It is probable that most views come from students, and since only thirty-six students took the guide in that time span, with a similar number of students from the year before, the number of views suggest that the guide has been returned to repeatedly, probably as a ready reference, which in turn suggests that students are using library resources to help with their coursework.

Informal feedback to support that point came from DELA, whose cohort advisors spoke of seeing an improvement in the quality of students’ sources. Asked for data to illustrate this, Radmer sent bibliographies from the capstone papers of four “extremely diligent” students, two from 2014 and two from 2016. The 2016 papers cited more sources total than the 2014, pre-OLO papers (36 and 61, compared to 25 and 29), and also exhibited a greater variety of sources, including more discrete journal titles and more books, and adding dissertations and conference papers. While this is not a rigorous study, it is indicative of the improvement the DELA advisors have noticed.

The best source of feedback, however, came from the students themselves. As mentioned, the Self-Assessment and Final Reflection captures student responses in a Google Form embedded into the final page of the OLO, viewable by librarians and cohort advisors. In 62 responses from September 10, 2016, to October 31, 2017, 32 students explicitly stated their confidence in their ability to use library resources. For example:

- I am confident in using the website and being able to use the help guidelines or the chat if there is anything I forget or do not have a solid understanding of.

- Thanks to this Online Library Orientation Guide I feel quite confident that I will be able to navigate and use the library resources with little frustration.

Thirty-seven students directly mentioned the helpfulness of the guide itself:

- I thought that the information was organized very thoughtfully and the progression of
information made sense.

- The orientation guide is a well laid out, user friendly tool that helped introduce me to the world of academia research. The pointers and videos were directly related to what I will need to do and made navigating the system straight forward.

- The formatting was clear, easy to understand, and uncomplicated.

- [I] really like how there is a printable PDF for each topic.

The informal tone was praised:

- Warm, friendly and approachable!

- In particular, the multiple choice questions were useful for checking my own understanding (and triggered a couple of laughs).

- I really enjoyed the tone of the quizzes (clever!)

Twenty-nine students expressed some trepidation while also stating their confidence that their comfort level would grow over time in using the resources, with the ability to refer back to the guide:

- I feel a bit overwhelmed with all that goes into an effective search for resources but I feel that I have the resources I need to help me through the process and I believe I will become more comfortable with it, the more I use it.

- I was a little overwhelmed by the wealth of information and tools out there. There is no way that all the information included in this orientation will have sunk in, but I am happy to know that I can come back to this site and refer to it in the future. I definitely am aware of tools and resources I didn't know previously existed, which I am confident will be of great use as I go through my program.

Only four students expressed a lack of comfort with some element of library resources or the guide without also expressing confidence that their comfort level would grow.

- After a while it all turned into blah, blah, blah, and I simply scanned to get the info into my short term memory long enough to do the quiz and get the right answers.

- I feel somewhat uncomfortable with the layering of programs. I know that technology can be a major benefit, however, when it is not used properly it can cause setbacks to learning and frustrations.

Student reflections also proved very useful in identifying areas for improvement in the guide itself. Revisions made in response include adding a section about Google Scholar, creating a new video tutorial for RefWorks, adding rationale for why students need to sign up for so many library-related accounts, and emphasizing the value of the abstract as a preview of the article.
Conclusion

The Ignatian Pedagogical Paradigm may be more than four hundred years old, but its focus on the student makes it ideally suited to provide a framework for modern library instruction, even — and perhaps especially — in the still-new online realm. By following its five elements, instructors are encouraged to think in a student-centered fashion, taking into account the students’ context and experience, and giving them a crucial opportunity for reflection. When the Ignatian Pedagogical Paradigm was applied to an online library orientation, the result was an approachable, less-intimidating guide whose information is more likely to “stick” and transform students by giving them the ability to find, evaluate, and use information from library resources.
References


Assessment, Analytics, and Analysis: Demonstrating the Impact of LMS Embedded Librarians on Student Learning

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Abstract
Librarians are committed to supporting teaching, learning, and research. They are equally committed to supporting student success and retention. Demonstrating the impact that learning management system (LMS) embedded librarians make on student learning has been difficult to correlate, however. Studies that assess this connection, using qualitative and quantitative data have been undertaken in recent years. In a university regional campus library study conducted in 2016-2017, LMS embedded librarians explored the relationship between student learning and information literacy instruction, relying primarily on a customized LMS embedded librarian page of library resources and learning objects. They used a rubric to assess student research papers and bibliographies, LMS course analytics, instructors’ grades, and student feedback. This article reviews the literature and their methodology, challenges, and findings. They wish to guide colleagues, committed to assessing how librarians contribute to student learning, in selecting assessment approaches and validate their instructional role.

In recent years, academic librarians have attempted to assess the significance of information literacy instruction and how it impacts student learning. Project Information Literacy has been investigating different aspects of college students’ research behavior, reporting on freshmen through college graduates, since 2009. Megan Oakleaf’s report, The Value of Academic Libraries: A Comprehensive Research Review and Report 2010 highlights how libraries contribute to the teaching, learning, and research mission of higher education institutions. The Ithaka S & R US Survey 2016 validated the instructional role academic library directors intend librarians to play on campus. After fifteen years, the Association of College and Research Libraries (ACRL) revised its standards, resulting in The Framework for Information Literacy for Higher Education, 2016 in order to guide academics in critical thinking about information and research. In 2017, ACRL published Academic Library Impact: Improving Practice and Essential Areas to Research, which assesses how academic libraries contribute to student learning and outlines a research agenda for the future, with OCLC.

Despite this research-laden backdrop, library instructional services are not fully integrated into every relevant academic course. The Ithaka S & R US Library Survey 2016 demonstrated that while 90% of library directors see the instructional role of academic librarians
as an important service to undergraduate students, only about 70% of faculty members share that view (Wolff & Schonfeld, 2017). Although librarians intuit their instructional role as valued on campus, it has proven more difficult to demonstrate direct correlation and to quantify learning results. There is a gap in the library literature in this regard. Studies adopting different assessment strategies on information literacy efforts have been undertaken; however, there are very few assessment studies focused on LMS embedded librarianship that can guide current practitioners. Existing LMS embedded librarianship studies have been more typically qualitative, based on self-reported student improvement and faculty feedback. Surveys, focus groups, and one-minute papers are tested methods that have been used to gather qualitative data and anecdotes to demonstrate LMS embedded librarianship is a worthwhile investment of academic librarians’ instructional efforts. More progress is needed in creating assessment methods that test the impact of information literacy instruction on student success.

When librarians speak of embedded librarianship in the LMS, they are referring to a method of delivering information literacy instruction and library resources in LMS courses, directly to students, in collaboration with faculty. LMS embedded librarianship as an information literacy method began in the early 2000s (Tumbleson & Burke, 2013) and has been adopted internationally as an effective means of reaching students, especially online and distance students, in order to develop their information literacy. This arena of library instruction has great potential for growth, especially as institutions expand their online course and degree offerings and faculty increase their use of learning management systems (LMS). Demonstrating the effectiveness of library instructors in courses could influence faculty members to include librarians in their course offerings, helping students gain needed research skills. In this way, LMS embedded librarians contribute to university goals of student success and retention through participation in the teaching, learning, and research mission.

Literature Review

This literature review looks at three areas needed to build and maintain a successful embedded program: collaboration, assessment, and best practices. Publications covering these topics not only focused on embedded librarians, but often on the broader view of how librarians impact information literacy and the library’s support of online classes. There is also some overlap between the three areas with a collection of articles showcasing embedded librarianship as a facet of faculty and librarian collaboration (Kobzina, 2010; Sullivan & Porter, 2016) or assessment as a way to build best practices (Edwards, Kumar, & Ochoa, 2010).

Collaboration

An information literacy embedded librarian program is only as strong as its relationship among librarians, faculty, staff, administrators, and students. Most collaborative efforts can start small, with the introduction of one-shot sessions within a class, versus a more integrated library presence within the course. The drawbacks of one-shot or stand alone sessions include a limited amount of time with students, which may result in a truncated introduction to important library resources, as well as difficulty relating the session to a research course assignment. This particularly holds true when librarians are invited to lead a one-shot in a class that has no specific research assignment. Pautz and Gauder (2016) note that while one-shots have these difficulties,
there is evidence in the literature that integrating librarians more fully within courses leads to improvement in students’ research skills and building an overall greater understanding of information literacy. More specifically, Bennett and Simning (2010) show that the importance of having an embedded librarian integrated within the course allows for better point of need assistance for students, because these librarians have a greater understanding of course context and assignments from which to build individualized, more focused research help.

As noted above, when referring to the embedded librarian program as it operates on the Middletown campus, librarians are collaborating with faculty in their LMS courses where they deliver information literacy instruction and resources directly to students. However, when looking at collaboration as well as assessment, it is important to note the possible variations currently in practice. Pautz and Gauder (2016), Meredith and Mussell (2014), Kumar and Edwards (2013), Kobzina (2010), Edwards, Kumar, and Ochoa (2010), and Bennett and Simning (2010) all discuss these variations. They include differences in the definition of “embedded”. Some require the integration of librarians in only online or distance courses; others allow for integration in face-to-face courses with continued meetings and participation of the librarian leading workshops or class sessions. Kumar and Edwards (2013) and Bennett and Simning (2010) delve even deeper into the role of librarians in curriculum work with the liaison embedded model, whether online or in-person. It allows librarians to work with faculty, staff, and students in particular departments or schools, to provide more targeted services in that discipline. This can be a more time consuming endeavor for librarians, who then have a larger number of courses and students needing regular assistance.

So how do librarians build and maintain collaboration with faculty and students in order to create a more integrated librarian instructional role? The literature reveals that best practices can be applied to build sustainable relationships. Sullivan and Porter (2016) compiled a list of best practice lessons learned from seven years of collaborating. They are further supported by the findings by Pautz and Gauder (2016), Kumar and Edwards (2013), Kobzina (2010), and Bennett and Simning (2010).

