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Impacting Website Visitor Engagement Through Information Provision

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Impacting Website Visitor Engagement

Through Information Provision

DISSERTATION

A dissertation submitted in partial fulfillment of the
Requirements for the degree of Doctor of Education in the
College of Education
At the University of Kentucky

By
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2022

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Abstract of Dissertation

IMPACTING WEBSITE VISITOR ENGAGEMENT

THROUGH INFORMATION PROVISION

Enrollment in library science programs has been on a downward trend for several years (Association for Library and Information Science Education, n.d.). At the School of Information Science in the College of Communication and Information at the University of Kentucky, enrollment in the online library science master's program dropped 28% from 2012 to 2018. With a student population in fall 2018 of 177 and a targeted enrollment (set by program faculty) of 240, the program administration has been exploring ways to recruit more students without further stressing the resources available to the School. The Director and Assistant Director of the School seek ways to make current recruiting programs more efficient. One specific method, online recruitment, was identified as a promising approach to help grow enrollment without the need for additional resources.

KEYWORDS: information provision, website conversions, online masters' programs

Will Buntin

April 27, 2021

IMPACTING WEBSITE VISITOR ENGAGEMENT

THROUGH INFORMATION PROVISION

By

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4/27/2022
Date

Dedication

To Mickey Sexton who has always supported and encouraged me.
This dissertation is merely the most recent example.

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Chapter 1: Leadership Context, Leadership Dilemma, and Supporting Literature

Introduction

Enrollment in library science programs has been on a downward trend for several years (Association for Library and Information Science Education, n.d.). At the School of Information Science in the College of Communication and Information at the University of Kentucky, enrollment in the online library science master's program dropped 28% from 2012 to 2018. With a student population in fall 2018 of 177 and a targeted enrollment (set by program faculty) of 240, the program administration has been exploring ways to recruit more students without further stressing the resources available to the School. The Director and Assistant Director of the School seek ways to make current recruiting programs more efficient. One specific method, online recruitment, was identified as a promising approach to help grow enrollment without the need for additional resources. The program currently spends several thousand dollars annually on student recruiting, including direct mail, recruitment at selected national and regional conferences, and online advertising. Online advertising, which currently accounts for more than half of that expense, reaches thousands of people a month. The main goal of advertising online is to gain conversions, defined as occurring when a visitor completes a desired action on your website (Bhasin, 2018; Heijmans, 2017; Storm, 2020). Note that it is up to the website owner to define what the desired action is. In this study, a conversion is achieved when a visitor submits either one of two forms, a form to be added to a prospective student newsletter or a form to attend an online information session. For the School of Information Science, a modest increase in conversion rates could yield

significantly more recruiting leads with no additional human or financial cost to the School.

Table 1

Enrollment in Library Science Program at UK

Year	2012	2013	2014	2015	2016	2017	2018
Enrollment during the fall semester	245	239	201	209	218	197	177

Study Context

This study took place in the School of Information Science housed in the College of Communication and Information at the University of Kentucky. The School of Information Science offers an undergraduate and graduate degree in information communication technology and a graduate degree in library science. This study focuses specifically on the library science master's program, which is delivered entirely online. Undergraduate courses in library science were first offered at the University in 1911, with the inception of a graduate program in 1949. Distance learning courses, using both video-based and site-based instruction on the University of Louisville and Northern Kentucky University campuses, were launched in 1973. Online courses began in 1999, with the degree being available completely online beginning in 2009 (University of Kentucky School of Information Science, 2019).

During my time at the School, it has grown from one master's degree in library science to an undergraduate minor, an undergraduate major, and a second master's degree. While expanding the number of degrees has helped anchor the School itself more broadly across the University, its core program remains the master’s in library science.

Stakeholders

While this problem impacts several groups, including current employees and students, the primary stakeholders in this study are the School's Director and the School's Assistant Director. Both the Director and Assistant Director have direct responsibility for student recruitment and they both regularly manage recruitment-related activities. Other groups directly impacted by this study include current program faculty and program students. Sustained enrollment is critical to maintaining current resource levels. Increased enrollment can help faculty by adding additional lines that will allow service duties, such as serving on committees, to be divided across a larger number of individuals.

Researcher Role

During my professional career, I have been responsible for marketing, customer service, managing corporate databases, managing an organization’s online presence through web sites and social media, and online advertising, using primarily Google Ads. Specifically, I have over 20 years of experience working with and managing web sites and 18 years of managing online advertising using Google Ads for two different organizations. In 2004, I graduated from the School of Library and Information Science, as it was then called, with a master's in library science. In 2006, I began working for the School as the Student Affairs Officer, providing support to students and program applicants. From the beginning, managing the School's website was part of my responsibilities. Gradually, my role expanded into marketing and online advertising for the library science program. In 2011, I became Assistant Director, reporting to the School's Director. In this role, I oversee student recruitment, enrollment management, as well as all marketing activities, including print and online advertising, and our School's

website. My duties encompass all programs in the School, even though this study focuses on the library science program.

I oversee five staff, including a business officer, two student affairs officers, a technology support position, and a marketing and communications specialist. One of my jobs is to leverage our available resources to maximize our organizational goals regarding enrollment management. Before 2017, maintaining and even growing enrollment in the library science program was routine: the School ran ads on Google Ads, attended various conferences and graduate school fairs, and operated a direct mail program. These activities coincided with a general increase in program enrollment. In fact, from fall 2008 to fall 2012, program enrollment increased by 21%. While the program did have occasional enrollment fluctuations, it generally maintained enrollment levels over 200. That changed in fall 2017 when enrollment decreased to less than 200. In fall 2018, enrollment reached a ten-year low.

In this study, I have the role of researcher and stakeholder. I am intimately aware of the library science program's enrollment situation, current School recruitment activities, and national trends. I have many years of professional experience with marketing, online advertising, and web site management. Over time, I have developed my own biases and best practices. It will be important that these be acknowledged and set aside during this study when examining the data. I will report out what the data demonstrates and not my current assumptions.

Diagnosis Phase: Problem of Practice

Overall Study Design

This study used a multistrand mixed action research (MMAR) method study design (Ivankova, 2015) consisting of a concurrent quantitative plus qualitative design in phase one (reconnaissance) followed by a quantitative strand in phase two (evaluation). Regarding the mixed method action research (MMAR) approach, Ivankova argues that it "seeks to provide comprehensive answers to study research questions, whereas action research seeks to provide comprehensive solutions to practical problems" (2015, p. 52). The MMAR approach is cyclical, consisting of six steps: diagnosing, reconnaissance, planning, acting, evaluation, and monitoring. Researchers may move sequentially, as in the order noted above, or they may skip a step or two during its cyclical repetition. In this study the "multistrand MMAR design is reflective of a longitudinal and interactive nature of action research allowing for generating evidence from multiple differently sequenced quantitative and qualitative study strands within an overall action research project framework" (Ivankova, 2015, p. 148).

Diagnosis Phase

During the diagnosis phase of an MMAR study the researcher identifies a specific problem that will be addressed, which in turn determines the focus of the study and drives the development of the research problem statement. This study's diagnosis phase began in 2012 as enrollment in the library science program began to decline. As enrollment continued to decline annually, the Director and Assistant Director began to wonder what was causing the decline and what, if anything, could be done to reverse the trend. The Association for Library and Information Science Education (ALISE) released data

suggesting that the decline in enrollment was not unique to the University of Kentucky and was occurring across the board at ALA accredited programs. The Director and Assistant Director had regular conversations about enrollment, both locally and nationally. Additionally, informal conversations occurred between either the Director or Assistant Director at UK and their counterparts at other ALA accredited programs. Some programs reported losing as much as 50% of the library science population. This data led to the conclusion that enrollment was declining nationally, and the program would need to address its own recruitment practices to reverse the decline.

Organizational Analysis

Enrollment and Resources

From 2006-2016 enrollment across all American Library Association (ALA) accredited programs declined 14% (Association for Library and Information Science Education, n.d.). At the same time, there has been a 9% increase in the number of ALA-accredited programs. This environment results in more library science programs recruiting from a decreasing population of prospective students. This external pressure is one reason the School of Information Science at UK finds itself struggling to maintain its stated enrollment goal of 240 students. The School's leadership would like to optimize student recruitment methods as much as possible.

Concomitant with the enrollment decline, it has become more difficult for the School to obtain additional financial and human resources for the library science program. For example, when, over the past few years, faculty left the department, the open position would not automatically accrue to the School; the Director has had to make a case to the College Dean to replace those faculty. In some cases, the School has only

been allowed to fill an empty faculty line if the position description accounted for teaching across programs in the School or if the position was changed from a tenure-track position to a lecturer position with staff duties. The result has been an overall decrease in the number of full-time tenured/tenure track faculty whose primary focus is library science.

With the loss of full-time tenure track faculty lines devoted solely to library science, the program's operation has become more difficult. For example, with fewer full-time faculty available, more part-time instructors are necessary to offer the number of courses required by the current enrollment. Managing more employees adds personnel management and financial costs to the School. Additionally, fewer tenured/tenure track faculty members mean existing faculty much carry a higher advising load and spend more time conducting program service by way of committee work. This then decreases the amount of time faculty have available for research, essential at a university with very high research activity, especially when tenure/tenure-track faculty are expected to spend 50% of their time on research. If the program can increase its enrollment, our School Director will have a more convincing argument in recouping some of the lost faculty effort dedicated to library science. That should allow for decreasing reliance on part-time instructors and enable the faculty service load to be spread out across more individuals, reducing the amount of time a faculty member must spend in that area.

Considering Avenues to Increase Enrollment

In the wake of declining program enrollments, the following question arose: what can we do to regain lost enrollment? Currently, the School's budget must underwrite all financial and human resources devoted to student recruitment, including staff attendance

at various regional, national, and international conferences[1], a direct mail program, email marketing, and online marketing (primarily through Google Ads). Given the School's limited financial and human resources, the leadership within the School wonders how we might increase the efficiency of current recruitment activities to yield an increase in prospective students.

In the fall of 2017, the School sponsored a speaker, Austin Knight, from Hubspot, a software firm focused on improving inbound marketing and sales strategies for small to medium entrepreneurial and commercial enterprises. As an enterprise that themselves must attract customers through online marketing, Knight discussed Hubspot's practice of live website testing. At Hubspot, real-time website visitor actions influence website design decisions, such as deciding which graphics appear on Hubspot's website. Furthermore, Hubspot's teams examine, in real time, how particular verbiage on their website elicits specific responses from a visitor, such as making a purchase, asking for more information, or requesting an appointment (Knight, 2017).

The intersection of our School's need to increase the effectiveness of its recruitment methods, paired with Austin Knight's presentation, led me to wonder what kind of changes we could make to the School's website to recruit prospective students better. After Knight's presentation, I had several informal conversations with other higher education professionals, including people responsible for enrollment management and others responsible for digital marketing for a university. Those conversations centered around digital student recruitment in higher education and were more broad, general discussions instead of focusing on library science or even graduate students specifically.

[1] The Virginia Library Association and the annual iSchool convention are two such events.

Several issues were raised, including comprehensive tracking of visitors and their behavior, quantifying a return on investment (ROI), and reaching a potential audience at the right time, in the right way, and with the correct information or message. Obtaining *conversions* (in the School's context, obtaining a prospective student's contact information) was generally recognized as the goal. There are two reasons for this. One, gaining a conversion gives the School valuable contact information of individuals who have actively expressed an interest in our program. Second, it does allow for a simple ROI measurement which is cost per lead generated. The question remaining for the School was how we might gain more conversions while keeping my advertising budget the same.

Research Problem Statement

The School of Information Science at the University of Kentucky has a practical problem of reduced enrollment in the master's program for library and information science. Reduced program resources have accompanied decreasing enrollment. For example, as library science faculty positions have come open, the School has been asked to hire faculty who can teach across all School programs, leading to a reduction in full-time-equivalent faculty devoted to the library science program. This has created an increased reliance on part-time faculty for course instruction and an increased burden on existing faculty to maintain shared governance (i.e., faculty have served on several programs and School committees in the same calendar year). The School's administration is searching for more efficient recruitment strategies to increase enrollment. School of Information Science administrators believe that if enrollment can be improved, then they

will be able to make a case to hire additional faculty who will devote 100% of their effort specifically to the library science program.

Literature Informing Study Plan

At the beginning of 2019, I discovered an article by Dvir and Gafney (2018), on the relationship between *information provision* and the likelihood a visitor to a website *converts.* In this context, information provision is defined as the amount of information made available to the visitor at the point of asking for a conversion. Given my background in library and information science and experience working at the intersection of web publishing and online advertising, the idea of manipulating information provision and measuring visitor conversion behavior could yield useful data to improve the School's online recruitment methods.

