ANALYZING ARCHIVAL INTELLIGENCE

A collaboration between library instruction and archives

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ABSTRACT

Although recent archival scholarship promotes the use of primary sources for developing students' analytical research skills, few studies focus on standards or protocols for teaching or assessing archival instruction. Librarians have designed and tested standards and learning assessment strategies for library instruction, and archivists would do well to collaborate with and learn from their experience. This study examines lessons learned from one such collaboration between an instructional services librarian and archivist to evaluate and enhance archival instruction in the University Archives' Student Life and Culture Archival Program (SLC Archives) at the University of Illinois at Urbana-Champaign Library. Based on evaluative data from a student survey and in-depth interviews, the authors offer strategies for successfully meeting and exceeding learning outcomes for archival intelligence.

INTRODUCTION

The academy's strategic focus on high impact learning experiences combined with an increasing amount of digitized archival materials boldly underlines the need for collaboration between instruction librarians and archivists. Librarians, in recent years, have joined archival colleagues in embracing primary sources as an effective and engaging resource for developing students' critical thinking and analytical abilities. Over the past decade, the *ACRL Information Literacy Competency Standards for Higher Education* (2000) have been adapted and incorporated across disciplines (Association of College and Research Libraries [ACRL], 2012). However, the library literature has not adequately addressed instructional strategies for teaching the use of primary sources. While science, technology, engineering, and mathematics (STEM) disciplines are well versed in the pedagogical strategy of undergraduate research techniques,[1] the social sciences and humanities are just beginning to explore ways in which undergraduates can contribute to knowledge in a discipline by asking original research questions, examining primary sources, and creating new content. This study provides a model for how instructional services librarians and archivists can share their knowledge, skills, and expertise to facilitate and enable undergraduate research using primary sources.

At the University of Illinois at Urbana-Champaign, the focus on increasing undergraduate research opportunities in the humanities and social sciences has led to a steep increase in archival instruction in the University Archives' Student Life and Culture Archival Program (SLC Archives). Founded in 1989 by an endowment from alumnus Stewart S. Howe, the SLC

Archives "collects, preserves, and makes available materials documenting national fraternity and sorority life and University of Illinois student involvement in fraternities, sororities, student government, religious associations, publications, social events, athletics, and other activities that contribute to the total student experience in higher education." From 2004 until 2012, class use and archival instruction sessions in the University Archives (including the SLC Archives) rose by 94%. Students using the archives to complete a class paper during the same time period rose by 674%. The largest increase of research instruction is due to a general education requirement through the Rhetoric Department.[2] Students taking the introductory rhetoric course use SLC archival materials (e.g., administrative files, student organization records, personal papers, photographs, and other items) to investigate a myriad of topics with examples, including student protests in the 1970s, current dress trends, dining hall dynamics, and inter-racial and cultural relations. Perhaps most importantly, students learn to ground contemporary campus issues in the context of past campus happenings and experiences. Research assignments typically require students to analyze three or four primary sources with additional secondary sources on a topic related to the University of Illinois. The program coordinators for the rhetoric program have worked with the archivist over the past decade to heighten students' experience and knowledge of forming original research questions, using primary and secondary sources effectively, and creating original content.

While the relationship with the rhetoric program has remained strong for over 10 years, an intentional collaboration between the instructional services librarian and the archivist emerged as the SLC Archives

began examining ways to improve archival user education on primary sources, specifically elevating the undergraduate students' competency of archival literacy to the higher level of building archival intelligence as defined by Yakel and Torres:

> A researcher's knowledge of archival principles, practices, and institutions, such as the reason underlying archival rules and procedures, the means for developing search strategies to explore research questions, and an understanding of the relationship between primary sources and their surrogates. (2003, p. 52)

Yakel and Torres (2003) outlined three elements of archival intelligence: (a) archival theory, practice, and procedures; (b) the ability to use strategies to reduce uncertainty; and (c) intellective skills. Each of these dimensions is characterized by specific signifiers of knowledge. For the purposes of this study, the researchers focused on the first dimension of archival intelligence, which is signified by a researcher's (a) understanding of the use of language in archives; (b) internalization of rules; and (c) a researcher's awareness and assessment of his or her own knowledge and the knowledge of the archivist. Because the vast majority of students receiving instruction in the archives were novice researchers, these most basic indicators of knowledge were often difficult for students to acquire, and instruction was specifically targeted to improve these essential understandings of archival research.