In total, there are nine steps that can be referenced to ensure a successful faculty-librarian collaboration. First, librarians should be fully embedded in the course for team teaching, as “interdisciplinary teams often make for a richer educational experience,” (Sullivan & Porter, 2016, p. 34). Second, successful collaboration needs to be allowed to develop organically over time. Librarians cannot force collaboration upon faculty and staff; however, they can continue to communicate and highlight their services through emails, workshops, and liaison duties with different departments. Third, librarians need to show up early and often. One of the key elements of successfully integrating into a course is that they have repeated interactions with not only faculty, but also with the students. Pautz and Gauder (2016) noted that they “believe when faculty and reference librarians work together throughout the semester, the result could potentially improve students’ information literacy, their final writing projects, and, ultimately their overall learning.” Fourth, librarians should recognize that information literacy may require substantial time. To address this, librarians may scaffold the research process into smaller steps and emphasize those most relevant to the research assignment. This permits greater mindfulness with students and more focused, active learning. Steps five through seven overlap somewhat. They include detailed note-taking, experimenting fearlessly, and flexibility. Observing what
does and does not work as well as willingness to try new approaches, techniques, and tools keep collaboration fresh and interesting for librarians, students, and faculty. Attending to changeable students’ mood, attentiveness, and knowledge-base may also require on the fly changes and innovative assignment approaches. Eighth, librarians need to fully integrate information literacy with course materials. Collaboration requires the full support of faculty members who make time for librarian participation and endorsement of the librarian’s course presence to students.

Lastly, librarians should assess as much as possible, in as many ways as possible for continual improvement. Some assessments in use include Standardized Assessment of Information Literacy Skills (SAILS), pre- and post- tests, students and faculty surveys, student reflections, analysis of student assignments, quizzes, and LMS usage statistics.

Assessment

The majority of published LMS embedded librarianship studies have looked at qualitative results based on self-reported student improvement and faculty feedback. These results provide information on how students and faculty perceive the embedded librarian program, as well as what they believe can be gained from embedded librarian interactions. A smaller number of studies examine quantitative results of actual performance assessment. They highlight whether students are able to better complete research tasks, based on information literacy instruction or help from embedded librarians. Regardless of method, significant challenges exist for librarians to overcome in their scholarship and practice.

Qualitative Methods

Surveys. Self-reported surveys offer a variety of question types, from multiple choice to open-ended questions. Walsh (2009) notes that the most commonly used assessment method in IL instruction is the multiple choice questionnaire, followed by an annotated bibliography analysis. As embedded librarianship is often considered an offshoot of information literacy, the use of these common assessment methods is natural. The biggest challenge with surveys is the low number of responses received. In an effort to evaluate how their patrons perceive the value of embedded librarian services, Blake et al. (2016) distributed online surveys to over 4,000 students, faculty, and clinicians which were completed by 381 respondents for a return rate of only 10%. Of those 381 responses, 106 students, 43 faculty, and 63 clinicians were aware of the embedded program, while 169 or 45% of respondents were unaware of the program. Looking at the student responses in more detail, students noted librarians’ specific help completing assignments, improved literature searching, and better grades.

To solve this, Meredith and Mussell (2014) utilized a combination of assessment methods, including online faculty and student surveys along with an analysis of LMS usage statistics. With their online survey, the authors attempted to increase student participation by offering a $200 gift card drawing and keeping the survey open six months. Despite this incentive, researchers only received 47 completed surveys from the 382 students, for a response rate of 12%. The feedback received from the students highlighted how the service helped to remind them of search strategies and improved their overall knowledge. However, students noted that embedded librarians were only active in the course five days, which was limited. As
with the results from Blake et al., a greater number of faculty, 42%, responded to their survey. “Timing concerns aside, faculty unanimously agreed that having librarian support directly in their course not only improved the quality of the course offering but also helped students find better resources for their assignment,” (p. 102).

Edwards et al. (2010, p. 280) also performed multiple measures of assessment, including pre- and post-surveys which were “designed to assess student’s perceived self-efficacy and actual performance using library resources,” student responses to discussion questions, as well as an end of course discussion forum, and an instructor interview. Their results for the surveys yielded a greater number of results to Blake et al. and Meredith and Mussell, but they still average a 29% completion rate for 9 out of 31 participants with the pre-assessment, and 7 out of 31 (23%) for the post-assessment survey. Student responses for these surveys showed a mixed level of experience and comfort with library resources.

Kumar and Edwards (2013) are outliers on response rates. They had 21 out of 23 students (91%) respond to a pre-instruction survey and 19 out of 21 (90%) respond to a post survey. The higher participation number was based on a smaller base group of online graduate students who may have been predisposed to respond to email solicitations. The authors also noted that it is possible to have a discrepancy between students’ self-reports on perceived IL skills and actual performance.

**Discussion forums.** Students may be assigned discussion questions or given this avenue to communicate with librarians. The likelihood of discussion forum participation can be low if it is ungraded. Edwards et al. (2010) had only 16% or five students respond to a request for discussion feedback. While all the responses were positive, the low number again makes it difficult to draw conclusions as to the overall program’s usefulness.

**Focus groups and interviews.** Focus groups questions can be specific or open-ended to prompt thought and discussion. Detailed answers can be enlightening, but participation can again limited.

As the final assessment in their embedded program evaluation, Edwards et al. (2010) conducted a semi-structured interview with instructors. They appreciated how the embedded program equalized students’ information literacy understanding and learn to access information. A suggestion was made to require students’ use library resources in future and continue faculty collaboration and integration of library content.

**Student reflections.** Examples of reflections include one-minute papers, stemming from a prompt and a list of online posted questions. Again low response rate remains an issue. Without a grade or course requirement, student participation is typically low.

Pautz and Gauder (2016) highlight the one-minute paper. They asked students to provide feedback on what they learned during the information literacy session as well as what they found difficult in researching. Although total numbers of responses was missing, the selected excerpts indicated thoughtful, student answers.
**Quantitative Methods**

**Pre- and post-test data.** Information literacy quantitative assessment has commonly relied on pre-test and post-test data, which can be collected, irrespective of course format. SAILS and Credo InfoLit Modules are two commercial tools available for this purpose. One drawback is few responses, if the tests are not course requirements.

**Rubric analysis of student work.** Multiple types of student work can be studied, including annotated bibliographies, research papers, conference posters, class presentations, and multimedia products. Brookhart (2013) shows that there are well documented benefits to using rubric-based assessments: helping students learn more efficiently, improving students’ understanding of instructors’ expectations, more meaningful grades, understanding learning outcomes’ expectations, facilitating self-evaluation, and promoting deep learning. Problems occur when librarians or faculty use poorly written rubrics that yield unproductive results. Another drawback is that assignments are sometimes submitted to the instructor outside the LMS, which limits librarian access to analyze student assignments.

Kumar and Edwards (2013) review of the literature revealed that there are few studies that assess the impact of embedded librarians on student learning outcomes. Of the studies found, one utilized a standardized IL rubric to evaluate how student scores improved with a higher level of librarian integration and more time interacting with students. A second study used library-based assignments developed by faculty and librarians to see how well students applied integrated library content in the course.

Taking a two-pronged authentic assessment approach, Carbery and Leahy (2015) analyzed annotated bibliographies from first-year students. They started first with a rubric-based assessment, looking for evidence of IL competency. Then they examined over 500 citations, using a citation analysis checklist to learn how students used library resources. This decision was made because librarians were able to access the annotated bibliographies in an online depository, after they had taught a one-shot instruction session as part of the embedded program for the assignment. Results showed students were successful at identifying and using relevant sources; however, the average performance of their bibliographies was a C- grade, per the rubric. The low score indicates teaching first-year students how to develop their information literacy skills throughout the undergraduate years, adapting lesson plans, and building new library sessions are needed. The low scores may also highlight that librarians apply harsher grading than faculty when it comes to sources. A comparison between rubric scores and assignment grades could help identify issues.

A more recent review of the literature by Pautz and Gauder (2016) shows that the use of citation analysis for annotated bibliographies and research assignments is commonly used to assess the effectiveness of face-to-face information literacy instruction. The method of conducting citation analysis of students’ final papers is enlightening. How many and what kinds of sources do students use? Findings from their assessment indicate the majority of students focused on resources from the federal government and nonprofit organizations, related to their policy paper topics. The number of citations did increase, however, with an increase in faculty support and discussion on the importance of research. Better papers resulted with a wider
range of source types. While Pautz and Gauder’s work with students was accomplished through librarian-led research sessions and an online LibGuide, their method of citation analysis could be adapted for online embedded librarians who wanted to test their impact on student learning.

**Analysis of LMS course analytics.** Course analytics can include the number of times a student views the embedded library page, their use of links within the course, and views of announcements in the course. One drawback of course analytics is that it does not take into account students’ accessing information outside the LMS. The limited role of the librarian in the LMS course may reduce the types of analytics that the embedded librarian may access.

As stated above, dissatisfied with the low number of survey results from students, Meredith and Mussell (2014) gathered the forum activity data from their LMS, Moodle. This data provided information on all 382 participants, showing a 50% participation rate in the discussion forum. However, due to “forced subscription” to this library forum, students automatically received emails from all the posts to the forum, which meant they did not have to access the forum itself to see the posts. There was also communication outside the LMS. Students sent the embedded librarian direct questions through email or conversed by phone.

Looking at a correlation between embedded librarians and reference questions, Bennett and Simning (2010) noted that reference traffic from psychology students increased as embedded librarians increased their responses in course discussion forums. Results showed an increase from 244 questions in the summer to 612 in the winter. These totals were collected from Blackboard/WebCT which provides information on posts from each user. Regrettably, the study does not show whether the results helped improve student output.

None of these assessment methods perfectly demonstrates how embedded programs impact student learning. An analysis of the literature shows that the best method is to perform multiple measures of assessment to evaluate an embedded librarian program and continue to adapt best practices from the results.