I then decided a study examining the relationship of information provision to conversion rates on the library science program's website could provide practical insights and potential solutions to the School's problem of decreasing enrollment. In this study, a *conversion* is when a website visitor provides personal contact information (e.g., name, email address) thereby signing up to receive more library science program via an email newsletter. This provides the School with a reliable list of individuals interested in our graduate program, allowing us to market directly to them. Anecdotally, the School has often heard from enrolled students that one reason they chose our library science program was the level of personal contact our program provides during the prospective student's information-gathering phase. Thus, if we can widen the group of people to whom we can provide that service, we could increase our enrollment numbers. If manipulating the information provision on a landing page can yield a higher number of conversions, this

would provide the School with a simple solution without requiring additional financial or human resources.

Having decided to focus on Internet-based recruitment, I examined the literature to guide me on how best to approach this medium. DeLone and McLean's (1992) developed a model to identify dependent variables in information systems research. They identified several dependent variables including system quality, information quality, and individual impact. Their model represents an interdependent system for success in information systems, summarized in Figure 1. The figure shows a direct path from Information Quality to User Satisfaction, ending with Net Benefits. The present MMAR study will center on the area of "Information Quality," specifically focusing on information provision, and how it impacts "Intention to Use" and "User Satisfaction", and how this translates to possible "Net Benefits". "Intention to Use" and "User Satisfaction" will be measured by resulting website conversions. "Net Benefits" represents the potential increase in conversions. "System and Service Quality" fall out of the scope of this study.

Figure 1

DeLone & McLean's Information Systems Success Model

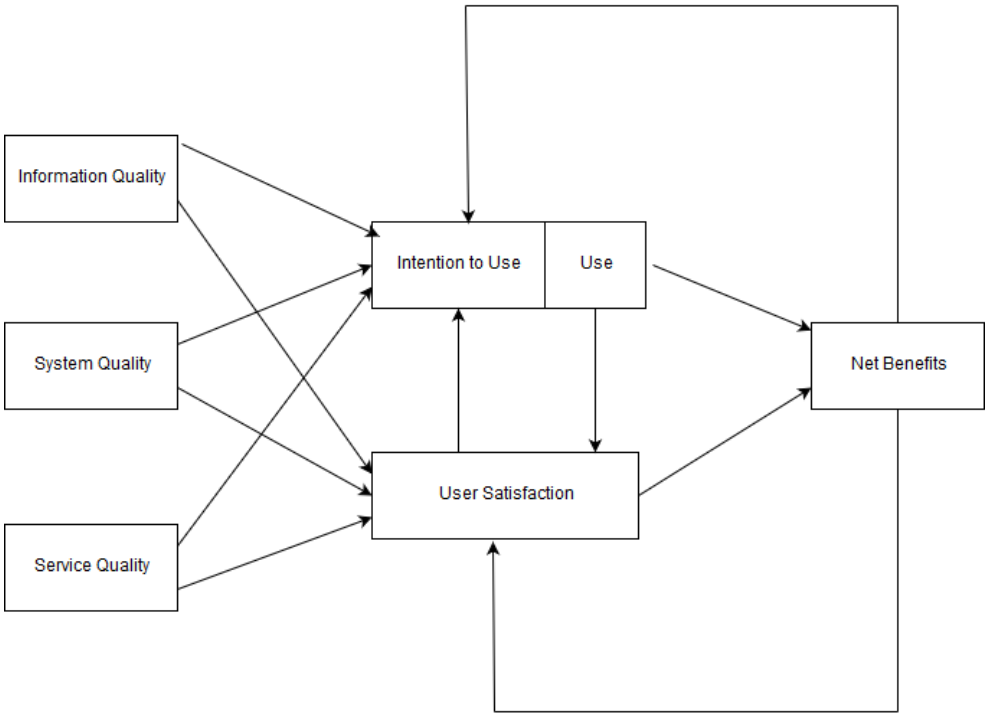


Figure 1.Adapted from DeLone and McLean (1992).

After the publication of the Information Systems Success Model (DeLone & McLean, 2003), new research extended the Model by examining whether information provision impacts website visitor interaction, specifically the component of information quality (Dvir & Gafni, 2018). Dvir and Gafni theorized the amount of information available to a website visitor encourages those visitors to submit personal data via a web form (i.e., convert).

To test their theory, Dvir and Gafni (2018) conducted an A/B test using two different landing pages. A landing page "is a page on your website where you can offer a resource from your business in exchange for a visitor's contact information" (Mirman,

n.d.). The researchers created ads and landing pages for claimfame.com, "a marketplace that connected content creators with talent on a broad range of media projects" (Dvir & Gafni, 2018, p. 26). People who clicked an online ad were randomly directed to one of two pages, Version A, with more words, characters, and lines, versus Version B, which had fewer words, characters, and lines.

The researchers discovered a landing page with less information had a significantly higher conversion rate than the page with more information. This finding is interesting because previous literature (Lee & Turban, 2001; Lim et al., 2006) theorized that a landing page with more information would reduce users' sense of risk and uncertainty and thus encourage conversions. However, Dvir and Gafni's (2018) research argues that less information leads to higher conversion because users experience reduced information overload and thus a decreased need to exert effort and attention on a website. These findings are in line with previous research (Becker et al., 2009; Fogg et al., 2003). Findings by Fogg et al (2003) serve as a general guide for this study's reconnaissance phase by surveying users, having them compare similar web pages, and provide written feedback. Becker et al. (2009) speak more to the overall project – examining different landing pages and the subsequent decisions users make. Their work categorizes landing pages into one of a number of categories and attempts to correlate conversion rate with their defined categories. This helped me conceptualize the action I used in my evaluation phase. Additionally, their categories helped me abstract out my problem so that I could think about the issue in bigger terms. For example, thinking of the landing page as a 'recruitment page' (my category), helped me focus on the specific purposes that page serves, i.e., generating conversions.

There are some limitations to Dvir and Gafni's work (2018). Because they conducted a behavioral study that only looked at specific actions users took, they could not determine why users acted as they did. Instead, their study only measured a particular behavior within a particular environment. Additionally, their study only considered quantitative data. There were no data collected involving the users' perceptions, or reasons for why they chose to interact or not with a website. For example, Fogg et. Al. (2003), Lee and Turban (2001), and Kim et al (2006) all have research examining what role trust might play in a web site visitors' behavior. Perhaps there are other issues at play, rather than just the amount of text, which influence whether a visitor converts.

Typology of Website Content

Huizingh (2000) developed a typology for website content, classifying it into commercial, non-commercial, and product categories. Commercial information deals with the organization itself, providing background information, organizational goals, and other information to introduce the organization to website visitors. Non-commercial information relates to organization goals but might focus on events, location, or additional related information. Product information is information about a product or products offered by an organization, including actual goods, like books, or services, like a master's degree. Using Huizingh's (2000) definitions, information about the School of Information Science library science program, including faculty, vision, mission, and goals, falls under commercial information. Such information provides legitimacy to other items on the website, such as program information or sign-up pages for the visitor to receive additional information.

Non-commercial information plays a different role. It helps to round out a visitor's perception of the organization. For instance, users might see information on our website that talks about events or faculty interests that provide additional context for the organization while not directly about the organization. In seeing that, the user might make a decision that they are (or are not) interested in learning more about the organization. The last piece is product information, or information about the degree. This information directly tells the visitor information about the degree itself: how many hours are required for a degree or whether the courses are offered face to face or online. The information available on both the current web page and the test web page can be categorized into these three categories. These types of data will be tracked to see if any further insights can be gained.

User Experience

User experience (UX) literature provides a useful additional lens to inform how I will proceed with my study. While this study is not designed to examine the complete range of UX variables, which might include motivation, color scheme, graphical design layout, the impact of information provision does fall under the broader umbrella of UX research. In UX research, it is not enough to measure changes in visitor behaviors. Instead, researchers want to understand the why of a visitor's action. This need underscores the importance of qualitative research (*Choosing the Right UX Research Method - UX Mastery*, n.d.; *User Research Basics*, 2013; Dalvi, 2016; Experience, n.d.; Mortensen, n.d.; Philips, 2020; Ratcliff, 2018). As stated previously, the Dvir and Gafney study only considered behavioral questions, i.e., "what did people click on?" and "did they convert or not?" Their work suggests a possible relationship between information

provision and conversion rates, but without knowing why certain behaviors took place, there can be no causality claim. To this end, I will be gathering and analyzing qualitative data during the reconnaissance and evaluation periods of my research study. This data will be gathered via open-ended survey questions during the reconnaissance.

Context for Potential Interventions

Why does the library science program spend so much money on online recruitment of prospective students? There are several reasons.

- Online recruitment allows the School to reach potential students from across the country. Since the program is a fully online program, it can recruit students from anywhere in the United States[2]. Online advertising allows the program to reach students from as far away as Alaska and as nearby as Ohio at the same cost. Currently, ads run in all 50 states though, at various times, the program has targeted advertising to specific areas. For example, one-time advertising was focused only on those states that did not have an ALA-accredited program.
- Online recruitment allows for the greatest reach. In the calendar year 2019, Google Ads provided the program with 2.74 million views and over 50,000 clicks on our advertisements. There is no other feasible way for the program to reach that many people.
- Online recruitment allows the program to target individuals who self-identify as being interested in library or information science. Put very simply, Google Ads allows the program to target people online who have conducted specific searches

[2] Due to various rules and regulations the School of Information Science cannot recruit for specific programs in particular states due to licensing issues.

by bidding on those terms. For example, the program chooses to 'buy' the search phrase "online library science degree" so that our listing may appear to the searcher. Additionally, the program can bid on more specific search terms like "health information" which is a specialty the School is recognized for.

In addition to the reasons above, the fact is that most Americans are online. According to the Pew Research Center, 88% of Americans are online, and 73% have broadband at home (Smith, 2017). Furthermore, Internet usage increases significantly when reviewing reported results from specific age groups. For ages 18-29, 100% of those participating in the survey reported using the Internet, and another 97% of users aged 30-49 (*Internet Use by Age*, 2017). These two age groups represent 94% of the current population of library and information science students. Knowing that 94% of our students are aged 18-49, it stands to reason that using online recruitment techniques should reach these targeted age groups. Given this effort requires no additional resources, the literature indicates most of our current students (and most likely prospective students) are online and considering the findings of Dvir and Gafney (2018), this study will focus on whether changes in information provision on our website could impact School website visitor behavior.

This literature suggests several things: users decide whether they like a particular web site too quickly (Lindgaard et al., 2006), the information provided needs to match the user's expected information need (Teoh et al., 2013; van Birgelen et al., 2008; Williamson et al., 2003), information provision is an essential factor in shaping visitor's perceptions (Teoh et al., 2013), and having a favorable impression of the organization or business is crucial (van Birgelen et al., 2008; Williamson et al., 2003). Moreover,

information is essential to shaping a visitor's perceptions of a web site. In one study (Fogg et al., 2003), three aspects of information (focus, usefulness, and accuracy) made up three of the top six (out of eighteen) attributes when users talked about how they go about determining the credibility of a web site.

Potential Solutions

There are several possible solutions to this problem, including increased online advertising, increased direct mail, and attending more state and regional recruitment fairs. However, these solutions are not feasible because they require resources, financial and human, that the School does not have. Since expanding recruiting efforts is not possible, administrators have been looking for ways to gain greater efficiency within the current recruitment strategies to increase the number of prospective students without increasing the need for human or financial resources. As the program currently spends several thousand dollars a year in online advertising through Google Ads, a small increase in efficiency could increase the pool of prospective new students for the program while maintaining current expenditures. From the Austin Knight lecture in 2017 and the Dvir and Gafney (2018) article, I believe that exploring the impact of information provision on the website could provide the School with data to help improve current conversion rates at no additional cost in terms of human or financial resources.

General Study Plan

The purpose of this multistrand mixed-methods action research study is to understand how information provision might increase the efficiency of the UK library science online program recruitment methods. I gathered data on current program students using a concurrent quantitative + qualitative study design during the reconnaissance

phase. Data was collected on how the program's students perceive information provision and their perceptions of how it might affect their behavior, specifically measuring whether they would request additional information.

This study provided the School administration with data to inform decisions made about the School website, specifically the landing page[3] tied to our online advertising. I collected data to help better understand the interplay, if any, between information provision and conversion rates. This study's primary beneficiary is the Library and Information Science program in the School of Information Science at the University of Kentucky. Even if the specific data gathered are not applicable to outside organizations, the study structure may help inform other programs and provide them with a basic framework on which to build their studies examining their online recruitment efficiency

Ethical Considerations

For this study, no personal data will be requested or used. All quantitative and qualitative data collected will be anonymous. All aspects of this study related to data collection and the ethical treatment of human subjects was submitted to the University of Kentucky's Institutional Review Board (IRB). Approval from IRB was granted before the commencement of data collection. The web site log data was examined in aggregate without IP addresses. While an IP address does not contain any personally identifying information, it might reveal a user's internet service provider, or possibly city location for the visitor, it. Survey data was collected anonymously and not connected to any individual user. All human survey subjects who participated in data collection acknowledged receipt of an informed consent letter and agreed to participate before

[3] Landing page refers to the target URL that a visitor is taken to after clicking on an online ad.

submitting any data. Anyone who participated in the study survey was informed of the study's scope and how data will be handled. In the evaluation phase of the study, data on the click-through rates and conversion rates of anonymous users was collected. These data were collected in a way that no user identifiable information is known to the researcher.