This study examines a joint effort between an archivist and an instruction librarian to improve learning outcomes in students' archival intelligence and discusses the results of an online survey and a set of post-

instruction interviews regarding student perceptions of their archival instruction experience. Furthermore, it provides a model for collaboration between instruction librarians and archivists and for beginning conversation about archival instruction assessment. The overarching goal of the project is to implement Yakel and Torres' (2003) vision of user education:

> A movement away from a focus on 'how to do research here' toward a more conceptual understanding of archives and search strategies may provide users with more knowledge and the ability to develop intellective skills to navigate multiple repositories and better identify primary sources from afar. (p. 77)

LITERATURE REVIEW

In recent years, the archival literature points to an increase in using archival collections in information literacy instruction and outreach to undergraduate students. First, in a survey of archivists, Alison (2005) found that 96% of her respondents participated in instruction, most in the form of a one-shot session covering departmental guidelines, use of primary sources, and often structured around a specific assignment. The edited volume, *Past or Portal? Enhancing Undergraduate Learning through Special Collections and Archives* (2012), takes this examination a step further by sharing nearly 50 case studies on instructional practices from colleges and universities all over the United States.

The archives community has offered several justifications for this increase in instructional activity. By outlining the contribution of archivist as educator, Carini (2009) emphasized archivists' roles in sharing skills and experience to teach

document analysis and the research process. Robyns (2001) articulated the value of primary sources in fostering critical thinking skills, and Schmeising and Hollis (2002) contended that using special collections provides opportunities for active or collaborative learning while appealing to students' diverse learning styles. Additionally, McCoy (2010) described instruction that focuses on archives as a source of questions and found that using primary sources fosters critical thinking skills, reduces plagiarism, and produces higher quality student papers. In an effort to see student learning through the archivist lens, Krause (2010) published the results of interviews documenting archivists' own perceptions of the value of using primary sources in the classroom.

Given the increased focus on library instruction, the perfunctory mention of primary sources in the *ACRL Information Literacy Competency Standards for Higher Education* does not sufficiently address how they could be used as a pedagogical tool for information literacy instruction in the archives or special collections environment. However, Stripling (2009) proposed a pedagogical strategy through a model of inquiry using primary sources that "empowers students to develop deep understandings of academic content and a portfolio of thinking strategies and skills that are essential for lifelong learning" (p. 4). Carini (2009) as well as Yakel (2004), Yakel and Torres (2003), and a recent panel that participated at the 2013 ACRL Conference (Smedberg, Dupont, Badhe, Carini & Carter, 2013) have called for the development of information literacy standards for primary sources. The lack of standards has arguably contributed to a corresponding lack of assessment models for archival instruction. Some archivists have compensated for this by collaborating

directly with teaching faculty in order to meet disciplinary curricular needs (Mazak & Manista, 1999; Wosh, Bunde, Murphy & Blacker, 2007; Mazella & Grob, 2011). Krause (2008) reported very low rates of assessment among archivists who provide instruction. Despite these examples, Bahde and Smedberg (2012) noted that "while our colleagues in general library instruction and information literacy have been developing and integrating assessment techniques for years, those of us who teach in special collections and archives settings have been slower to adopt such approaches" (p. 153).