**Best Practices**

Best practices for embedded programs continue to evolve as more studies and assessments are completed. Different resources and levels of integration influence student learning. Meredith and Mussell (2014) provide a good overview of a variety of studies on embedded librarianship and how they affect learning. The studies covered showed ways librarians interact with students and faculty: offering links to library sources, instructional videos, and learning objects, actively participating, leading course discussions, and grading literary or library research assignments. As part of their embedded best practices, York and Vance (2009) concluded that the best way to engage students is to employ variety. Librarians should provide links to library resources and learning objects, as well as be more active participants in discussion forums or deliver online instruction. York and Vance also focused on embedded librarians working in the LMS course, whether fully online or hybrid. They compiled a list of embedded librarian best practices through a comprehensive literature review and online survey with 159 academic librarian responses. These best practices guide the development of a
successful embedded program, collaboration, and assessment. York and Vance’s best practices are as follows:

- Know the campus LMS and its administrators
- Get a library link in the LMS
- Go beyond the library link
- Don’t become overextended; recruit some help
- Be strategic with course selection and time
- Be an active participant in the class
- Market the embedded librarian service

A major step toward continuing interaction with students and faculty is the willingness to try new things while being aware of time demands that each activity level involves. Assessment allows librarians to see their effectiveness in teaching students about research. Teaching also enables students to apply that knowledge to research assignments. As Pautz and Gauder (2016) note, librarians, as campus partners are “deeply invested in student learning, not only from a teaching standpoint but also in terms of how well learning happens” (p. 1027). Collaboration with course instructors or departments is key to getting an embedded librarian program started. Assessment is used to develop the program successfully along with best practices.

One Model for Assessment

LMS embedded librarianship was first piloted at Miami University’s Middletown regional campus in Spring Semester 2009 and has been offered ever since. The campus FTE student enrollment is 1650. Embedded librarians at Middletown are present in a mixture of online, hybrid, and face-to-face courses. Indeed, campus librarians are now embedded in more LMS courses (77 courses in 2016) than they teach face-to-face or one-shot library instruction sessions (45 courses in 2016). Along the way, assessment of embedded librarianship was built into each semester’s process, primarily through student and faculty perception surveys at the end of each semester. In 2016, the authors decided to gather quantitative data drawn from LMS analytics combined with the analysis of student research assignments, based upon a faculty graded assignment, a librarian rubric score, and student reflections. The hoped for outcome was to correlate and demonstrate academic librarians’ contribution to student learning.

All three librarians completed Miami University’s required human subjects research online training prior to the summer 2016. Then they submitted a research proposal which was accepted by the Miami University Institutional Review Board (IRB) and granted an exemption. The proposal included a mixed methods approach to assess the impact of LMS embedded librarianship on student learning. They launched the study in fall 2016, adhering to the following criteria. They decided to compare one course section with an LMS embedded
librarian with another without a LMS embedded librarian present. They identified course sections taught by the same professor to ensure greater accuracy in comparing outcomes. They invited faculty meeting this criteria to participate in the study. Three faculty, teaching two sections each, in English, kinesiology, and sociology agreed to participate in the study. Other faculty refused because they wanted the LMS embedded librarian present in both of their course sections.

Participating faculty added a LMS embedded librarian to one of their two sections, in the role of Designer which allowed librarians to create content but excluded them from gradebook access in Canvas. They selected a rubric to evaluate students’ use of sources in their research paper assignment. They used the Carleton Information Literacy in Student Writing Project rubric (available at https://apps.carleton.edu/campus/library/about/infolit/projects/portfolios/) which examines student bibliographies, in-text citations, and inclusion of source material in the writing of a research document. Only after students submitted their research papers did librarians email students to request consent for participation in the study. This timing had the greatest likelihood of avoiding influence on students’ research behavior, though it meant for these three courses that students could not consent until the courses were nearly complete.

The process of the study worked like this: librarians assigned identifiers to students from their assigned courses who agreed to participate to ensure anonymity. The librarians assigned to each pair of courses collected data on their interactions with consenting students through email and research consultation requests. When research papers were available, the embedded librarian asked another librarian to score the paper using a rubric to ensure objectivity. The embedded librarian then gathered Canvas course analytics such as embedded librarian page views and course announcement views. Finally, the embedded librarians read consenting students’ research reflections.

The librarians intended to ask instructors for a ranked list of participating students in order of their grade for this specific research assignment rather than the actual grade and then compare instructor grade rankings with students in the course section without a LMS embedded librarian. All data collected was to be aggregated and individuals to remain anonymous once comparisons were made. They planned to supply a debriefing document, noting preliminary outcomes to participating students and faculty. Unfortunately, student participation was minimal. Only 12 students consented to participate from the three pairs of course sections, and all 12 were in one half of each pair of sections. There could be no comparison of participating students between the section that had an embedded librarian and the section that did not.

The research proposal was redesigned using different parameters for spring 2017. It was resubmitted to the IRB between the Fall and Spring semesters and was once again granted exempt status. This time, the study was open to all faculty who requested an LMS embedded librarian to collaborate with them in at least one Canvas course section. This change increased faculty participation, since not all faculty had to be teaching two sections of a course, and no courses were excluded from having an embedded librarian. LMS embedded librarians emailed an introductory greeting through the Announcements tool to each class so students were aware of the service. Librarians placed a Canvas page of customized library resources, services, and strategies in each LMS course participating in the study (see an example of one in Appendix
A). Students were not asked for their consent until after they had submitted their research assignment, in order to preserve an objective learning environment. Librarians could not treat consenting and non-consenting students differently in the assistance they were provided while they worked on the research assignment.

The process of the study was essentially identical to the first version, with a few key changes. The embedded librarians were added to Canvas in the role of Teacher, which gave them access to the gradebook. This allowed them to note the instructor’s grade on the research assignment as part of the collected data. Another method’s modification was the addition of an incentive for students to participate and complete the consent form (see Appendix B). Students were informed there would be a drawing for three $25 Amazon gift cards to increase the likelihood of more consenting students. The research assignments chosen for analysis fell at a greater variety of time periods in the semester, so there was no rush to have students participate just prior to finals week. Students were emailed a consent form after instructors had graded their research assignments. This time 31 students gave consent. The same process was repeated for an additional course in the early part of our summer 2017 term, netting two more consenting students for a grand total of 33 students from five different courses.

Discussion

Once the summer term ended, the librarians reviewed their gathered data. The following section details the quantitative results from that data along with a discussion of the results. While several correlations and inferences can be made from the results, the discussion will also include gaps in the study that need to be addressed in the future.

Student participation in the study was higher than the authors expected, with a response rate of 32.6%. That rate was calculated from having 33 students consent to take part from five different courses in spring/summer 2017 with a total population of 101 students. The librarians also invited students from five additional courses, with a population of 94 students, but none of those students were represented in the group that allowed consent. So, a calculation of participation that includes both the five courses with consenting students and five courses without a student who consented then involves 195 potential students. The response rate is then 16.9%. Even so, this was a great improvement from the original attempt at the study in fall 2016, when 12 of 140 students agreed to participate (a response rate of 8.6%). The incentive of the Amazon gift card drawing made a clear difference.

Issues arose in the study process that led to missing data for some students. Three of the 33 students from the spring/summer 2017 group did not have research assignments available for the librarians to assess with the rubric, but the instructor’s grades for the assignments were available. In some cases, research assignments were submitted to the instructor outside of Canvas, leading to the documents not being available to the librarians through Canvas. An additional three students did not have grades available from the course instructor (either because they dropped the course late in the semester or because they never submitted the assignment). That left a total of 27 students for whom a rubric score could be reported, and 30 students who had an instructor’s grade.
The librarians examined the rubric scores and instructor’s grades, and separated the results for each of them into groups based on standard grade divisions (90% and above as an A, 80% and above as a B, etc.). They then averaged for each group how many average views each student had of the embedded librarian page in Canvas, and also how many average views each student had of librarian-posted announcements in Canvas. One difficulty with the announcement views is that the posted announcements are also automatically emailed to students in the courses. Many more students may have viewed the announcements in their email, but librarians have no way of tracking those views. The results do show that the embedded librarian page was used most by students who participated in the study.

Contradictory trends appeared in the rubric scores report, shown in Table 1. Based on the rubric scores, the average views of embedded librarian announcements follows a hopeful pattern from the librarian perspective. It appears that the more announcements a student viewed, the better they did on the rubric. However, average views of the embedded librarian page were less clearly linked to success on the rubric. Students in the highest grade category for the rubric also had a high number of average views of the page, but the highest average views figure went to students with the lowest scores on the rubric. There are possible arguments for why this might be so, that students with weaker information literacy skills may have required more trips to the embedded librarian page to access citation resources, for example. However, it is difficult to correlate the influence of page views in a meaningful way.

In the analysis of instructor’s grade groups and interactions with embedded librarian resources, shown in Table 2, the trend of both announcement views and page views run fairly similarly. The highest average views of those two items are reported for the group with the highest grades on their research assignments. The average views decrease with each grade group, until the C group, in which page views increase, before dropping again for the D group. A generous explanation from the data would suggest a correlation between embedded librarian resource views and assignment grades, with the rise in C showing that these students put in extra effort so that they did not end up in the D group. That is impossible to know with the data available.

Table 1

<table>
<thead>
<tr>
<th>Librarian Rubric Scores Group</th>
<th>Number of students</th>
<th>Embedded Librarian Page Average Views</th>
<th>Embedded Librarian Announcements Average Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>3.20</td>
<td>2.80</td>
</tr>
<tr>
<td>B</td>
<td>11</td>
<td>1.91</td>
<td>1.91</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>2.00</td>
<td>0.40</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>4.83</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Rubric score groups and interactions with embedded librarian pages and announcements
Table 2

Instructor’s grade groups and interactions with embedded librarian pages and announcements

<table>
<thead>
<tr>
<th>Instructor’s Grade Group</th>
<th>Number of students</th>
<th>Embedded Librarian Page Average Views</th>
<th>Embedded Librarian Announcements Average Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>19</td>
<td>3.74</td>
<td>2.00</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>0.71</td>
<td>0.14</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>2.00</td>
<td>0.00</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>0.50</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The rubric served as a tougher judge of students’ research work than did their instructors. The distribution of students among the rubric score groups did not match the distribution of students among the instructor’s grade groups. Students’ actual grades on the assignments were much higher on average than the ratings of the rubric would suggest. This does not invalidate the rubric as an assessment tool, but it does demonstrate that there can be differences in each measure. The rubric is strongly focused on certain behaviors of students in their assignments: bibliographies, in-text citations, and the use of source materials in the text. The instructor is grading the assignment using a broader array of factors, including clear and concise writing, an understanding of the topic of the paper, and other criteria unique to the assignment. Each measure serves a purpose, the first in identifying successes and failures in information literacy and research skills, and the second in demonstrating a student’s command of information sources, the writing process, and the powers of persuasion and argument. Librarians hope that the specific skills they teach will support students’ larger academic success, and this combination of measures does address both parts of that hope.