Definitions

I include this section to help orient the reader to some of the terms that may be less familiar, specifically words that mostly apply to web site content and analytics. These definitions are specific to this document.

Bounce Rate: This percentage refers to the proportion of web site traffic that leaves a site after viewing one page.

Click: A click is when a user uses their mouse or other pointing device to 'click' on a Google Ad. This results in a charge to the owner of the ad.

Conversion: A conversion refers to when a web site visitor performs some preferred action on a web site. For different sites, this may be different things such as clicking a specific link, purchasing a product, or some other action. For this study, conversion refers to a web form being submitted on the web site. This web form asks the user to supply their name and address and in return they will receive additional information about the library and information science program at UK.

Google Ads: Google Ads is paid service that will deliver a user's ads to people visiting web pages. This can happen two different ways: contextual ads and search ads.

Google Analytics: Google Analytics is a free service provided by Google to web site managers. This allows web site managers to collect anonymous data regarding traffic

on a web site. Examples of data that can be retrieved through Google Analytics includes number of visitors, how many times a particular page was visited, or how users found the web site.

Impression: An impression is anytime an ad (from Google Ads in this study) is viewed by a user. There is no charge for an impression.

Information Provision: In this study, information provision refers to the text that is included on the landing page.

Landing Page: A landing page is the page delivered to a user once they have clicked an ad.

Pages/Session: This number reflects the number of pages viewed by visitors on average.

Search ads: These ads are purchased by a user using Google Ads. The user specifies search terms and how much the user is willing to pay for a click on one of their ads that results from that search term. For example, if you purchase "library and information science online degree", you might say you are willing to pay $1.00 for each click that it receives. When a user enters the search phrase on the Google search engine, Google will examine all the bids they have for that term, remaining budget for each bid ad, and then display a series of ads to the user.

Time on Page: This number shows how long, on average, a user stayed on a particular web site.

Summary

In chapter one, I introduced my mixed methods research problem. A declining enrollment in an online library science master's program was detailed along with one

solution focused on increasing online student recruitment efficiency. I reviewed organizational data, held conversations with colleagues, and reviewed literature to identify the problem and explore options for addressing the issue. The chapter identified two key moments – my attendance of a lecture by Austin Knight and my discovery of the article "When Less is More: Empirical Study of the Relation Between Consumer Behavior and Information Provision on Commercial Landing Pages" by Dvir and Gafni (2018). I introduced the diagnostic phase in which explained how I arrived at the specific problem being addressed in my study. Finally, I examined the ethical considerations for my study.

Chapter 2: Reconnaissance

Introduction

This study examines the role information provision might play in online student recruitment for a library science master's program. In this chapter, I review my overall study plan, provide an overview of the mixed methods action research (MMAR) process, discuss the research setting, and provide an analysis on the reconnaissance phase. In the reconnaissance phase evidence was collected about the problem defined in the diagnosis phase. I will detail my research questions and different strands of research for the reconnaissance phase, both quantitative and qualitative. Finally, I will discuss how the reconnaissance phase will be used to support the intervention.

Mixed Methods Action Research

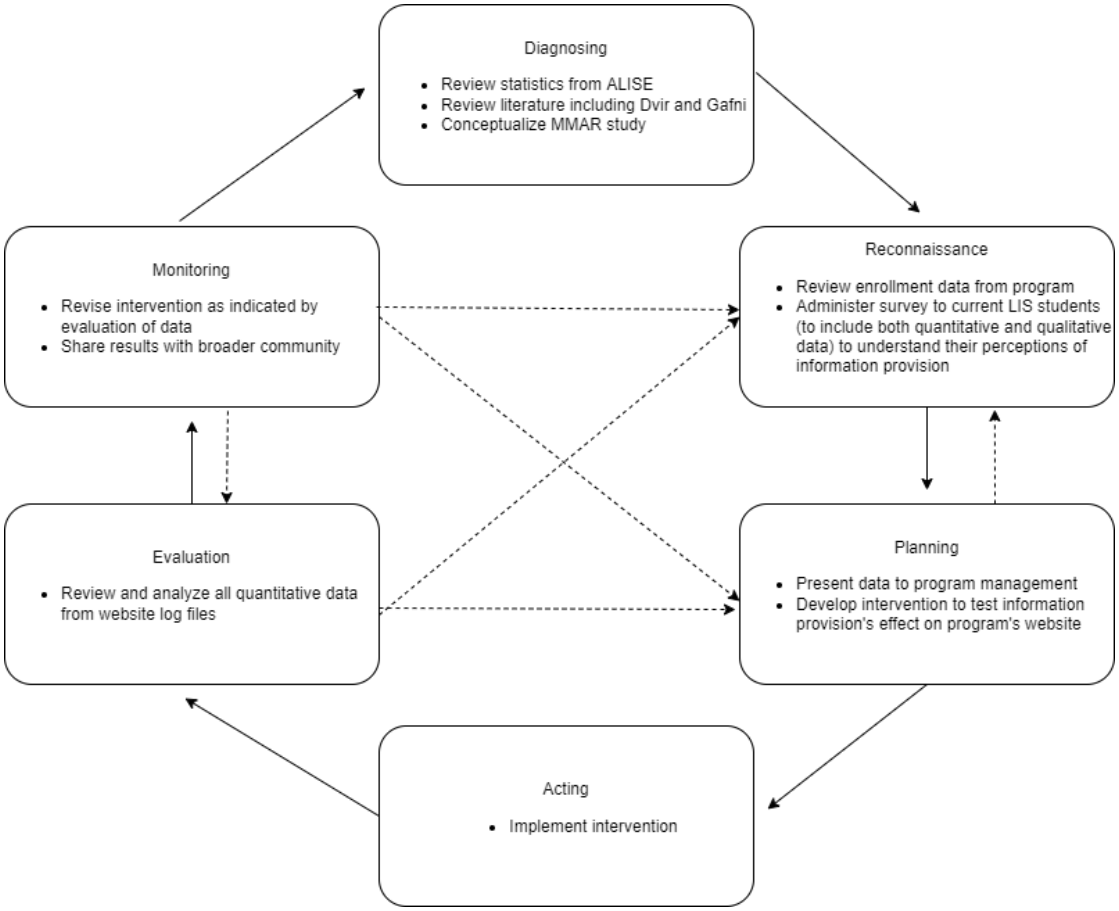
The purpose of this multistrand MMAR study is to understand how information provision might affect the efficiency of the UK library science online program recruitment methods. During the reconnaissance phase, I gathered data on current program students using a concurrent quantitative + qualitative study design. Data was collected on how program students perceive information provision and their perceptions of how it might affect their behavior, specifically measuring whether they submit their personal information via a form on a website.

This MMAR study (Ivankova, 2015) is appropriate for my work because in MMAR "a practitioner's own practice is often the focus of research" (Ivankova, 2015, p. 32). As such, this helps to inform the inquiry. The six phases of the MMAR approach are diagnosing, reconnaissance, planning, acting, evaluation, and monitoring. While the phases are generally thought to proceed in order, information learned along the way may

impact a previous or upcoming phase in the process. The various phases in the process inform the researcher and guides changes that may be made along the way.

Figure 2

Mixed methods action research (adapted from Ivankova, 2015)



In the diagnosing phase (described in chapter 1), a problem of practice was identified. In the reconnaissance phase, preliminary information and data were collected about the problem of practice. In the planning phase, I developed an intervention. During the acting phase, the intervention was put in place. Evaluation involved collecting and

analyzing data on the results of the action. Finally, the monitoring phase is when a researcher has an opportunity to revise the study for iteration based on the data collected.

Research Setting

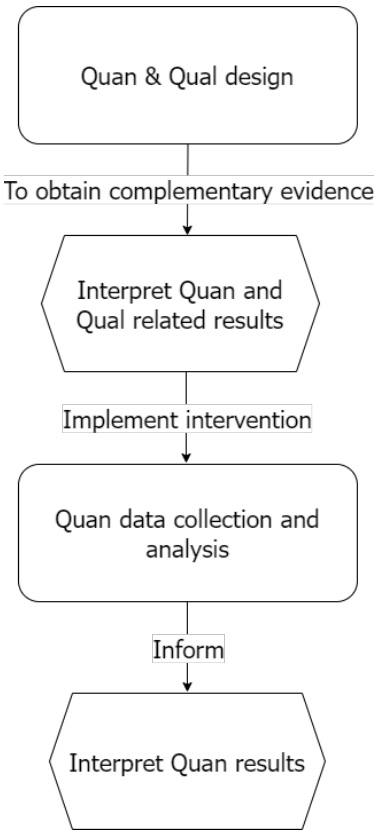
I conducted this study at the University of Kentucky for the library science program in the School of Information Science in the College of Communication and Information. As an employee of the School for sixteen years, I am knowledgeable about the School, its recruitment activities and goals, and the need for increased and sustained enrollment. The study participants will be college graduates consisting of two groups: those currently enrolled in the graduate library science program at UK, and graduate students from graduate library and information science programs other than UK.

Overarching Research Design Across Phases

Figure 3 provides a graphical summary of the multistrand mixed method design. Starting with a quantitative + qualitative reconnaissance stage, I gathered evidence along with way to help inform the next stage of the research project. Multiple research strands were brought together to evaluate an action which was then implemented for the benefit of the School. The balance of this chapter I describe the concurrent quantitative + qualitative approach used in the reconnaissance phase of the study.

Figure 3

Multistrand Research Design



Reconnaissance Phase

The reconnaissance phase of the study used a concurrent qualitative + quantitative mixed-methods design (Figure 4). Results from the qualitative and quantitative strands were reviewed in tandem at the conclusion of data collection and subsequently combined to elicit meta-inferences (Figure 5). By building meta-inferences that span both the quantitative and qualitative data, I was able to meld the data into a cohesive summary that informed the next phase of the study. Data collection in the reconnaissance phase involved soliciting information via an online survey directed at current UK library science students and students enrolled in any library science program accredited by the

American Library Association. The survey gathered quantitative data (e.g., survey subjects' rankings of different test landing pages) and qualitative data through open-ended questions (e.g., "Thinking about Page 1, are you more or less likely to sign up for more information compared to the other test pages? Why or why not?").

Figure 4

Visual Diagram of the Reconnaissance Phase Concurrent Quan + Qual Study Design

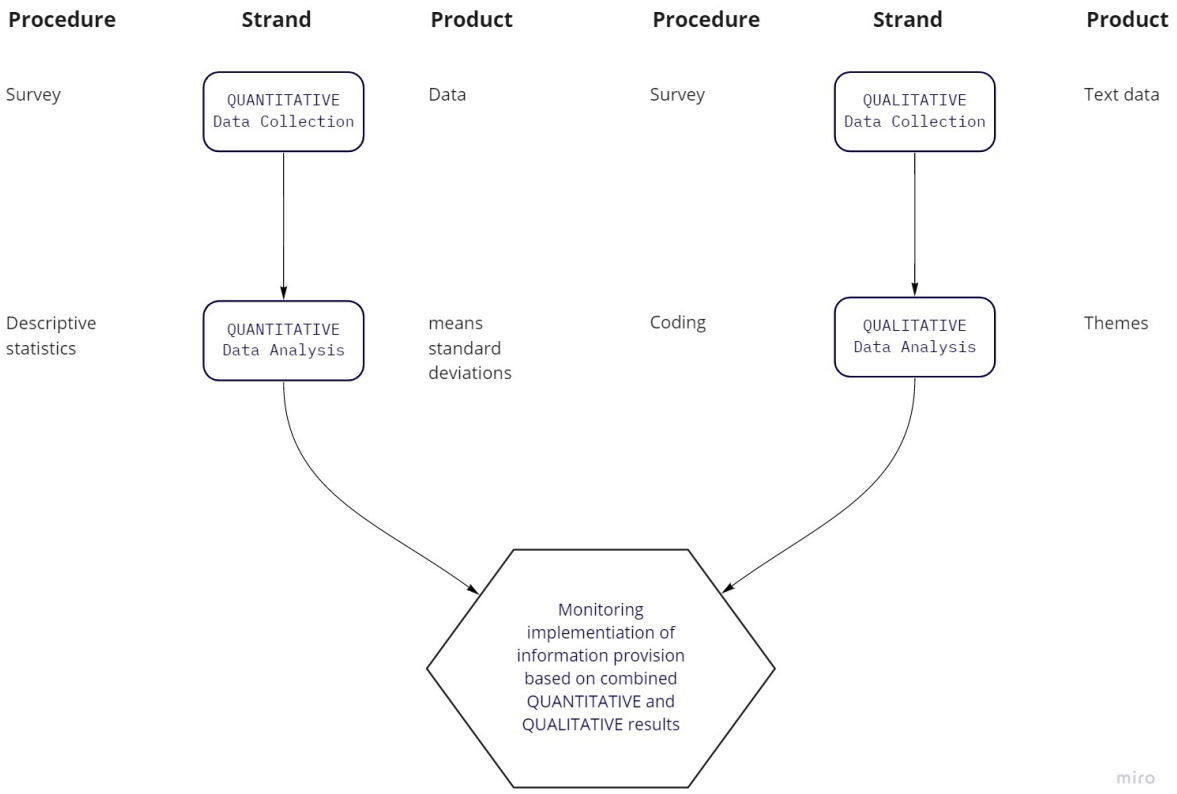
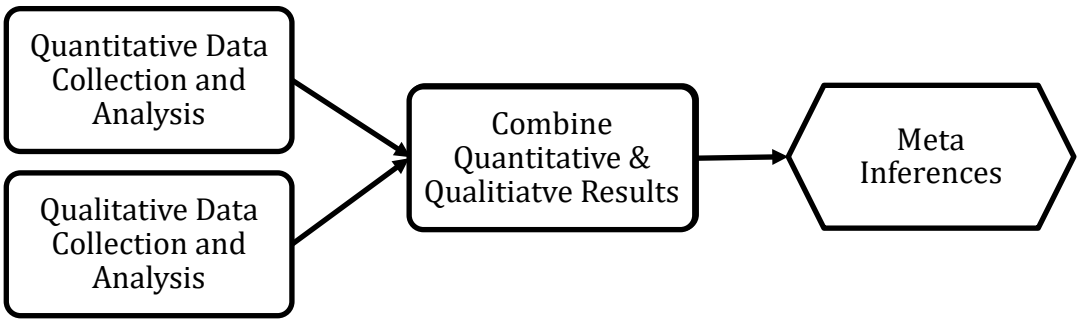


Figure 5

Conceptual Model of a Concurrent Quan + Qual MMAR Study Design (Ivankova, 2015)



Phase Design

By selecting a concurrent qualitative + quantitative design for the reconnaissance phase I was able to collect both types of data simultaneously. Taken together, the quantitative and qualitative data provide more in-depth insights into the role information provision may play in web site visitor's behavior.

Reconnaissance Phase Research Questions

Quantitative Strand 1

In Strand 1, data was collected to better understand if and how variations in information provision on a recruiting website was perceived by current library science students. The research question for this strand was:

Do current library science program students report any difference in likelihood to convert, based on information provision?

Qualitative Strand 2

The qualitative reconnaissance research questions were:

1. Are current students aware of information provision?

2. How do current students think about information provision concerning website marketing?
3. Do any other thematic reasons for student's engagement or disengagement make themselves apparent?

Quantitative Strand Procedures

Reconnaissance phase data collection began October 25, 2021, and concluded November 17, 2021. Responses were elicited by sending requests to two different listservs. The first listserv, SLIS, is the list used by the UK School of Information Science. Its subscribers are students enrolled in the library science program. The second list used, JESSE, is subscribed by library and information science educators across the country. In that situation, since the request was not going directly to the students, the email included a request to be forwarded along to library science program student listservs. To determine how many responses came from the University of Kentucky versus the number of responses that came from the JESSE list without asking any identifying information from the respondents, two unique survey links were created: one for SLIS and one for JESSE. Thirty-eight responses were received with completion scores ranging from 30% to 100%. A total of fifteen responses had a completion rate of 70% or higher. Only data from these fifteen responses were used in the analysis: ten responses from the University of Kentucky and five from other programs.

In the reconnaissance phase respondents were asked to respond to three different landing pages, each with a successively reduced amount of text: 2,130 characters, 1,760 characters, and 833 characters. As respondents were directed to a test page, they were asked questions eliciting a rating of the page on X dimensions and prompted to discuss

their reactions to the page features. At the conclusion or rating the first landing page, respondents were directed to the next test page. This was repeated until the respondent had reviewed all three test pages. Table 2 provides more detail on the amount of text on each page.

Table 2

Amount of Text Per Page

Page	Number of words	Number of characters	% Reduction of characters
1P	402	2130	0%
2P	332	1760	17.4%
3P	170	833	53.0%

Landing Pages

Three different landing pages were developed for this study. Each page had a different amount of text on the page but otherwise were identical to each other. Images of each landing pages are available in the appendix.

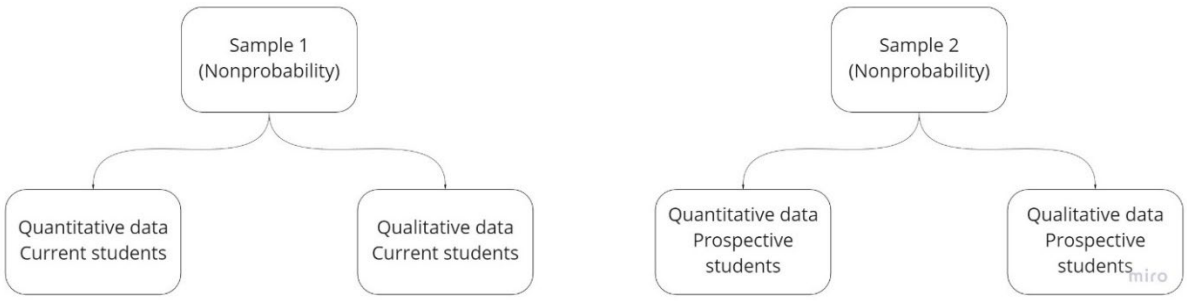
Sample

In the study's early design, the population for the reconnaissance phase would only include individuals currently enrolled in the University of Kentucky's master's program for library and information. However, I decided to open the survey to students enrolled in any library science program accredited by the American Library Association. This decision was made to increase the sample size. Current School of Information program students were recruited via an email posted to the program's listserv. Other

library science students were recruited by emails posted to the JESSE listserv (jesse@lists.wayne.edu), which reaches library science program administration/faculty subscribers. That email included a request for the administrators to forward the message to their program students.

Figure 6

Conceptual Diagram of the Present Study's Sequential Sampling Scheme (Adapted from Ivankova, 2015).



Instrument

The instrument for data collection was an online survey delivered via Qualtrics, an online survey administration application. The survey was designed to take twenty minutes to complete. Participants were shown different landing pages and then asked what they thought about the amount of information available on the landing pages, and whether the amount of information impacted their likelihood to submit their contact information.

Gathering data via an electronic survey provided many benefits to me such as ease of collection, the ability to gather more information more quickly than in-person interviews and producing data that could be easily compared if the survey should be repeated. Surveys also have several disadvantages, including participants not answering

truthfully, and not allowing for any flexibility (Frey, 2018). Given these benefits and constraints, I concluded surveys were an appropriate tool for this line of inquiry. The survey questions yielding quantitative data used a five-point scale (Table 3), with each option labeled with a text description (Krosnick & Fabrigar, 1997). In this study a middle option was provided per (Bishop, 1987; Vannette, 2018) who argue that respondents could introduce bias when a middle option is not present.

Table 3

Five Point Scale Labels

Numeric Value	Label for Survey Questions 1 and 3	Label Survey Question 4	Label Survey Question 5
1	Very poor	Much too Little	Extremely Likely
2	Poor	Too Little	Somewhat Likely
3	Average	About Right	Neither Likely nor Unlikely
4	Good	Too Much	Somewhat Unlikely
5	Very Good	Much too Much	Extremely Unlikely

Data Collection Procedures

A request to participate and a link to the survey was sent via the program's student listserv to UK library science students enrolled at the time of the study and via the JESSE listserv to other programs in the United States. Numerical data from the surveys were subjected to analysis to yield descriptive statistics. Before analysis began, the data was reviewed for completion. The completion rate ranged from 10% to 100%. All responses with at least a 70% completion rate were used in the analysis. This resulted in

15 responses that were used in data analysis. I made this decision to maintain as much of my data set as possible while ensuring most of the survey had been completed.

Qualitative Strand Procedures

In strand 2, qualitative data was collected. This data helped inform the quantitative data collected in strand 1. A section of the survey prompted participants to provide open ended responses. Respondents were encouraged to provide detail in their response by using the word 'discuss' in the question. I limited the number of questions and kept questions neutral in tone so as not to bias a respondent (Dillman et al., 2014).

Instrument

The instrument for qualitative data collection was the same online survey for Strand 1, delivered via Qualtrics, an online survey administration application. Participants were shown different landing pages and then asked, subsequent to being prompted for a quantitative rating, what they thought about the amount of information available on the landing pages, and whether the amount of information impacted their likelihood to submit their contact information.

Data Collection Procedures

A request to participate and a link to the survey was sent to UK library science students enrolled at the time of the study via the program's student listserv and distributed to other programs in the country nationally through the JESSE listserv. Numerical data from the surveys were subjected to analysis to yield descriptive statistics. Before analysis began, the data was reviewed for completion. The completion rate ranged from 10% to 100%. All responses with at least a 70% completion rate were used in the

analysis. I made this decision to yield more results but ensure that most of the survey had been completed.

Qualitative Data

The survey included open-ended questions in which respondents were asked to provide in-depth information on how they perceived information provision and how the extent to which information on a page enhances or inhibits submission of their personal information. Data analysis began with data cleaning. In this phase I collected all responses in one document stored in a protected Office365 folder. Any responses that were not pertinent (i.e., responses like "n/a") were discarded. The remaining responses were then organized and coded manually using general guidelines from Infosurv (2015), MarketingStat GmbH (2018) and Bhatia (2018). Responses were then characterized two different ways. First, comments were coded as being about information or not, and second, coded as being positive, negative, or neutral in tone. Finally, responses were grouped by theme and summarized.

Data Integration

The data were integrated across strands to help answer the question of whether information provision impacts the behavior of a website visitor. A strength of mixed methods research is the ability to use different kinds of data to allow the researcher to triangulate data points to arrive at informed conclusions (Ivankova, 2015). Specifically, in a concurrent quantitative qualitative MMAR design, combining the two strands of data allows me to see if the data converge on particular conclusions or diverges – that is, the data does not align properly, and further investigation is called for (Ivankova, 2015).

Quality Assurances

Before any data were collected, a proposal was submitted to the Institutional Review Board (IRB) at the University of Kentucky. The proposal was approved on September 28, 2021. I followed the guidelines, data collection policies as determined by IRB. Survey data was collected using Qualtrics, a university sponsored online survey administration tool.

Results

Major Quantitative Findings

The research question for the quantitative strand of this phase was as follows: Do current library science program students report any difference in likelihood to convert, based on information provision?

Regarding the question, respondents rated the pages 1P and 2P with similar scores but rated page 3P a bit lower on every characteristic measured. Page 2P was rated highest for its likelihood to prompt a respondent to request additional program information at 2.46 (with 1 representing ‘extremely likely’). When respondents were asked if they were likely to request information from a test page, page 3P scored the worst at 3.20 (with 5 being Extremely Unlikely).

Table 4

Summary of Quantitative Data

Test Page	Overall rating mean	Overall rating standard deviation	Graphics mean	Graphics standard deviation	Amount of text mean	Amount of text standard deviation	Likely to request mean	Likely to request standard deviation	Amt of text influences
1p	3.27	1.03	3.13	1.06	3.13	.35	2.67	1.18	4 No 9 Yes
2p	3.15	0.99	3.15	0.49	3.08	0.97	2.46	0.48	4 No 9 Yes
3p	2.60	1.13	3.00	0.92	2.47	1.21	3.20	0.51	8 No 6 Yes

Note. N=15. Overall rating: 1 = very poor; 5 = very good (higher is better); Graphics: 1 = very poor; 5 = very good (higher is better); Amt of text: 1 = Much too little; 5 = much too much; Likely: 1 = extremely likely; 5 extremely unlikely (lower is better).

The final column in Table 4 reports results for the question "Thinking about the web page you've just reviewed, and specifically the amount of information present on the page, does the amount of information influence how likely you are to sign up for an online information session or a prospective student newsletter?" Interestingly, page 3P, the page with the least amount of text, receives double the number of "No" responses compared to others. This coincides with an increase in negative responses to the question asking how likely the respondent is to request information from the presented page. Page 3P is the only page to score higher than a 3 in this category, scoring 0.51 higher than the next highest page (1P with a score of 2.69).