Two items left out of the analysis and discussion of student interactions with librarians are direct emails to and research consultations with embedded librarians. While the larger group of students in the embedded courses did participate in these ways of asking librarians for help, those who consented to take part in the study sent very few emails and had only a couple of research consultations. This small number of interactions did not offer positive or negative evidence of librarians’ impact on student learning and success.

One remaining element of the study is the research reflection. In the study process plan, students would submit a brief research reflection form once they had completed their research assignment. The questions on the form, shown in Appendix C, ask students to share their strategies of searching for information on their topics, the sources they used to find the information, and any challenges or difficulties that they faced. Of the 33 consenting students, only five completed a research reflection. This small sample does not reveal much to give further detail to the quantitative measures listed above. Sixty percent of the students used the embedded librarian page and the library website to find information, and 80% of the students
started by using a library database. Responses to the other questions were focused on their individual searches, without findings that could be generalized.

**Conclusion**

Librarians are diligently pursuing ways to impact student learning and contribute to student success in both their current studies and their lifelong need to find and use information. This study demonstrates one attempt to quantify that impact and see if students who use the services of an LMS embedded librarian can have a more positive outcome than students who do not use it. The need for such study is crucial to the future of student’s information literacy and the growth and improvement of library instructional services.

The work of this research approach continues. In fall 2017, the same research protocols were used as in spring and summer 2017, with the expectation of increasing student participation and results to be analyzed for greater insights. An increased number of students had consented to take part in the study at the time of this writing, and attempts will be made to increase their participation in the research reflection. Less focus will be given to the average views of announcements, given the fact that students may view announcements primarily in their email. There do need to be additional measures of student interactions, and investigations will continue to find methods for noting student use of library resources, better tracking of direct emails and chats with librarians, and participation in research consultations.

These humble efforts to increase the study of LMS analytics and assess students’ research products within the framework of an IRB study are baby steps. Perhaps other librarians will be inspired to undertake similar quantitative research to assess the value of LMS embedded librarianship.
References


Appendix A
Sample Embedded Librarian Page in Canvas

Topic Ideas

We have several sources for Reference/ Background Information that can be useful for identifying topics and related concepts.

- CQ Researcher Online

  - An in-depth report is published each week with background, outlook, statistics, pro/con, timeline, articles, websites

- Opposing Viewpoints in Context

  - Find many source types on a topic: viewpoint articles, news, statistics, podcasts, videos. Click "Law & Politics-View All" to see issues related to this topic area.

- Points of View Reference Center

  - Search or browse for sources related to your topic.

See these e-reference books for topic ideas related to Criminal Justice:

- Profiling and Criminal Justice in America
- World of Forensic Science

You can also check these librarian-created subject guides for additional resources:

- Criminal Justice Studies
- Criminology

Articles & More

- Start searching for articles here (searches 80 databases at once).
- Use limiters - peer-reviewed, subject, date, etc.
- Use "Cite" tool on the right to create an APA citation.
- "Research Starter" provides a topic overview.
- To share this article, copy the Permalink on the right in the item record. (not the browser URL)

Watch: Articles & More (Long: 2:27 min., 2015)

Need a Scholarly, Peer-Reviewed Journal Article? Who writes them? Why? Where do you find one?

- Peer Review in 3 Minutes (NCSU Libraries)
- Anatomy of a Scholarly Article (NCSU Libraries)
Appendix B
Student Consent Email and Form

Invitation to participate in study of student learning and library services

The Gardner-Harvey Librarians are trying to further improve how we provide you with library resources and services in your Canvas course so that you can more easily complete research assignments. We are conducting a study and request your voluntary consent to observe how the service is used by students. Completing the “Research Consent Form” will enter you in a drawing for one of three $25 Amazon gift cards. You can read more about our process and how your identity will be protected during the study. Please respond "yes" or "no" on the Consent Form to indicate whether you will participate (you will need to be logged into your Miami Google account to respond). Thank you for your participation!
John Burke, Library Director, burkejj@miamioh.edu
Jessie Long, Public Services Librarian, longjh@miamioh.edu
Beth Tumbleson, Assistant Library Director, tumbleb@miamioh.edu

Embedded Librarian Assessment Consent Form

I agree to participate in the study of library services in my Canvas course. I understand my participation is voluntary and that my name will not be associated with my responses. I also understand that I may withdraw from the study at any time.

Yes
No
Appendix C
Research Reflection Form

Research Reflection
Please enter your UniqueID:

What topic did you research for your course assignment?

Where did you begin your research? (Ex. library database, Google, Wikipedia, textbook, etc.)

List the exact words you searched (this may include keywords, subject headings, AND, OR, and NOT, or a question).

Where did you search for information? Select all that apply.
- Embedded Librarian resources page
- Library website
- Books & More
- Articles & More
- Other library database
- Google Scholar
- Other

If you replied "Other", list your other sources below:

Describe one information problem that frustrated you during your research. How did you solve it?

If you contacted a librarian for assistance with this problem, choose one or more of the methods below that you used to do so.
- Embedded librarian
- Email
- Research consultation
- In library
- Phone
- Chat or text

Have you had any instruction on using library resources in a previous course? (please mark all options that apply)
- In high school
- While at Miami
- At another higher education institution
- No

What is your current class level at Miami?
- College Credit Plus
- Freshman
- Sophomore
- Junior
- Senior
- Graduate student
- N/A

Please choose your age range
- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 or older
Bridging the Gap: Information Literacy and Learning in Online Undergraduate Courses

Wei Zakharov
Clarence Maybee
Purdue University

Abstract

This study explores how libraries can enhance information literacy in online undergraduate courses at Purdue University, a large Midwestern research university. The paper investigates undergraduate students’ perception of the importance and their awareness of libraries’ services for online learning, challenges of using information to complete course assignments, and the ability to gather and evaluate information to complete online coursework. The findings contribute to four aspects of the Libraries’ programmatic efforts to support undergraduate students taking online courses. These include showing a need for IL, helping students stay connected to resources and support, pedagogic strategies, and strategically targeting courses.

Introduction

Recent data showed 5.8 million students at U.S. institutions of higher education took at least one online course during the fall 2014 semester (Allen, Seaman, Poulin, & Straut, 2016). In the same survey, 63.3% of the chief academic leaders considered online learning critical to their long-term strategy (Allen et al., 2016). Online learning is becoming mainstream. In the past few years, Purdue University, a large Midwestern research university in the United States, has increased its online course offerings. In the 2015-2016 academic year, 18,079 students were enrolled in at least one online course (Purdue Office of Institutional Research, Assessment, & Effectiveness, 2016). The online courses offered a range of disciplines, such as statistics, mathematics, history, and economics. As with other public institutions, Purdue’s largest portion of distance education students were undergraduate students (Allen et al., 2016).

Equipping undergraduate students to engage with information for online coursework is critical. Information literacy (IL) is an important learning outcome in undergraduate education (Bradley, 2013), and it has been recognized as such at Purdue. In an effort to provide services to undergraduate students in online courses equivalent to those courses offered on a physical campus (Association of College & Research Libraries, 2016), the Purdue University Libraries are continuing to develop partnerships and relationships with units and centers on campus to enhance undergraduate students’ IL for online learning environments. This study is conducted to inform the Libraries’ efforts. Gathering data from students enrolled in online undergraduate courses, the study identifies the challenges students face and determines students’ needs and viewpoints related to using information for online undergraduate coursework. In addition, this study conducts a preliminary examination of the ability of undergraduate students in online
courses to gather and critically evaluate information to complete course assignments. The results are used to introduce partners to the potential benefits of integrating IL into online courses. Strategies are presented for a) helping students stay connected to resources and get support from the Libraries; b) selecting pedagogic approaches for integrating information literacy into online courses; and c) determining how to work with online courses to have the greatest impact on student learning.

Methods

This mixed methods design study included a survey and an assessment. The purpose of collecting both quantitative and qualitative data was to draw from the strengths of both forms of research and provide better understanding by interpreting results from two different perspectives rather than using either approach alone (Creswell & Clark, 2007). The study population was the 1832 undergraduate students enrolled in all the late-summer online classes at Purdue, which consisted of 40 courses and 73 sections in total starting on and after July 2, 2017. Among this population, 1544 students took one online class in late summer 2017, 264 students took two online classes in late summer 2017, and 24 students took three online classes in late summer 2017. All the online courses’ instructors were informed through an email about the purpose of this study in late June 2017. All the students received an emailed invitation and two reminders from the Registrar to participate in this study in late July. Twenty percent of the students who completed the survey were randomly drawn and each received an incentive of a $5 Amazon e-gift card.

The survey instrument was comprised of four parts: a) six questions focused on demographic information; b) eight questions focused on how students perceived the importance and awareness of the Libraries’ services for online learning; c) an open-ended question focused on drawing out the challenges of using information for online coursework; and d) eight assessment questions testing students’ ability to access needed information and critically evaluate information. The quantitative data were analyzed using Qualtrics analytics and Excel to generate descriptive and visual results. The open text responses were analyzed using a pattern-seeking method to identify themes among students’ responses, specifically related to challenges of using information for online coursework. Multiple quotes from the survey participants are used to support the identified major challenges.