Major Qualitative Findings

For each test page in the survey, respondents were presented with the two same open-ended questions. After they were asked to rate the page for 'overall impression' they were asked to "please discuss specifically what about the website led to that rating." In a subsequent question, they were asked, for each page, to discuss the amount of information on the page and why it may or may not impact the likelihood of them requesting additional information. Fifteen responses with a completion rate of 70% or higher were included in the analysis. Each valid open-ended response was copied into an Excel file. Then, each comment was coded to indicate which page the comment referenced and the specific question that was being answered. Responses speaking to the amount of text or information on the page were coded as "Information" while any other comments were coded as "General". And finally, comments were coded as "Positive", "Neutral", or "Negative". Sixty-seven individual responses were collected. Thirty-six responses were coded as "Information". The total distribution is contained in Table 5.

Table 5

Summary of Qualitative Data Coding

Page	Number of "Information" Comments	Positive	Neutral	Negative
1P	5	4	1	0
2P	13	9	1	3
3P	18	2	2	14

Note: N=15.

Page 1P Summary. In the study, Page 1P is the page with the most amount of text. It received the fewest number of comments related to how the text on the page did or did not influence the respondent. Of the five responses, positive comments included items like "visuals and text are very appealing", to "liked the bullet points with links to other information". One neutral comment stated that the amount of information did not influence the respondent's likelihood of requesting additional information. This comment was repeated on all three test pages.

Page 2P Summary. Page 2P was the middle option of the three pages, having an amount of text in between 1P and 3P. It received the second most comments, the most positive comments overall, and the highest number of positive comments on a percent basis compared to the neutral and negative comments received. The positive comments were like those for Page 1P. Positive comments included statements like "this feels like it has just enough information" and "a lot more information on this page that offers quick links for those who like immediate information". This page did receive three negative

comments. One simply stated that there was too much text, while the other two felt like there was not enough text on the page.

Page 3P Summary. Page 3P received the most feedback with 18 responses and most of those responses were negative. The page only received two favorable comments with one saying the text was “encouraging” and another saying the text was “OK”. The neutral responses had the same respondent saying the amount of text does not impact them and a second comment saying that the text on the page was “average”. The negative responses spoke to a perception of there being too little information available on the page. Comments included items like “there is not enough information”, “too bare”, and “it doesn’t give a lot of information”.

The qualitative research questions for the reconnaissance phase were:

1. Are current students aware of information provision?
2. How do current students think about information provision concerning website marketing?
3. Do any other thematic reasons for student's engagement or disengagement make themselves apparent?

Regarding question 1, the data gathered do not provide an answer. In hindsight, I now think this question does not address the focus of this study. Ultimately, I am not interested in awareness of information provision; rather, I am focused on the impact information provision may or may not have on visitor behavior. If I were doing this study again, this would not be a question I would include.

As for question 2, it seems clear that students report that they are less likely to sign up on a web page that has too little information. The page with the least information

(3P) scored the worst across all ratings. It received the lowest average rank score for whether the respondent was likely to request additional information and received the most negative comments. Pages 1P and 2P scored very similarly with a noticeable drop in scores when it comes to Page 3P. What is not clear is when does the amount of information it becomes 'too little information.'

For question 3, no other themes emerged consistently as being areas to address in further studies. In total, there were 32 comments that were coded as being about something other than information. In that group, comments range from discussing the graphics, to the feel of the page, to navigation. In those comments, there were often conflicting views. For example, one respondent said the pages were visually appealing while another said they did not find any value in the graphics. There are three statements along the lines of the page is 'dated' without any explanation. Also, there were two comments specific to the difficulty users had viewing the pages on a cell phone. If I were going to look for additional items in the future, I would explore using more category specific questions. For example, I might ask a question specifically about graphics with a comment box, and another question about accessibility with a comment box. A general question about 'other issues' seems to have yielded to a wide variety without enough focus in the responses.

Highlights of Reconnaissance Data Analysis

Regarding the research question, "Do current library science program students report any difference in likelihood to convert based on information provision?" The answer is mixed at best. In this phase, priority was given to the quantitative data, with the qualitative data providing context to help interpret the quantitative data. While the

analysis of quantitative and qualitative feedback from the reconnaissance phase does not reveal a clear indication of a path forward, some general insights can be gleaned. Less text does seem to elicit a more negative response among survey takers. In general, respondents view 1P and 2P evenly, with 3P scoring lower and receiving the most negative comments. This would suggest that respondents see too little text as a negative. It is not clear where the boundary is between 'just enough text' and 'too little text'. My interpretation of this data suggests that this population wants more text and may be less likely to convert if there is not enough text. This would disagree with the findings in the Dvir and Gafney (2018) article but may be in line with other literature that suggests web site visitors need additional text to feel comfortable enough to share their data online (Lee & Turban, 2001; Lim et al., 2006). These results indicate that more research needs to be done. This additional research took the form of a second reconnaissance phase which will be discussed in Chapter 3.

Chapter 3: Action, Evaluation, and Recommendations

Introduction

The School of Information Science at the University of Kentucky has a practical problem of reduced enrollment in the master's program for library and information science. Reduced program resources have accompanied decreasing enrollment. For example, as library science faculty positions have become available, the School has been asked to hire faculty who can teach across all School programs, leading to a reduction in full-time-equivalent faculty devoted to the library science program. This increased the library science program's reliance on part-time faculty for course instruction and an increased burden on existing faculty to sustain shared governance (i.e., faculty have served on several programs and School committees in the same calendar year). School of Information Science administrators believe that if enrollment can be improved, then they will be able to make a case to hire additional faculty who will devote 100% of their effort specifically to the library science program. Therefore, School's administration is searching for more efficient recruitment strategies to increase enrollment.

This study was a multistrand MMAR across two phases. "A multistrand MMAR design is reflective of a longitudinal and interactive nature of action research allowing for generating evidence from multiple differently sequenced quantitative and qualitative study strands within an overall action research project framework" (Ivankova, 2015, p. 148). In the reconnaissance phase, there was a quantitative and qualitative strand. The goal of the quantitative strand was to determine if respondents rated landing pages differently because of the amount of text on the page. The goal of the qualitative strand was to help inform the data collected in the quantitative strand and to see if there were

any common themes among the respondents related to the amount of information on the landing page. In phase two, the evaluation phase, there is a quantitative strand. The goal of the quantitative data is to quantify visitor behavior and compare how that behavior might vary across three separate landing pages.

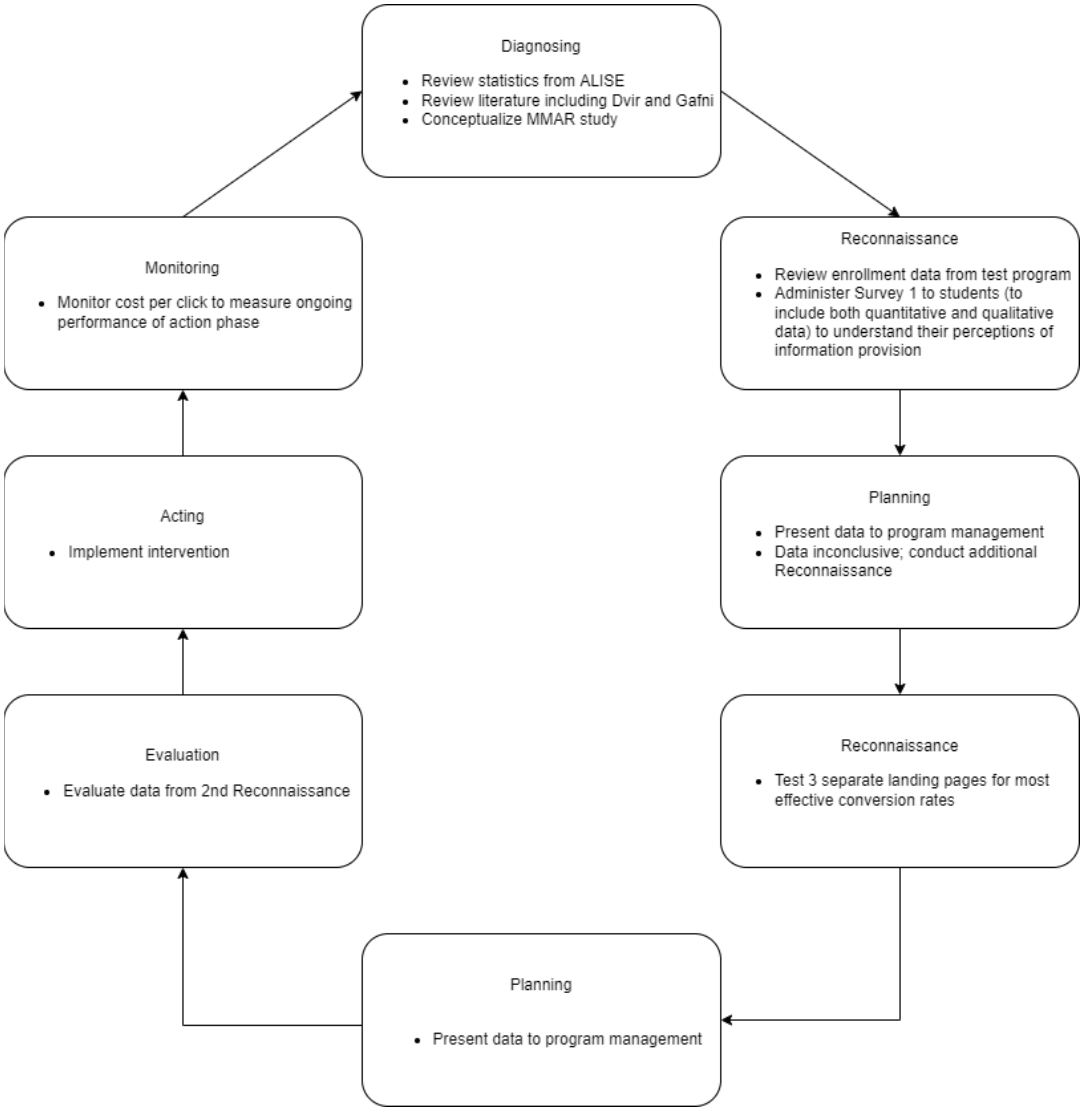
In this chapter, I describe the procedures of the second reconnaissance phase, the resulting action phase, and the proposed monitoring phase. Finally, I will provide my thoughts about the project, the data collected, and how this will influence my professional work going forward.

Second Reconnaissance Phase

At the conclusion of the reconnaissance phase, I examined the qualitative and quantitative data. The findings were inconclusive and did not support nor refute the findings from Dvir and Gafney (2018). I then revisited the problem and its context which was to find better ways to recruit potential students. Reminding myself of the focus of the study, I then decided to further this line of inquiry by implementing an additional reconnaissance phase to hopefully yield more definitive data on what features of landing pages would yield more conversions. This reconnaissance phase would focus more clearly on visitor action as that is ultimately what benefits the School. This is in line with the basic framework as laid out by Ivankova (see Figure 2). Figure 7 shows the flow of this particular MMAR study.