Results

Demographic Information

Three hundred and fifty four students responded to the survey. The response rate was 19%. The respondents were from all colleges except College of Veterinary Medicine. The largest percentages were from College of Engineering (27%, n=97), College of Liberal Arts (18%, n=64) and College of Health and Human Sciences (16%, n=55). The majority were domestic students (83%, n=293). Senior students counted for 41% (n=145) of the respondents, junior students 35% (n=125), sophomore 20% (n=72) and freshmen 3% (n=9). One quarter of the respondents (n=88) were taking an online course at the university for the first time. The majority were in the US while taking the class (89%, n=315).

Importance and Awareness of Libraries’ Services for Online Learning
The students were asked to rate the importance of libraries’ services for online learning. As outlined in Table 1, nearly 70% of the students identified accessing electronic information resources as the most important Libraries’ service for online learning. The second most important Libraries’ service was citation management tools (63%), which was followed by online tutorials that explain how to use the libraries’ materials or services (51%). Between forty-one and fifty percent of the student respondents indicated that other services, including requesting electronic information resources, assistance from librarians, online guides, and assistance through online chat, email, text, Twitter or phone call (Ask a Librarian) were important services for online learning.

The eighth question in this section of the survey allowed students to list other Libraries’ services that they consider important for online learning. The sixteen responses students provided include Libraries’ learning spaces, suggesting that the students were taking online courses while on campus, and Purdue’s Online Writing Lab (OWL), which provides writing and citation formatting assistance for MLA and APA. Purdue OWL, the first online writing lab, is accessed by millions each year. While it is not provided by the Libraries, many online guides (i.e., LibGuides) include links to the service.

Table 1

<table>
<thead>
<tr>
<th>Libraries’ services for online learning</th>
<th># of students</th>
<th>% of survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access electronic information resources through the Purdue University Libraries from off campus</td>
<td>168</td>
<td>69%</td>
</tr>
<tr>
<td>Citation management tools support</td>
<td>151</td>
<td>63%</td>
</tr>
<tr>
<td>Online tutorials that explain how to use the libraries’ materials or services</td>
<td>122</td>
<td>51%</td>
</tr>
<tr>
<td>Request electronic information resources not owned by the Purdue University Libraries through Interlibrary Loan</td>
<td>118</td>
<td>50%</td>
</tr>
<tr>
<td>Assistance from librarians for your subject/department</td>
<td>110</td>
<td>46%</td>
</tr>
<tr>
<td>Online guides from the librarian for your subject/department</td>
<td>106</td>
<td>45%</td>
</tr>
<tr>
<td>Assistance through “Ask a Librarian”- online chat, email, text, tweeter or phone call</td>
<td>96</td>
<td>41%</td>
</tr>
</tbody>
</table>
Table 2

Non-awareness or no use of Libraries’ services for online learning

<table>
<thead>
<tr>
<th>Libraries’ services for online learning</th>
<th># of students</th>
<th>% of survey respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access electronic information resources through the Purdue University Libraries from off campus</td>
<td>97</td>
<td>38%</td>
</tr>
<tr>
<td>Citation management tools support</td>
<td>143</td>
<td>56%</td>
</tr>
<tr>
<td>Request electronic information resources not owned by the Purdue University Libraries through Interlibrary Loan</td>
<td>150</td>
<td>58%</td>
</tr>
<tr>
<td>Assistance from librarians for your subject/department</td>
<td>151</td>
<td>60%</td>
</tr>
<tr>
<td>Online tutorials that explain how to use the libraries’ materials or services</td>
<td>169</td>
<td>67%</td>
</tr>
<tr>
<td>Online guides from the librarian for your subject/department</td>
<td>182</td>
<td>70%</td>
</tr>
<tr>
<td>Assistance through “Ask a Librarian” - online chat, email, text, tweeter or phone call</td>
<td>205</td>
<td>79%</td>
</tr>
</tbody>
</table>

However, a large number of the students were not aware of some of these services and/or did not know how to find a service to use it. As shown in Table 2, more than one third of the students did not know they could access electronic information resources from off campus. More than half of the students were not aware of citation management support services (56%), followed by Interlibrary Loan service (58%) and assistance from librarians (60%). More than two thirds of the respondents were not aware of, and did not use, other services, including online tutorials, online guides, and assistance through online chat, email, text, Twitter or phone call (Ask a Librarian).

**Challenges of Using Information for Online Coursework**

The researchers identified themes that highlighted additional challenges for, and greater insights into, students using information for online learning. Multiple quotes from the survey respondents are used to offer details and support the identified four major challenges. It is noted that some students perceived no need in their online coursework for using libraries’ services for online learning, and therefore, experienced no challenges.
Challenge 1: Technical barriers. Students reported that they struggled with Internet connection, slow Internet speed, some resources blocked outside of the United States, navigating online resources and services, and other technical barriers. For example:

- “connection speeds which could have originated from both ends”
- “Sometimes some countries blocked or have slow VPN for the international students to watch videos assigned”
- “Most of the time, I don't know how to get to the service to use it”
- “Accessing the database for journals is a bit confusing”

Challenge 2: Lack of effective searching strategy. Students expressed concerns of searching strategies as follows:

- “I cannot narrow down my searches”
- “Not knowing which database would be best for what I need”
- “Sometimes finding what I need through the catalogs is a little difficult”

Challenge 3: No online access to full text articles, or articles not fully digitized. Students were frustrated with having no access to full text articles online for their coursework. In addition, some students found it discouraging that they could not interact with online articles, such as keyword searching or annotating. For example:

- “I have run into issues where I find great articles online, but they are only fully available, beyond an abstract, from the physical library which I have no access to from home”
- “I cannot do a quick find through word searches in a passage”
- “Since I use a PDF annotator for annotating my online readings (which are distributed in pdf format), sometimes I come across documents that have not been digitized and therefore the text is not selectable and I cannot highlight or select or underline text without first having to manually run character recognition software... It just ends up being an extra hassle for me while trying to complete the readings (which there are a lot of)”
**Challenge 4: No face-to-face interaction.** Students take most classes face-to-face and had trouble with social interaction and expectation clarification in their online classes. For example:

- “not being able to meet face to face with a resource professional”
- “not being totally clear on a question that is asked, and not having another form of communication (other than email) to clarify questions with my professor”

**Assessment**

The students were asked to take an assessment, which has eight multiple-choice questions. Right after the students submitted their answers, they received the score and feedback. The assessment was developed to preliminarily test students’ abilities in accessing the needed information and critically evaluating information. A sample assessment questions is as follows:

Statement: "Describe the effects of automobile emissions on air quality." Which source would most likely provide you with objective information for the main concepts in the statement?

A. A personal interview with an influential lobbyist  
B. A web site that advocates clean air  
C. The latest annual report from a major automobile manufacturer  
D. A study featured in a peer-reviewed periodical

Participants included 253 students who responded to the survey first. The maximum score was 16 points. The mean was 10.7. The standard deviation was 3.4.

**Discussion**

The results of the study inform Purdue Libraries’ goals of developing partnerships and relationships with faculty and staff involved in developing and teaching online courses, and the long-term goal of collaborating to integrate IL into those courses. The findings contribute to four aspects of the Libraries’ programmatic efforts to support undergraduate students taking online courses at Purdue, which include:

- Showing a need for IL  
- Helping students stay connected to resources and support
• Pedagogic strategies

• Strategically targeting courses

**Showing a Need for IL**

The findings suggest that students recognize the importance of many of the Libraries’ resources and services for supporting their learning in online courses. Each of the Libraries’ resources and services listed on the survey were identified as important for their online coursework by over 40% of student respondents. The highest percentages of students identified accessing information resources from off campus (69%) and support for using citation management tools (63%) as important. However, despite recognizing their importance for online learning, many students indicated that they had not used them or were unaware of where to access them (see Table 3). With the exception of accessing resources from off campus (38%), over 50% of the students indicated that they had not used, or did not know where to access, each of the other six Libraries’ resources and services listed on the survey.

**Table 3**

*Comparison of the importance and use and awareness of Libraries’ resources and services*

<table>
<thead>
<tr>
<th>Libraries’ services for online learning</th>
<th>Recognized as Important</th>
<th>Not used or unaware of where to access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access electronic information resources through the Purdue University Libraries from off campus</td>
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</tr>
</tbody>
</table>
Purdue Libraries are collaborating with stakeholders across campus, such as Digital Education center and Instructional Designers Community, to enhance IL and learning in undergraduate online courses. Librarians are communicating the findings to help partners understand the IL needs of undergraduate students in online courses. Information about Libraries’ services and IL materials will be included in the university online teaching and learning repository, which is currently under construction.

Helping Students Stay Connected

When listing challenges, student participants reported a number of technical concerns that in many ways go beyond the purview of the libraries, such as poor Internet connections. There is little the libraries can do to mitigate blocked or slow Internet connections encountered by students connecting to their course from outside of the United States. However, this example of a technical challenge does suggest actions libraries can take to minimize access-related challenges when creating resources or providing services. For example, knowing that China blocks YouTube, libraries should not only post video tutorials for instructing students how to find or use information to YouTube. Videos prepared for online courses should be hosted on other video management systems as well, such as MediaSpace.

Another technical challenge listed by student participants is not being able to access the full text of articles. Of course, students can request articles that the libraries do not have full text access to by making a request for the material through Interlibrary Loan. However, the results of the study indicate that 58% of the students had never made an Interlibrary Loan request or were unaware of Interlibrary Loan services. One possible solution to this problem may be promoting the use of Interlibrary Loan services to students in online courses. However, it would be best if students use such services at the point of need, and therefore, the libraries will work to make instructors of online courses aware of where to direct students when they encounter a citation to a useful sounding article for which there is no full text available. Other student participants were challenged by portable document format (PDF) materials not being searchable. This could be addressed by showing students how to convert documents to be searchable using optical character recognition (OCR) software.

A related challenge described by student participants was getting useful assistance when needed, which was perceived to be more effective through face-to-face interactions with instructors or librarians. A strategy to alleviate this challenge for students is to meet with them using webcam-enabled communications software. While it is not possible to meet in person with students who are off campus, librarians supporting online courses offer and promote online office hours in which they connect with students via Skype or another webcam-enabled software.