Figure 7

Research Flow for this MMAR Study



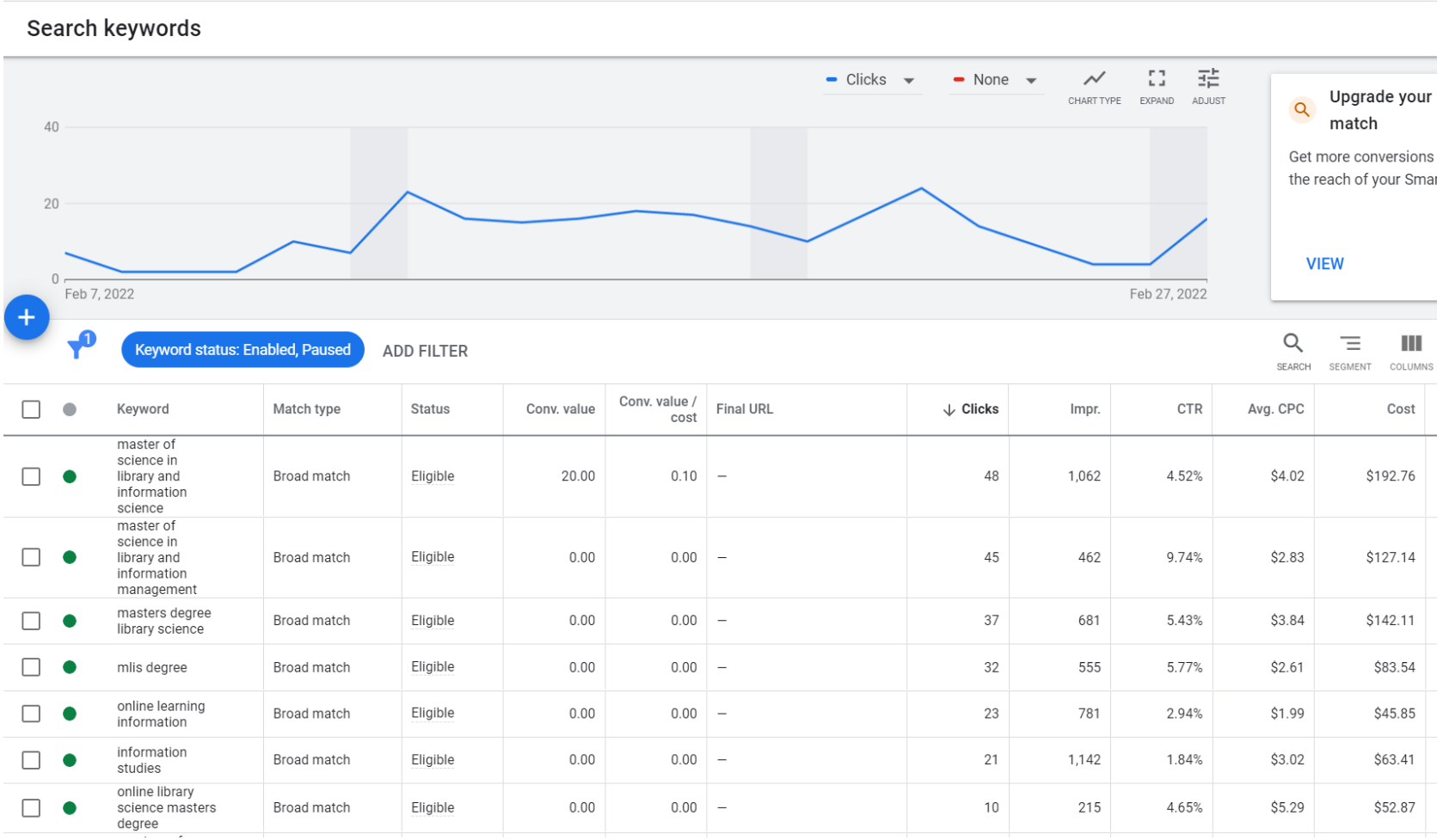
Google Ads

The School has used Google Ads for many years. Organizations who buy ads on Google Ads bid money on things called *keywords*. A keyword is an informational word used to prompt an information system to return content related to that word. Thus, in the Google Ads context, keywords are search terms that an organization expects its likely customers will use when searching for services that are provided by the organization. By bidding on effective keywords, organizations can have their advertisements show up in a search results page when users perform a search using those words. Google displays advertisements for those organizations who have bid on those terms used in a user's search, giving preference to those organizations who have made a higher bid on a word or a have committed a higher daily budget than competitor organizations. Google dynamically monitors the amount bid by an organization for a keyword and the budget an organization has set related to how much the organization will allow itself to spend per day. When an organization's ad appears in a user's search results, this is called an *impression*. When a user clicks on an ad, this is called a *click.* Organizations are only charged when users click on their ad. A specific ad's position on the search results page (i.e., its proximity to the top of the page) and the fee for the ad can change over the course of a day. This is because some organizations who have bid higher on a word (they essentially pay more for the "rights" to that word) might reach their daily budget allowance more quickly than other organizations, thereby moving competitors' ads, which may have a lower bid, to a higher position on the page. Figure 8 is an image of a Google Ads table from the School of Information Sciences Google Ads account. The column marked "keyword" displays the search term, terms, and phrases used by the

School. As one can see, short phrases are also considered keywords. Figure 9 shows a search results page with the ad for the UK program in the top position relative to ads from the School's competitors.

Figure 8

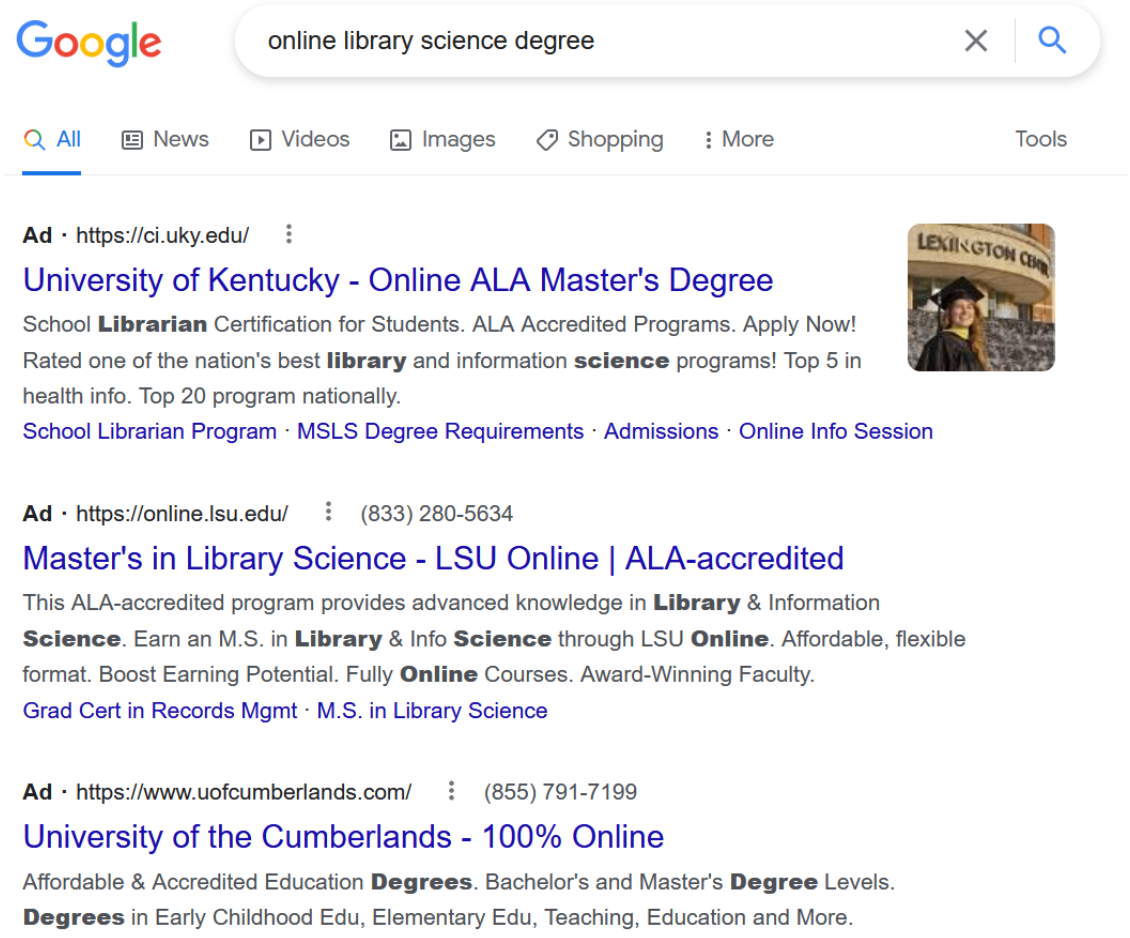
School of Information Science Google Ads Keywords Table



Keyword	Match type	Status	Conv. value	Conv. value / cost	Final URL	Clicks	Impr.	CTR	Avg. CPC	Cost
master of science in library and information science	Broad match	Eligible	20.00	0.10	–	48	1,062	4.52%	$4.02	$192.76
master of science in library and information management	Broad match	Eligible	0.00	0.00	–	45	462	9.74%	$2.83	$127.14
masters degree library science	Broad match	Eligible	0.00	0.00	–	37	681	5.43%	$3.84	$142.11
mlis degree	Broad match	Eligible	0.00	0.00	–	32	555	5.77%	$2.61	$83.54
online learning information	Broad match	Eligible	0.00	0.00	–	23	781	2.94%	$1.99	$45.85
information studies	Broad match	Eligible	0.00	0.00	–	21	1,142	1.84%	$3.02	$63.41
online library science masters degree	Broad match	Eligible	0.00	0.00	–	10	215	4.65%	$5.29	$52.87

Figure 9

Google Search Results with the School of Information Sciences Ad



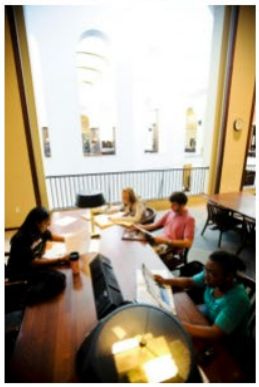
Procedures

The three landing pages used in the reconnaissance phase were adapted for use in this additional reconnaissance phase. The pages were named 1P, 2P, and 3P. Page 1P had the most amount of text, with 402 words, then 2 with 332 words, and with 3P with 170 words. The adaption made to the pages from the initial reconnaissance phase was a modification to the sign-up procedures for conversion. In the first reconnaissance phase, users had to click on a link to view a sign-up form. In this phase the sign-up form was

embedded within the landing page. See Figure 10 and Figure 11 for a comparison of the two versions.

Figure 10

Landing Page with Link to Sign Up Form



full-time or part-time to meet the degree requirements

- Practicum and Study Abroad possibilities as part of student's credit hours
- School Librarian Certification for students pursuing a career in school libraries or media centers
- Chance to apply for an Alternative Spring Break internship position in Washington D.C. at places like the Library of Congress, National Library of Medicine, or the Smithsonian Libraries

***A top 20 overall ranking in US News and World Report, #3 in health librarianship, #11 in library media, and #12 in children and youth services**

"Fabulous program that has prepared me well for my career as a librarian." - Jasmyne Lewis Combs, alumna and Corrections Librarian for the Commonwealth of Kentucky

"Thanks to all my professors and the classes I took at UK, I feel prepared for my new job, just as I felt prepared for my past positions." - Sarah Flood, alumna and Director of the Breckinridge County Public Library

Get Started Today:

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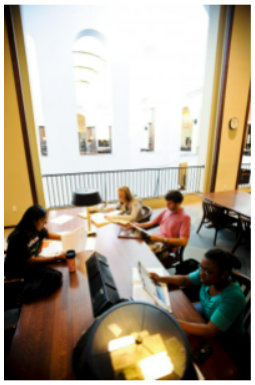
Figure 11

Landing Page with Sign Up Form Embedded



- In-state/Resident tuition rates for online learners (see current rates here) cuts cost of a graduate degree significantly for distance students
- Asynchronous online classes allow students a flexible, individualized schedule, and students may take classes full-time or part-time to meet the degree requirements
- Practicum and Study Abroad possibilities as part of student's credit hours
- School Librarian Certification for students pursuing a career in school libraries or media centers
- Chance to apply for an Alternative Spring Break internship position in Washington D.C. at places like the Library of Congress, National Library of Medicine, or the Smithsonian Libraries

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"Thanks to all my professors and the classes I took at UK, I feel prepared for my new job, just as I felt prepared for my past positions." - Sarah Flood, alumna and Director of the Breckinridge County Public Library

Subscribe

* indicates required

Email Address *

First Name *

Last Name *

What semester do you intend to start classes?

What year do you intend to begin classes?

Ad Campaigns. After a brief phone conversation with a representative from Google Ads, I decided to use a feature within Google Ads, called a campaign, as the vehicle to collect data on the effectiveness of 1P, 2P, and 3P. A campaign allows the user to define their keywords, setup an ad, and set a budget. Three separate ad campaigns were developed, one for each page. Each ad campaign used the same keywords, the same ads, and the same daily budget. Each campaign directed clicks to a separate landing page. Clicks were monitored throughout the testing period to ensure each page received a similar number of clicks. I had a brief consultation with Google Ads provided support to confirm that I was setting up this experiment appropriately. The landing pages were only accessible to visitors who click on a Google Ad purchased by the School. Images of the landing pages can be found on Appendix E, F, and G.

Evaluation Phase

A third quantitative strand in my multi-strand design served as the evaluation phase of this reconnaissance study. To evaluate the action, data was collected on web site visitors who came to our web site by clicking on one of the three Google Ads. The purpose of this was to determine if web site visitors would behave differently across the three test pages. Specifically, I wanted to look at the number of times a user converted on each page.

Phase Design and Research Questions

The evaluation phase consisted of a single quantitative strand designed to collect quantitative data derived from two of Google's products used by the School: Google Analytics and Google Ads. The research question for this phase was as follows:

Does changing the amount of text on a web page result in a difference in conversion rates?

Data Collection

Data for this strand was collected as follows:

- Using Google Search, a user enters search word or phrase.
- If appropriate, the ad from one of the three campaigns appears (along with ads from competitors).
- When a user clicks on the ad from the School, that click is recorded in Google Ads, which tracks performance for all campaigns. At this point, Google Ads tracks which campaign was responded to and how much to bill the School for this click. Google Ads constantly collects data to show how many times an ad was viewed regardless of whether the ad was clicked (*impressions*).
- The click is also recorded in a separate product, Google Analytics, which tracks visitors to the School's website.
- Google Analytics then collects additional information on this visit including the visitor's time on site and whether the visitor viewed any additional pages.
- If the visitor submits the form to request additional information, that data is captured in a Google Form.
- There is no way to connect the information in the Google Form to data collected by Google Ads or Google Analytics.

The data is collected in the background, anonymously without any additional action on the part of the user. This action ran for three weeks in February of 2022, February 7 through February 27. During that time, the three Google Ads campaigns

resulted in a total of 2,820 new web site visitors. Each landing page received between 895 and 994 visitors. For the evaluation phase, my population consists of the 2,820 individuals who clicked on one of the Google Ads.

Data Analysis

Data from Google Ads and Google Analytics was imported into an Excel spreadsheet. In Excel, I performed the following calculations:

1. Conversions per click. This was calculated by dividing the number of conversions by the number of clicks.
2. Cost per conversion. This was calculated by dividing the cost by the number of conversions.

By doing so I was able to compare the data more easily across the different pages, such as the number of conversions per click.

Major Findings

The research question for the action phase was:

Does changing the amount of text on a web page result in a difference in conversion rates?

The answer to that question is yes, with a qualifier. Table 6 summarizes the data collected during the action phase. The qualifier I will add is that I cannot definitively state that the change in the amount of text caused the change in conversion rate. However, with a 4x increase in conversion rate (from 1P to 2P), and the only difference being the amount of text on the page, the data certainly suggest that the amount of text does impact the conversion rate.

Table 6

Data Summary for Three Test Landing Pages

Page	Clicks	Conversions	Conversions per click	Cost per conversion
1P	931	2	.002	735.18
2P	895	8	.009	183.80
3P	994	8	.008	183.80
Previous page [a]	11,098	28	.003	729.31

[a] The landing page that used by the School prior to this study which reflects data from a comparable time in spring 2021.

The page with the most amount of text, page 1P, performed the worst with the least number of conversions per click. That page accounted for the least number of signups and has a higher cost per signup than either of the other two pages. Pages 2P and 3P (with decreasing amount of text per page) performed very similarly. Each page had the same number of signups at eight each and the same dollar amount per signup. There is a .001 difference in the signups per click that did not impact either the number of signups or cost per signup for the number of clicks each page received.

I believe the data collected to be reliable and trustworthy. While I was able to compare data from two different sources, both sources come from the same provider, Google. I have worked with both products, Google Ads and Google Analytics for over a decade. The numbers provided during this test period are reasonable given my experience.

Review of Two Reconnaissance Phases

While the results from the reconnaissance phase suggested respondents wanted more text on the page, the result of the follow-up reconnaissance phase suggests there may be an upper limit to the amount of text on the page. While there is only a 17.5% reduction in text from page 1P to page 2P, page 2P performs at four times the rate of signups. And with a drop of 53% of text, page 3P performs at the same increased rate. In this specific context, the behavior outweighs what users said they preferred.

Beyond the number of signups there is some additional data that should be included. The website for the UK School of Information Science uses Google Analytics to collect website visit data. It is important to note that it does not collect any personal information but tracks a visit as a user moves through the site. Some data that Google Analytics provides includes bounce rate, pages/session, and time on site. Table 7 compare those numbers for each of the three pages.

Table 7

Summary of Google Analytics Data

	Bounce Rate	Pages/Session	Time on Page
Page 1P	81.77%	1.29	1:10
Page 2P	77.60%	1.61	1:27
Page 3P	78.12%	1.54	0:57
Overall site	66.6%	1.82	1:21

While nothing stands out as striking in the initial look at the data, I can say that visitors prompted to the landing page via Google Ads do not spend a lot of time on the landing page and a high percentage exit after only having looked at the landing page. This reinforces the need for the School to make the landing page as efficient as possible in terms of attracting the attention of prospective students. The data row, "Overall site" included for comparison purposes to see how the test pages performed in relation to other pages on the site. It should be noted that "Overall site" includes traffic from current students and employees of the School so I would expect different browsing behavior. For example, current students may have bookmarked the School's home page for future reference during their enrollment in the program. In a case where they might use that bookmarked site to get to other pages on the site, this would result in a lower bounce rate.

Action Phase

This study strongly suggests the School discontinue use of the old landing page and begin using either page 2P or page 3P. The School of Information Science has done this already, directing visitors to only 2P. This change will result in a much more efficient use of funds for the School. If we assume an investment of $10,000, the original page would have yielded approximately 13.7 signups. Either of the new landing pages (2P and 3P) would expect closer to 54.6- signups, nearly four times increase in the rate of signups.

Monitoring Phase

Going forward, the School should continue to monitor the cost per conversion numbers. This will allow the School to compare performance to the second reconnaissance phase and discover when additional changes may need to be considered.

Since the follow-up reconnaissance phase was able to generate leads at a cost of $183.80, the School is able to obtain more leads at a much more efficient rate, with the same amount of investment. Any variation that causes an increase in cost per conversion should be monitored as that will impact the effectiveness of the School's online advertising. At the same time, future studies might be able to bring the cost per conversion down further, again bolstering the School's financial resources.

This study has only examined one factor in increasing sign-up rates for a web site landing page. Similar studies, small in scope with easily made changes, should be pursued by the School moving forward to better hone the landing page to increase the signup yield as much as possible. Some studies, such as an advanced UX redesign may fall out of the capabilities of the School due to lack of expertise and budget for such a study. However, a smaller study, between landing pages that include graphics and landing pages that do not could be done easily. More attention should be paid to current research regarding online advertising, landing pages, persuasive arguments, and conversion rate theory to see if there are other, simple, changes the School might pursue for additional testing.

Implications

On the Theories

Delone and McClean (1992) proved to be a useful framework as I worked through my problem of practice and possible actions to address the problem. Their pathway from Information Quality to Net Benefits helped me visualize a cause-and-effect system that I could then manipulate. While my data does not prove causation, the visualization was beneficial to me as I was developing my project. Similarly, Fogg et al (2003) and Becker

et al. (2009) both provided context to my study, helping me to visualize my goals and actions to take to achieve those goals. Huizingh's (2000) work is a possible area for future inquiry. Now that the action has shown better results with less text, is there a way to overlay Huizingh's typology to determine if commercial, non-commercial, or product content is more effective at generating conversions.

It is quite likely this study would not have happened except for discovering Dvir and Gafney's (2018) work. It laid out a blueprint that I was able to adapt and adopt to my specific situation. My results closely mirror the results Dvir and Gafney observed with a significant increase of conversions on the pages with less text. While they argue that less information leads to reduced information overload and that increases the rate of conversions, I cannot make that claim with this study. While I do agree that less information leads to reduced overload, I also think that leads to an unmet information need. Is the higher conversion rate in part due to the visitor having unanswered questions? That is something that I might explore in future studies. Ultimately, I think the possible factors that are at play when a visitor decides to convert are many ranging from amount of information, trustworthiness of the web site, information overload, unmet information need, and others. This study represents only one data set in answering the question 'why does a user choose to submit personal information on a web site?'

On the Unit

As an academic unit, the School of Information Science wants to make the most efficient use of its resources. This applies to physical space, human resources, and certainly financial resources. In its competitive environment, the School is looking for ways to continue advertising to recruit students while being mindful of decreasing

financial resources used to pay for advertising. This study will allow the School to continue to advertise at its current rate and gain a much high number of prospective student sign ups or decrease the funding yet maintain the current rate of signups. As the current financial model at the University depends on incremental increases in enrollment to receive an increase in resources, the School should continue with its current advertising investment.

Professionally

Working through this project has given me skills and taught me more about the research process. I have successfully defined a business problem, found research to help frame the business problem, gathered, and analyzed quantitative and qualitative data. I analyzed the data and developed an intervention which resulted in an improved business practice. I have successfully completed the IRB process and better understand how this University helps support research by offering tools (like Qualtrics) and resources (like the IRB organization).

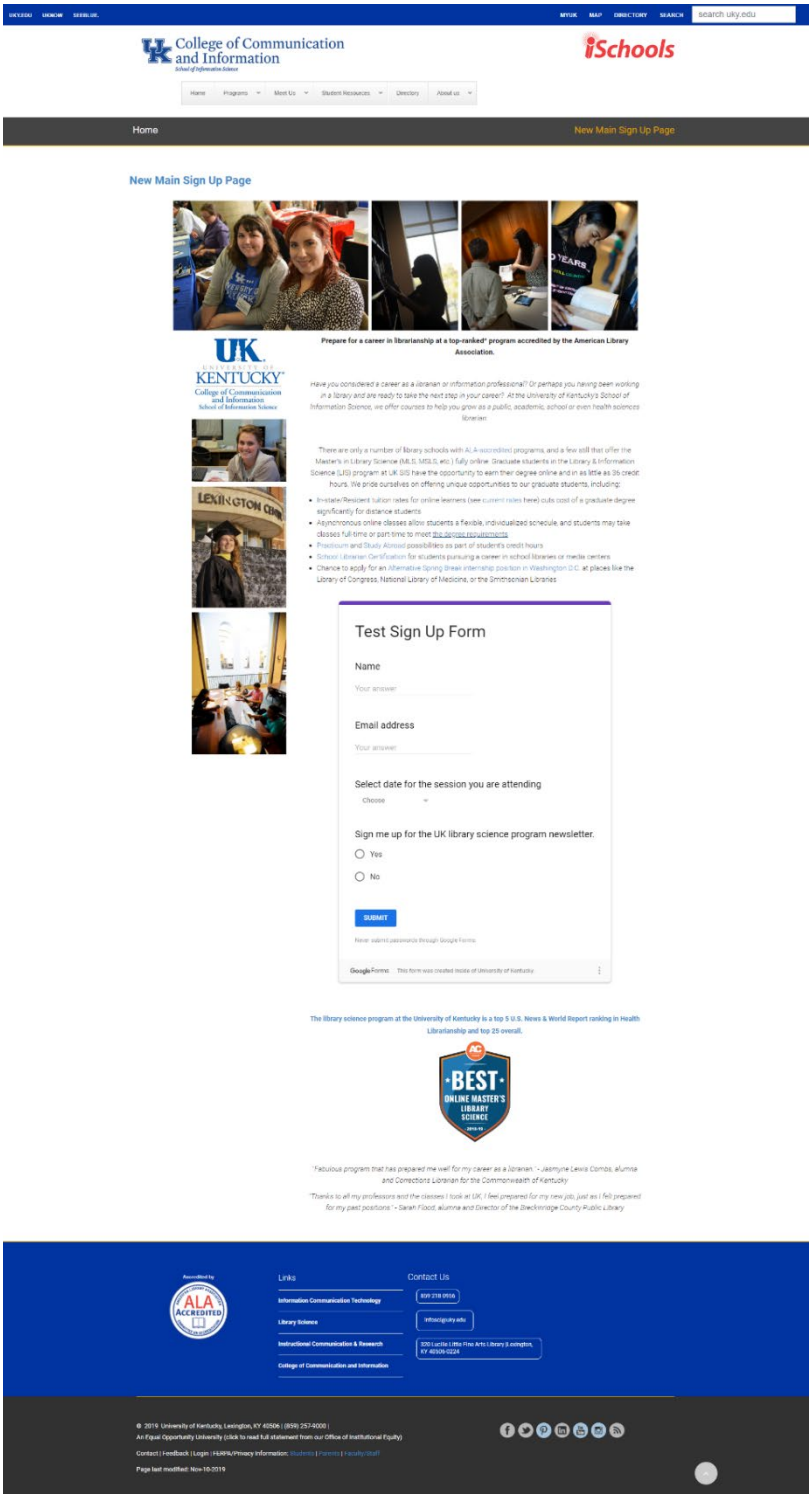
Conclusion

When I was in my undergraduate program, my friends and I often discussed what we wanted to do after graduation. Several of my friends talked about going on to earn their doctorate and becoming professors. While the idea of teaching did appeal to me, research did not. It was never a point of interest. Research I read in my undergraduate career was often interesting but often seemed most relevant in the confines of academia. The research seemed to be focused on informing a situation rather than acting on a situation. So, for example, a literature criticism might discuss thematic concerns of Beowulf, which again, while interesting, has little bearing on one's day to day life. The