Pedagogic Strategies

While not comprehensive, the eight assessment questions that student participants answered do offer an indication of students’ IL abilities related to finding and evaluating information for their online coursework. The maximum score for the assessment questions was 16 points and the mean for completed assessment was 10.7 points, suggesting that the students’ IL skills need to be improved in general. The overall strategy for enhancing students’ ability to
use information via Purdue’s online offerings is to partner with instructors to integrate IL into online courses. This approach has been used to advance the libraries’ face-to-face IL efforts. Referred to as informed learning (Bruce, 2008), librarians at Purdue partner with instructors to develop learning activities in which students learn to use information as they engage with course content. Integrating IL into disciplinary courses in this way allows students to use information within a disciplinary or professional context, which will better prepare them for using information in their careers after graduation.

The libraries at Purdue have partnered with instructors to develop and integrate IL assignments into foundational face-to-face courses through their involvement with the IMPACT program (Maybee, in press). In working with the instructors teaching online courses, librarians are developing digital media, such as instructional tutorials, that can be used by instructors to teach students IL-related concepts and skills that can immediately applied to enable learning course content. The libraries are planning a series of workshops for instructors to help them determine how best to incorporate libraries’ online learning assets into their courses.

The results of the assessment suggest a couple other strategies that are applicable to support students in online courses. The standard deviation of the scores of the assessment questions was 3.4, which suggests the students have a relatively wide range of IL abilities. In other words, the students in the same class have various levels of IL skills. A strategy often used to support students who may not be proficient with skills or have an understanding of the content knowledge expected of them at the beginning of a course is to provide supplemental materials. The libraries can partner with instructors of online courses to identify and provide IL-related supplemental materials in the form of online learning assets intended to be used outside of class; thus avoiding dedicating valuable time in class to cover things that only a portion of the students need to learn. For example, students in the ENGL 420, “Business Writing” course may use supplemental materials to learn search strategies, or other aspects of using information, that they are expected to already be able to perform when they enroll in the course.

Strategically Targeting Courses

The results of our study also inform strategies for determining which courses may be good targets for proposing integrating IL. A number of the participants listing challenges about using information for their online courses claimed that their courses did not require them to use libraries’ resources. However, an examination of our data indicates further investigation is needed to determine if there may be opportunities for IL in such courses. One example is HIST 104, “US since 1877”. A student participant mentioned that the materials for the course were supplied by the instructor or in textbook. While it is not uncommon for instructors to provide materials in lower-level courses, these courses do provide foundational experiences for students of which IL needs to be part. As with face-to-face IL efforts, a strategy for the Purdue Libraries will be to target large foundational courses by working with instructors to redesign course assignments, which require students to actively seek and apply information.

The IL needs of upper-level advanced online courses can be very different than the needs of lower-level online courses. This is exemplified by ENGL 420, “Business Writing.” In this course, students are expected to already have good IL skills. A strategy for addressing student needs related to libraries’ resources and services is for librarians to provide just in time teaching like online chatting, that could be embedded as one package with the course online learning
management system. Recognizing that students in upper-level courses may need specialized resources, librarians can also partner with instructors to develop LibGuides and offer other library-focused resources.

Conclusion

In conclusion, the results of this study provide the evidence to recognize important libraries’ services for online learning and challenges in using information in undergraduate online courses. Although, more data about students’ IL needs in online courses needs to be collected, such as investigating the specific ways students need to use information for online learning within specific disciplines (e.g., history or biology), the results of this study inform four aspects of the programmatic efforts being undertaken by the Purdue Libraries. The first aspect, showing a need for IL, refers to using the findings to communicate to stakeholders, such as faculty and directors of online programs. The second aspect, helping students stay connected to resources and support, highlights the need to consider technical concerns when creating online materials and providing support. The last two aspects are pedagogic strategies for integrating IL into online courses, and strategically targeting courses. In this case, the findings inform specific details of the Libraries’ programmatic approach to partnering with instructors to integrate IL into online courses that is modelled after the Libraries’ face-to-face programmatic efforts.
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“I wanna be in the room where it happens”…: Using Curriculum Mapping to Support the Information Literacy Goals of Online Programs

Amanda Ziegler
University of West Florida

Abstract
Embedding information literacy and instruction within an online program can be a difficult process to begin. Curriculum mapping guides librarians to the courses where their services can have the most impact. However, curriculum mapping can seem like an overwhelming and unwieldy process. This case study demystifies the process and shows how simple and effective curriculum maps can be designed and utilized. Particularly in environment with a single librarian dedicated to online outreach serving as a coordinator for other subject liaison librarians, curriculum mapping is a tool that allows for clear communication, outreach and systematic assessment. This paper will provide an overview of how the curriculum maps were developed, how they were used for communication and outreach both within and outside the Libraries, and ideas for programmatic assessment based upon the maps.

Librarians serve as a part of an overall information ecosystem, one that both encompasses and stretches beyond the classroom. Particularly in an online environment, it is essential that students (and faculty) be provided with the resources that they need to navigate the sometimes confusing waters of today’s information infrastructure. But how can librarians best provide this support? How are they to know which resources to provide, to whom, and when? As information professionals, librarians are often committed to doing whatever it takes to reach users at their point of need, but how to identify that point of need? Curriculum maps create transparency in how information literacy is being approached throughout the curriculum and opens up avenues of communication that allows for both standardization of information literacy instruction throughout the university as well as a uniquely tailored experience that supports the varying needs, structures and idiosyncrasies of each academic program.

There is a wealth of literature on the subject of curriculum mapping and how it can be used to support information literacy efforts by libraries. This review touches on a few of the most cited works in that area; however, many of the articles on the process described a formal, year or more long process incorporating stakeholders from across campus to identify relevant courses, such as in Charles (2016). Since this mapping took place in an environment where all programs had already done curriculum mapping that included information literacy standards, the task was more one of discovering and collating existing information to bring to decision makers than one of bringing stakeholders together to develop a set of standards.
An example of the more traditional method of curriculum mapping, which includes identifying course progression can be found in the four institutions profiled in Buchanon, Houk, Webb, and Tinglestad (2015), where the librarians had difficulty determining course progression, and in some cases in identifying learning objectives for particular courses. That was not an issue in this case.

In one case, the literature presented the curriculum maps as “teaching maps” in order to highlight the opportunities for teaching information literacy throughout the curriculum (Gessner & Eldermire, 2015). While this idea of naming appealed strongly, in the end, curriculum mapping won out as the term du jour, which more clearly communicated to teaching faculty and administrators how the process fit in to the existing university framework.

Developing Curriculum Maps That Work

In this particular case, the curriculum maps that were produced were planned with a very specific purpose in mind and, as a result, varied a great deal in both structure and content from some of the examples of curriculum maps in the existing literature. A tool not well suited to its purpose is not as useful as one which is, so the design of the curriculum maps was tailored carefully to the purpose that they were intended to be used for. The ultimate goal of this process was to provide a framework for identifying **where** there was a need for information literacy instruction within each of the online programs at the University of West Florida (UWF), demonstrating the need for online instruction to liaison librarians and highlighting the courses where their commitment would pay the most dividends for students, and communicating the specific, tailored types of support that the libraries and librarians could provide for each program to outside stakeholders. While the curriculum mapping could easily be applied to face-to-face as well as online programs, the decision was made to limit the mapping to online only programs for two reasons: first, it kept the project manageable in size; and second, online courses have been historically underrepresented in information literacy efforts at the University, with a focus instead on an online personal librarian program that provided direct contact with online learners outside of their classes. With that in mind, the 22 online only programs were identified. This included 1 doctoral program, 13 masters programs, and 8 undergraduate programs. The curriculum mapping was aided by institutional availability of an academic learning compact (ALC) for each undergraduate program and an academic learning plan (ALP) for each graduate program. These documents are now housed within the University’s office for Accreditation, Strategic Planning, and Institutional Reporting & Effectiveness (ASPIRE), although at the time of the original mapping process, they were maintained by the University’s Center for Teaching and Learning.

The development of the maps was split into three parts: identifying the appropriate program outcomes, identifying the relevant courses, and reviewing syllabi for assignments related to information literacy. Each curriculum map was assembled in a spreadsheet that included the title of the program, a link to the overall ALP or ALC, and two or three program learning outcomes most closely related to information literacy, the courses where those program learning outcomes were assessed, and information from the syllabi of those courses pertaining to assignments that might be related to that assessment. This information was included to allow for
maximum transparency and ease of communication with the subject liaison librarians as well as the academic departments where the programs were housed.

Determining the relevant program outcomes was done primarily by the online outreach librarian in consultation with the subject specialist librarians as necessary. In some cases, it was easy to identify which two program learning outcomes were related to information literacy; for example, the selected program learning outcomes for the master’s in Exceptional Student Education are “Interpret, analyze, and evaluate professional research in the area of exceptional student education to identify relevant evidence-based practices to increase exceptional student achievement” and “Contrast and compare current literature related to problem solving and critical thinking and design instruction that will enable exceptional education students to improve their creative thinking abilities” (University of West Florida, 2015). Both of these focus on current literature and evidence based practice, both areas in which strong instruction in and support of information literacy is essential. In other cases, such as the bachelor’s program in Career and Technical Education, the program learning outcomes were less clearly related to information literacy, and selection was more difficult. In the end, the program learning outcomes most closely identifiable with information literacy were “analyze data gathered from a variety of sources, including formal and informal measures, to develop goals” and “communicate accurately and effectively through the written word”. The first has a clear relationship to information literacy in the analysis of data from a variety of formal and informal sources, but the second is possibly less clear to those without a knowledge of the Association of College and Research Libraries (ACRL) Framework for Information Literacy in Higher Education. However, it is clearly related to the Scholarship as Conversation frame, and as such is highly relevant to the curriculum mapping project. Once the appropriate program outcomes to focus the maps on had been identified, it was time to move on to the next step, of identifying the courses that were focused on those program outcomes.