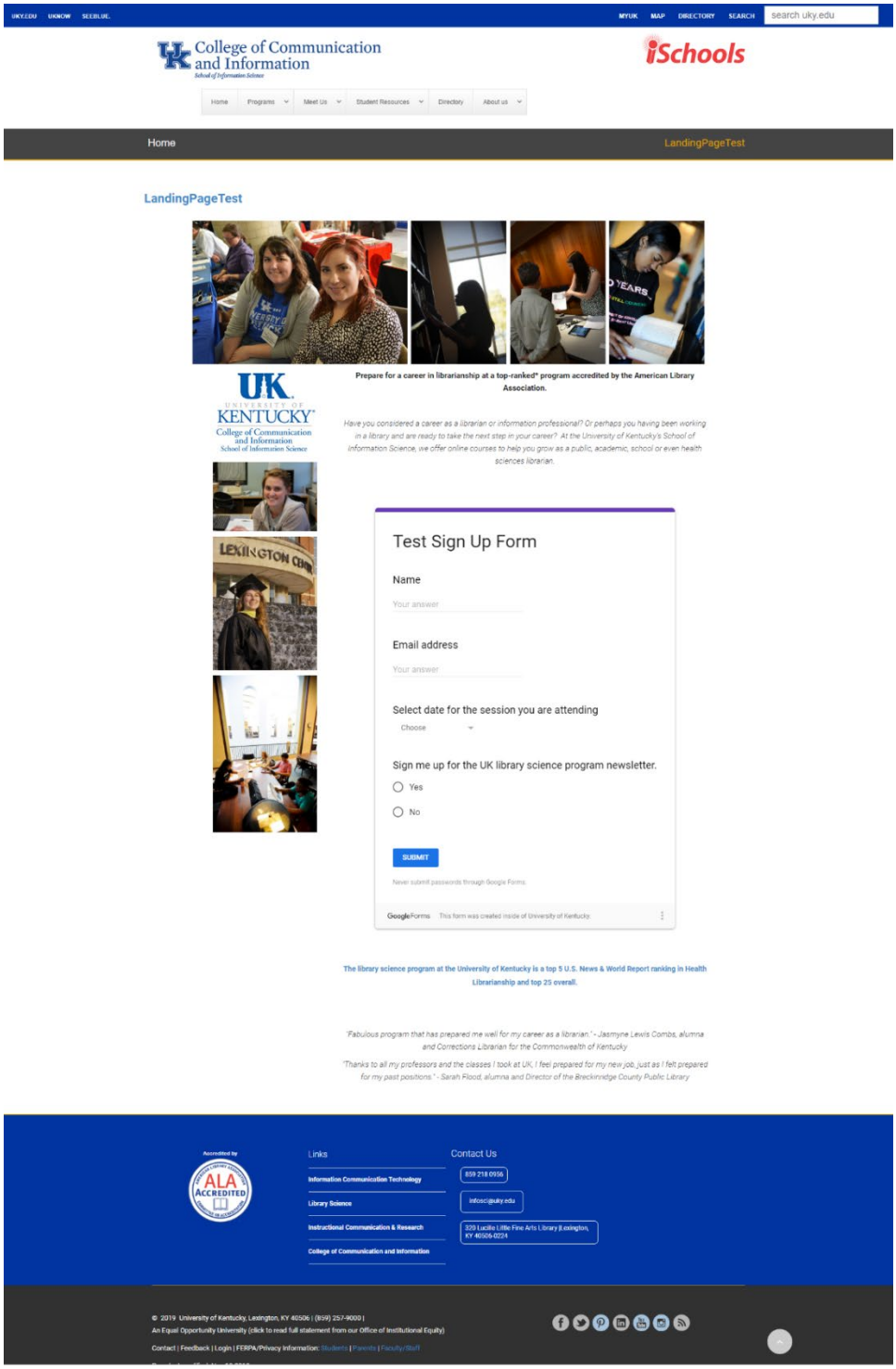
applied approach of the EdD program allowed me to bring together research with action. My research led to my department using recruitment funds much more efficiently. Additionally, I was an active learner through this process, bringing current research into my daily practice and diagnosing a current problem. While I will not go so far as to say my problem has been solved, the situation has improved. Repeating this study using factors other than information provision should help the School continue to make incremental improvements in its online advertising strategy.

Appendices

Appendix A: Current Library Science Sign Up Page



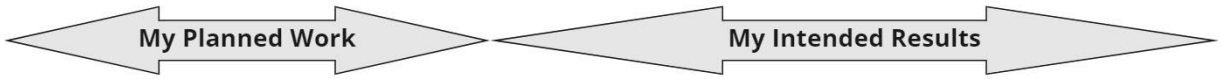
Appendix B: Test Library Science Sign Up Page



Appendix C: Logic Model

The logic model below is presented to help elucidate phases, inputs, and outputs throughout this MMAR.

Inputs & Resources	Activities	Outputs	Short-term and long-term outcomes	Impact
In order to accomplish our set of activities I will need the following:	In order to address our problem or asset I will accomplish the following activities:	I expect that once accomplished these activities will produce the following evidence:	I expect that if accomplished these activities will lead to the following changes in X months (or years):	I expect that if accomplished these activities will lead to the following changes in X years:
Access to web site data Surveys Qualtrics Access to web site	Recon Administer survey to current students Planning Develop intervention Acting Implement intervention Evaluate and synthesize data	Data on possible impact of information provision on web-based student recruitment	Program learns about information provision and how it might impact recruitment	Program makes more efficient use of recruitment dollars



Appendix D: Survey

<<Insert IRB documentation and approval and complete instructions as agreed to with IRB>>

Information Provision in Online Student Recruitment

<<Web Page Image 1>>

Start of Block: Default Question Block

Q1 How would you rate the overall impression of the web page?

- Very Poor (1)
- Poor (2)
- Average (3)
- Good (4)
- Very Good (5)

Q2 Please discuss specifically what about the website led you to that rating.

_____

_____

_____

_____

_____

Q3 How would you rate the use of graphics?

- ○ Very Poor (1)
- ○ Poor (2)
- ○ Average (3)
- ○ Good (4)
- ○ Very Good (5)

Q4 How would you rate the amount of text on the page?

- ○ Much Too Little (1)
- ○ Too Little (2)
- ○ About Right (3)
- ○ Too much (4)
- ○ Much Too Much (5)

Q5 How likely would you be to request more information after viewing this web page?

- ○ Extremely likely (1)
- ○ Somewhat likely (2)
- ○ Neither likely nor unlikely (3)
- ○ Somewhat unlikely (4)
- ○ Extremely unlikely (5)

Q6 Thinking about the web page you've just reviewed, and specifically the amount of information present on the page, does the amount of information influence how likely you are to sign up for an online information session or a prospective student newsletter?

- ○ Yes (1)
- ○ No (2)

Q7 Thinking about the above questions, please discuss the amount of information on this web page and how and why it impacts (or doesn't) whether you would choose to request additional information by signing up for an information session or the prospective student newsletter.

_____

_____

_____

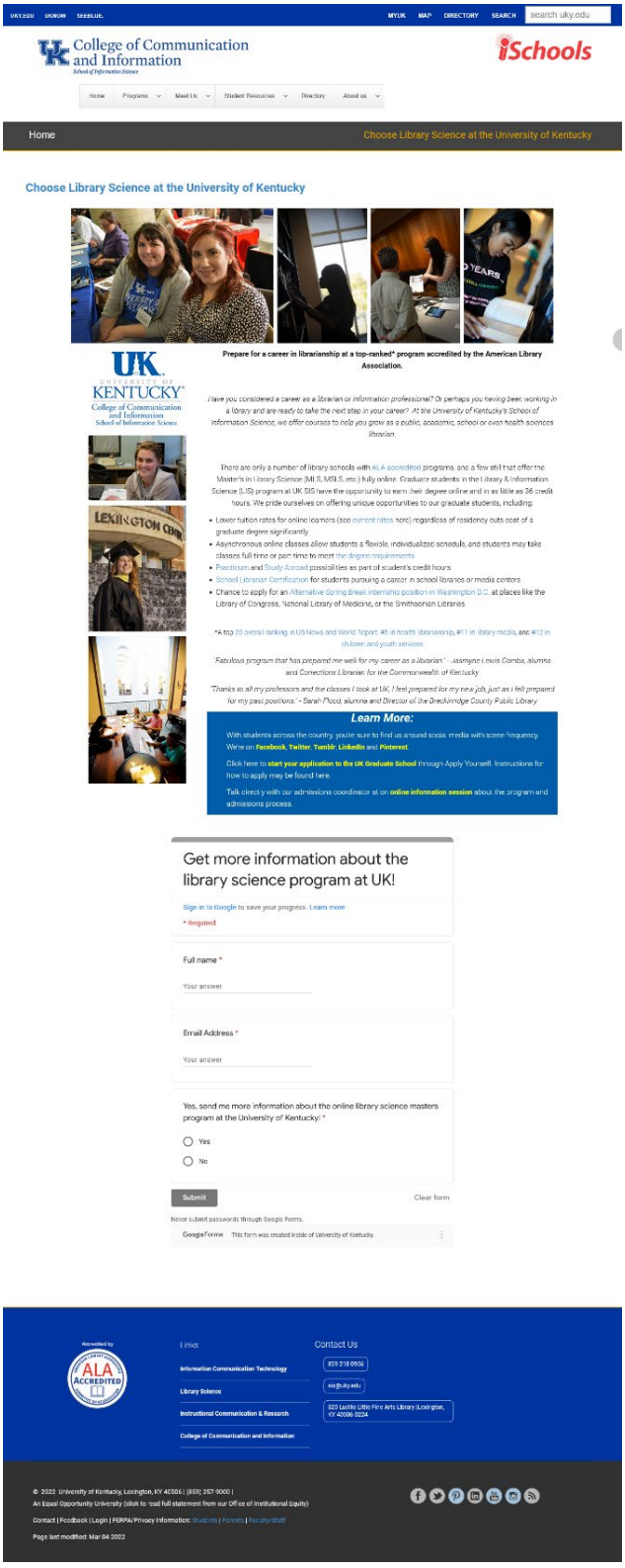
_____

_____

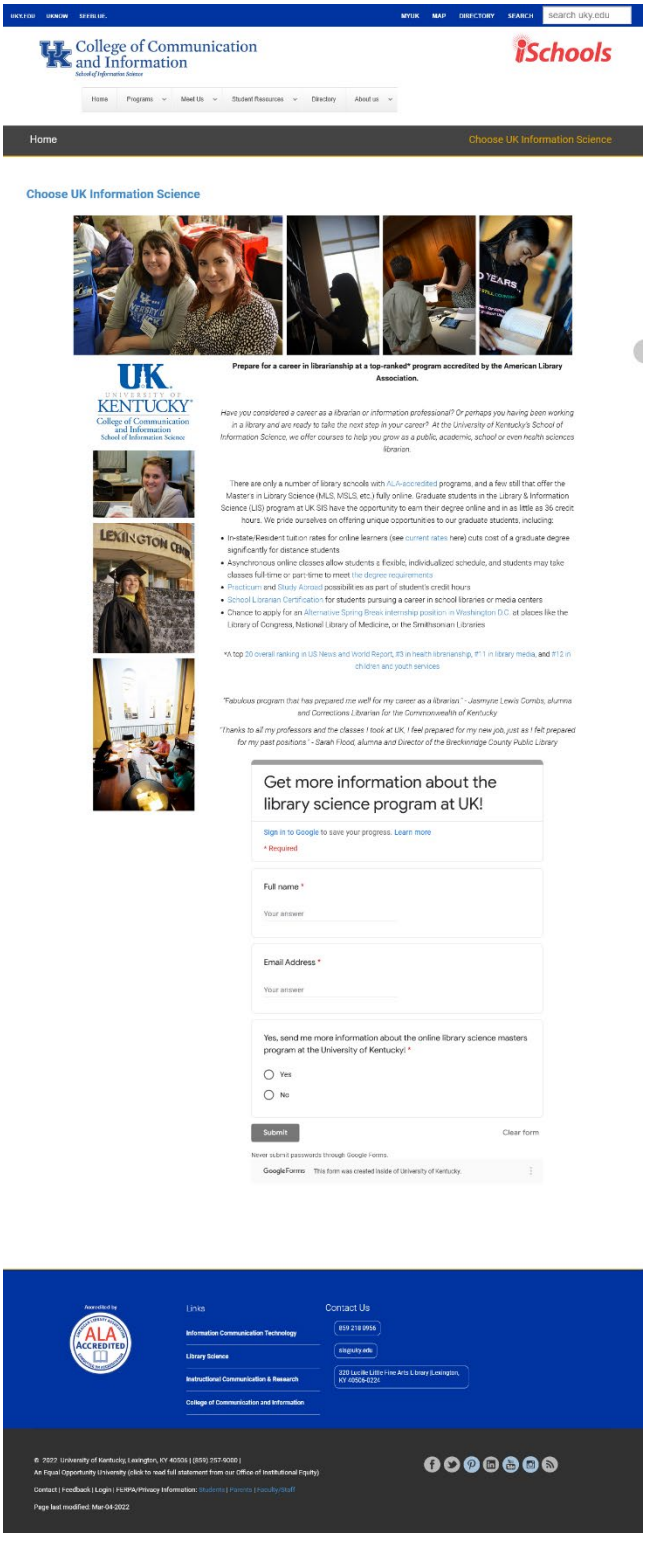
End of Block: Default Question Block

<<Repeat for all Web Page Images>>

Appendix E: Web Page 1P



Appendix F: Web Page 2P



Appendix G: Web Page 3P

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