The identification of the appropriate courses was greatly aided by the academic learning compacts and plans for each program. For the most part, these documents were up to date, although there were some instances were mapping began before the realization was made that the program had changed significantly. Most of the documents were dated, and if the date was older than three years, departments were contacted directly to ensure that the most up to date version of the compact/plan was used. Some of the documents were undated; these departments were also contacted to ensure that the most recent version was being used in the mapping process. Each compact/plan clearly identified which program objectives were mapped by the department to each particular class. These classes were then added to the curriculum maps. The number of courses identified for each program ranged pretty widely- from 2-3 courses per program on the low end to 6-8 courses per program on the high end. The courses identified tended to group themselves at those two extremes- only one program fell into the 4-5 courses range.

Once the courses were clearly identified, the next (and most time-consuming) step was to gather information to aid librarians in their outreach and instruction choices. This information was mainly centered around possible assignments incorporating information literacy in the identified courses, as well as noting any course progression or cohort information on the map to allow librarians to make decisions about properly scaffolding information literacy instruction. This process was more difficult for some programs than for others; in some programs there was a
clear progression of pre-requisites and required classes, while others had less structure. In cases where typical progression was not clear, the academic advisors for that program were contacted to clarify the usual progression.

Once progression had been determined and any important correlations highlighted, the final action was to look at syllabi from the previous two semesters and identify the assignments that might be tied to the information literacy outcomes in the course. This information could be used by librarians both in highlighting the usefulness of information literacy instruction in achieving student learning outcomes in discussions with faculty and administrators as well as pitching specific ideas related to information literacy instruction at both the course and program level. This step did not have a 100% completion rate; some syllabi didn’t include a clear description of the purpose of the assignments, which made it difficult to determine how related they were to the information literacy outcome(s). It is also important to note that there are no “master courses” in use at the university and that the amount of variation in assignments from section to section and instructor to instructor was sometimes fairly marked. Because syllabi are accessible each semester University-wide, only short titles or descriptions of assignments were included, with notes to check the syllabi for more details if desired.

**Using the Maps to Guide Information Literacy Coordination**

Like many academic libraries, the UWF Libraries use a coordinator model for handling information literacy instruction, with activities at the institutional level being tracked and planned by librarians serving as coordinators for subject specialist librarians who serve as department liaisons and handle the majority, if not all, of the instruction for their assigned departments and programs. There are a wealth of challenges and benefits of this model, and the difficulties can be exacerbated when the instruction is taking place in an online environment, since it often requires a familiarity with tools and environments that librarians may not have otherwise encountered, such as the learning management system or video conferencing tools. At UWF there are actually two coordinators, one who handles “traditional” information literacy and first year experience outreach and another who specifically handles outreach to online students and faculty as well as coordination of information literacy efforts to those faculty and students. In order to address these challenges, the online outreach librarian tried to build a robust set of supports to assist her colleagues in facing the challenges. Some of the supports were more successful than others, and in the first year of specifically targeting online programs for embedded instruction, librarians received enough requests to raise concerns about the sustainability of the embedded librarianship model for online information literacy in an environment where subject liaisons were already tasked with face-to-face instruction, collection development, reference desk shifts and research appointments, as well as other functional duties such as interlibrary loan coordination and electronic resources management. The development of the curriculum maps was intended both as a way to open conversations about workload and as a way to work smarter, not harder, and maximize the efficacy of the embedded instruction being provided.

Once the maps were developed, they were distributed to the subject specialist librarians for comment. In some cases, librarians were already embedded in some of the identified courses; in others, there was already a significant embedded presence in the program….but not in the
courses that were identified through the mapping process. In these cases, the maps were reviewed again to see if program outcomes had been misidentified, but ultimately the differences in courses came down to faculty relationships and willingness to establish an embedded presence in a course existing primarily in courses that weren’t identified with the information literacy objectives but still had assignments involving library resources and information literacy concepts. In all cases where a librarian was currently embedded in courses within the program, those courses were either highlighted or added to the map with a note that it was an existing relationship with a particular course/instructor. There were also discussions about the purpose of the map; some subject specialists raised concerns that the maps might become checklists of courses that had to have library instruction or that instructors who came to request embedded instruction for their classes might be turned away. In the end, consensus was reached- while the maps would be used as a tool for communication and development of online instruction outside of the libraries, each subject specialist would need to be deeply involved with and would have ultimate authority over how the embedded presence was developed in their disciplines. One of the advantages of a smaller school (roughly 15,000 FTE) and close relationships with teaching faculty is the ability to respond agilely to the specific needs of a department or instructor, and the maps were intended to provide a starting point for conversations in departments that had historically underutilized instruction, not stifle conversations already in progress or relationships that had already been developed. Even in the midst of these discussions and clarifications, librarian enthusiasm about the maps remained high; they were uniformly seen as an excellent tool for starting conversations with outside faculty stakeholders.

Using the Maps to Build Bridges outside the Libraries

Information literacy instruction for online learners in the past has primarily focused on a suite of video tutorials and comprehensive subject level LibGuides available through the Libraries website. These tools and instruction targeted to the particular time of the semester when the emails are sent, are the pillars underlying the personal librarian program for online learners, which has been highly successful (Ziegler, 2017). However, the success of the personal librarian program does no the preclude the need for focused, embedded instruction at the programmatic level in order to truly ensure that the maximum number of learners are able to learn the concepts and skills that they need to be successful “creators and consumers” (Association of College and Research Libraries, 2015) of information, in line with the aims of the Framework.

The position, which was just over a year old at the time the mapping process began, focused early on the identification of faculty teaching online and offers to design instruction for those courses, but it takes time, effort, and often a demonstration of effectiveness to build the rapport necessary for faculty to make changes to their courses and invite in librarians to engage in embedded information literacy instruction. The curriculum maps provided a clear starting point for discussions with individual departments and administrative stakeholders. Discussing the process at college and university level meetings generated significant interest and opened the door for invitations to departmental meetings to discuss the path forward. Again, because each subject specialist is responsible for their programs and departments, these conversations were driven primarily by the subject specialists. The online outreach librarian provided backup and was willing to attend departmental and other meetings where the maps were being discussed.
Guiding Programmatic Assessment

One of the most exciting opportunities presented by the curriculum maps was the ability to build a programmatic assessment structure that operated at the macro level. Many of the metrics that are currently used to assess the success of information literacy at the institutional level are focused on face to face information literacy instruction: number of classes taught, assessment of those classes, etc. Because a separate focus on online instruction was relatively new to the University, there was no corresponding structure of assessment for the online tools, such as videos and LibGuides which were already in use. Usage of these resources was tracked, but there had been no previous attempts to correlate the usage and marketing of these resources with corresponding changes in usage. While an assessment structure was being built around the online personal librarian program and the creation and usage of online instructional tools, there was no structure for evaluating at a wider programmatic level.

The generation of the curriculum maps produced clear targets for increasing information literacy instruction in underserved programs, and since the maps included notation of classes with previous embedded presence, there was an established baseline for calculating change in time of the embedded presence within the mapped programs. By isolating particular program objectives for focus, it also allowed librarians to build both instruction and assessment that was tailored to that particular outcome.

Ideas for Future Work and Improvements

No process is ever produces results perfectly, and part of process of continuous improvement is the evaluation of success and the identification of improvements that can be made to the process and ways that things can be accomplished more meaningfully and more precisely in future iterations. In this case, there were a number of things that came to light throughout the process which will be instructive for those looking to replicate a similar process. Some are more narrowly defined to the institutional context and might be most relevant to future curriculum mapping projects at the University of West Florida, while others would be valuable to a broader audience.

The first of those improvements is to more fully incorporate the ACRL Framework for Information Literacy for Higher Education into the completed curriculum maps and into the materials that are generated for communication with the departments. The incorporation of the Framework would be beneficial in three ways: framing and connecting the program learning outcomes for the subject liaison librarians, providing a clear structure for programmatic assessment of the Libraries information literacy program across discipline, and taking advantage of an opportunity for engaging with and increasing awareness of the Framework amongst teaching faculty and administrators.

The process of building and defining assessment is still in progress, but the process has made it clear how important it is to have a frank and transparent discussion about the metrics being developed and how they will be evaluated. These discussions build librarian buy-in to the process. One area where this process could have been improved if it had been considered from
the start is using the curriculum maps as an opportunity for shared assessment between departments and the library. In many cases, the departments already had metrics for assessment of the programmatic objectives used in developing the maps, and it would have been helpful to have space for those in the maps, as well as use that as part of the discussions at the departmental level.
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Framework + Digital Badges = Online Instruction for Today

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Abstract
This case study evaluates the process of developing modules for inclusion in a learning management system that are informed by the Association of College and Research Libraries Framework for Information Literacy in Higher Education (2015). A replicable, transparent process was used to match more task-oriented topics suggested by librarians and teaching faculty to the Framework. As more and more students receive instruction online it is important for academic libraries to provide robust services to those users within the LMS as well as outside of it. By providing instruction within the LMS that is tied to the Framework, and by using digital badges to make the exploration of information literacy more obvious to students, instructors, and librarians, libraries can develop instruction that meets users at their point of need and provides content while lowering the need for direct librarian involvement in all online courses.

Online instruction via an institutional learning management system frequently takes the form of modules addressing a specific topic, which can be embedded into a course to address the information literacy needs and issues that are most relevant to that course or assignment. Modules allows for instructors to painlessly and seamlessly incorporate information literacy instruction in to their courses. Modules often represent an excellent trade off of librarian time, as well- librarians can design a module which can easily be adapted and reused for multiple courses and sections, and often even for multiple disciplines. Developing these types of adaptable information literacy modules for online instruction is a popular form of providing instruction in an increasingly online centered higher education environment.

When designing these types of information literacy modules today, it behooves librarians to take in to account the Framework for Information Literacy in Higher Education (Association of College and Research Libraries, 2015). The Framework delivers on its name, providing a way of structuring and understanding the modules that not only simplifies instruction but can also enhance and clarify the learner experience.

Designing modules for inclusion in the learning management system is a process that has been well documented in the professional literature. One of the earliest examples of the call for “presenting information literacy content in a way that can be easily integrated into the LMS” (Jackson, 2007, p. 458) occurred in the context of advocating for better overall librarian presence in the LMS. In recent years, particularly with the advent of learning management systems such as Canvas, which allow for sharing of modules within institutions and between institutions, this
type of module development has proven effective as a use of resources (librarian time and effort). The impact on student achievement, well less well documented, is also covered in the literature. The earlier documentation of how this process is best approached was integral to designing a process for developing the modules. These pieces of literature were approached in conjunction with the work of Lindsay O’Neill of California State University, Fullerton, whose work on modules, digital badging and their incorporation of the Framework has proceeded, paralleled, and informed this project.

**Taking Advantage of Circumstances**

The genesis of this project was based on a happy confluence of circumstances. The first was that the online instruction program at the University of West Florida (UWF) was undergoing a strategic rethinking and realignment with the development of a librarian position to handle online outreach and instruction in 2016. The second was the beginning of the planning process for the transition from the current learning system, D2L Brightspace, to Canvas by Instructure. An extended time of transition was planned from the outset, with the process beginning in late 2016 with expected go live of the Canvas LMS in Fall 2018. The third was the process of evaluation and incorporation of the Association of College and Research Libraries (ACRL) Framework for Information Literacy in Higher Education into the information literacy program at the university. These three circumstances combined fortuitously to allow for the generation of an idea at the same time when there was an ample period of time in which to plan a project and begin its development in time for the Fall 2018 go live period, so that the modules could be marketed and included from the ground up in communications with teaching faculty about the new LMS.

As the campus moved forward with planning for the transition to the Canvas LMS, the librarians began meeting to discuss the Framework and its implications for instruction at UWF. These meetings were headed by then instruction librarian, Britt McGowan, who used modified jigsaw style discussions to increase librarian interaction and engagement with the material. Librarians worked singly or in pairs to explain each of the 6 frames. During this process, there was a broad and wide ranging analysis of how instruction at the university as a whole fit in to the Framework; these discussions formed the basis of the original plan for how to structure the modules. However, this original plan was later subsumed by a more collaborative design process, which is discussed in detail below.

**Why Digital Badges?**

Digital badges are micro-credentials issued to show competency in a particular area. The decision to design modules in conjunction with a digital badge system was made early on in the process. The three main reasons that the decision was made to design the modules in conjunction with a structure for issuing digital badges for their completion were the impact of digital badges on retention, the appeal of digital badges as a way of displaying a skill portfolio to potential employers, and as a way of assessing the success of the outcomes at both an individual and programmatic level.
The impact of digital badges on retention has been studied in numerous venues; a literature review by Mah (2016) showed robust support for the impact of digital badges on student retention. Retention is an incredibly important metric in Florida, where it is used in the funding formula applied by the Florida Board of Regents to determine the funding levels for universities who are part of the State University System. Mah groups studies supporting the use of digital badging in higher education into five primary areas of usefulness: motivation, tool to “recognize and verify learning” (p. 293), “signal achievements to relevant stakeholders such as university teachers or potential employers” (p. 294), “support learners in capturing and planning their learning paths” (p. 294), and enhancing retention. These benefits were the ones at the forefront in making the decision to not only align the modules to the Framework, but to include a digital badging system as well.

**Formulating the Design Process**

As the original design for the modules and badges was taking place, the author of this paper attended Lindsey O’Neill’s (2017) presentation on her digital badging project, also based on the Framework. O’Neill’s presentation was a wealth of information, but one of the most interesting details about how she designed the structure for her own project, Spark Tutorials, was the use of a card sort process, presented in a video (O’Neill, 2015). While the project that the card sort was in aid of was specifically looking at learning outcomes for first year information literacy instruction, the card sort concept seemed particularly well suited to bringing in feedback from all librarians at the University and helping to shake off any structures that might have been imposed from working off of existing documentation or resources.

There were two primary concerns with using a card sort for this process: the first was that it was difficult for the librarian at UWF’s Emerald Coast campus, located 40 miles away from the main campus in Pensacola and with staffing issues leaving him with little flexibility, to travel over solely for a card sort exercise. It was imperative to a collaborative process that his thoughts be included. The second concern was the possibility of a group think mentality developing if all of the librarians worked on the card sort as a group; the process needed to privilege all librarians’ thoughts and inputs equally. Since one of the aims of re-designing the original design was not to constrain the process, the more independence of viewpoint and expression that each librarian could have, the better. Luckily, solving the first problem led to a way to ameliorate the second. In order to allow the Emerald Coast campus librarian to participate, Trello, a web-based project management platform, was used to do a virtual card sort. Rather than have all of the librarians participate in a group card sort, each librarian could be given a Trello board of their own in which to perform a card sort. With these wrinkles addressed, it was time to move from designing the process to designing the structure for the badges and modules.

**Deciding What to Include**

The design process began with a meeting to identify the topics, outcomes and skills that should be included in the modules. During this meeting a list of 123 topics, outcomes, and skills was developed. This list was generated in a no holds barred brainstorming session that included all librarians. There was no editing of the generation process; if a duplicate idea was suggested, it was included. If an idea seemed like an alternate of a previous suggestion, it was included.
Librarians were told to keep all students, from first time in college undergraduates to doctoral students, in mind while brainstorming. Prompts to continue idea generation when it slowed included pictures of the overlapping frames of the Framework, bits and pieces from the various earlier presentations on the Framework by the librarians, the services and tutorials pages of the library website, and discussions of issues in face to face information literacy instruction.

Once this list was generated, librarians were each given their own Trello board pre-loaded with the 123 topics, one on each card. They were also told to feel free to add cards if additional ideas, outcomes, topics, or skills occurred to them while they were organizing the existing cards. Trello allows users to sort cards onto different lists, so users were told to make lists and drag and drop the cards onto them in order to organize the skills/topics in the way that made the most sense to them. The results were incredibly varied; the number of lists created on each librarians Trello board ranged from 6 to 17. In most cases, the boards were designed with the lists serving as the grouping for the module and possible badge to be assigned, while in others a list might include several groupings intended to be badges.

The types and names of badge structures generated were also interesting. One librarian stuck strictly to the Framework, using the names of the frames as the names for the badges in her proposed groupings. There were some names of badges that fell into similar categories: “Getting started” and “Library 101” both had similar names and similar module groupings, for example. Several librarians also grouped things roughly equivalent to the topics covered in the existing video tutorials, a mainstay of UWF’s information literacy program. Some librarians were left with leftover concepts/skills, which ended up in badges named “No Clue” and “I don’t use these-should I?” Proof that even amongst information professionals, not all skills that can be grouped under information literacy truly have a home. It was interesting to note that there was zero crossover of the concepts/skills that fell into these irresolute categories- in some cases because the topic/concepts were more applicable to fields outside of that subject specialist purview, and in others because they were problems/issues encountered in general education courses but by only one or two librarians.

All of the varying structures and names presented by the subject liaison librarians were evaluated by the online outreach librarian for crossover and duplication. In the end, there was one particular librarian who presented a framework that not only closely replicated the Framework (with more student friendly nomenclature) but also mirrored the general structure presented by the other librarians while keeping the badges fairly streamlined. This became the new overall structure, with the inclusion of two badges suggested by other librarians in their card sorts. This structure is notable primarily in its alignment to the Framework.

**Aligning Ideas to the Framework**

The structure that was eventually selected aligned very closely to the Framework, without using its more academic nomenclature. The primary badges identified in the selected structure were as follows:

- Planning your research
- Doing your search
- Evaluating information resources
- Databases in depth
- Doing graduate level and professional research
- Library services
- Putting it all together: Your assignment

While the names listed may not give a clear picture of how the overall structure aligns to the framework, the topics and skills listed below match eerily closely with the clean sort of the ideas into the Framework:

- Planning your research: Research as Inquiry & Information Creation as a Process
- Doing your search: Searching as Strategic Exploration
- Evaluating information resources: Authority isConstructed and Contextual
- Databases in depth: Research as Inquiry
- Doing graduate level and professional research: Scholarship as Conversation
- Library services: Information Has Value
- Putting it all together- completing your assignment: Scholarship as Conversation & Information Creation as a Process

In addition to these Framework oriented badges, three other badge areas were added. The first is entitled Academic Integrity and covers how to avoid plagiarism and the importance of academic integrity, along with citation basics in each of the major styles. This module sets exists as a sub-module in several areas but is assigned by a wide variety of face to face and online classes in its current incarnation as tutorial videos and multiple choice tests- this mainstay of information literacy needs to be presented individually for continuity with the current information literacy program.

The other two badges have also been created as a way to isolate skills that are highly valuable to both instructors or to outside stakeholders. The one that will possibly be highly valuable to instructors is a badge entitled “Top 5 Things Every Researcher Should Know” which covers five modules including OneSearch (the libraries discovery service), how to find a scholarly article, Library vs. Google, keyword searching vs. natural language searching, and how to find a book. For how to find a book, the module will actually allow students to choose their “path”- local or distance student, in order to follow the two processes more specifically. The last
of the three non-Framework modules is oriented towards an appearance on social media job seeker platforms such as LinkedIn, as a demonstration of a valuable skill to possible employers. This is the “Google for Good” badge, which covers Google Scholar, Google hacks, and a module on “using Wikipedia for good and not evil”.

**Plans for Module & Badge Development**

The actual creation of the modules and badges will happen in Spring 2018, when the online outreach librarian has a professional development leave specifically targeted at developing these modules and badges. A number of the modules will utilize tutorial videos that were previously developed, along with multiple-choice assessments, as part of a grant-funded project to support online information literacy at the University of West Florida. Those tutorial videos can be found on the Libraries website. Other portions of the modules will be developed primarily using Articulate Storyline. Some of the tutorials that are more focused on a specific database may utilize LibWizard in order to take advantage of its ability to present a live website for learner use. However, the preference in design will likely default toward software like Articulate Storyline, which allows for integration directly with the gradebook in Canvas, and vastly simplifies the badging process.
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