While there is a gap in standards for instruction in archives and special collections, the literature also does not show a great deal of collaboration between archivists and instruction librarians who are more familiar with instructional pedagogies such as active learning strategies and student learning outcomes. Sutton and Knight (2006) offered one example of a special collections librarian collaborating with an instruction librarian to focus instruction on the relationship between primary and secondary sources, and specifically on how they are related in the production of scholarly literature and disciplinary knowledge. Yet, there are no published reports of archivists and librarians collaborating, though Alison (2005) called for this several years ago. As Westbrock and Fabian (2010) pointed out, librarians have been thinking about teaching competencies for several decades, while archivists are just beginning to consider these issues.

HISTORY AND CONTENT OF CLASS SESSIONS

Each semester, the archivist teaches approximately 200 students as part of the undergraduate rhetoric general education curriculum, a subset of the larger rhetoric

program. In these courses, students ask original research questions and use primary and secondary sources to engage in an intensive, research-based, academic writing exercise. The archivist begins the instruction session by drawing upon the pedagogical strategy of flipping the classroom by strongly encouraging course instructors to assign students an online primary source tutorial, *Primary Source Virtual Information Literacy Learning and Growing Environment (VILLAGE)* (University of Illinois, 2006), before they attend the in-person session held at the SLC Archives. The *Primary Source VILLAGE* was "created using materials from [the SLC Archives] holdings, defines a primary source, provides information about using the Archives' online database, and walks the student through an exercise on analyzing a primary source" (Swain, 2013, p. 154). In addition, the course instructor receives an optional lesson plan designed to engage students in the reading and interpretation of primary source documents in a classroom setting, including four sets of primary source documents, question sets for each set of documents, and material related to the historical context of the documents.

The archivist has taught the in-person session following the same format for several semesters. First, the archivist provides a brief description of the archives' purpose and founding, an overview of the types of materials held by the archives, and a short discussion of the job responsibilities and activities carried out by the archivist (including a plea to students to become part of the university's history by depositing their organizational records and personal materials). Next, to illustrate the myriad types of primary sources available, the archivist shows examples of student administrative and organizational records and personal papers, including scrapbooks,

letters, photographs, guidebooks, student produced publications, and ephemera. While presenting these examples, the archivist emphasizes the difference between library and archival research both in terms of type of materials as well as organization, rules, policies, and procedures. The final portion of the session addresses how to search the archives database, Archon,[3] as well as to utilize finding aids and research guides on the SLC Archives website.[4] Finally, the archivist leads the class through a database search and describes the relationship between the online finding aid and the physical box and/or folder by accessing a finding aid on screen and physically showing the students the relevant box it represents at the table. The class concludes with a discussion of individual student's paper topics and further exploration of highlighted materials.

METHODOLOGY

The following study examines the students' perceptions of their library instruction experience. Specifically, this research study measures how students learn as part of archival instruction while identifying instructional weaknesses and provides a model for assessment. In order to accomplish these objectives, the authors surveyed all students who participated in class instruction sessions in the SLC Archives during the fall 2012 semester. Students who indicated use of the SLC Archives materials in their research were contacted for a more extensive interview about their research process.

After receiving approval from the university's Institutional Review Board (IRB), the authors applied for and received funding from the University Library's Library Research and Publications Committee (RPC). The RPC awarded funds

to hire a graduate assistant to complete interviews and transcribe and compile interview data. Additionally, funds were provided to purchase $30 Amazon.com gift cards as incentives for student participation in the survey and the follow-up interviews.

Eleven classes (approximately 220 students total) from the undergraduate rhetoric program visited the SLC Archives for an instruction session taught by the archivist in fall 2012. The authors contacted six instructors (some instructors were responsible for multiple sections) in early October to explain the study objectives and request participation. Classes included nine Rhetoric 105 classes, one Rhetoric 103 class, and one Ethnography of the University Initiative[5] history class. In early December, the authors emailed the instructors again and included a link to the online survey. The student invitation described the purpose of the survey, the length of time to complete the survey (approximately 10 minutes), and the time period when students would be contacted to participate in the follow-up interviews. All instructors indicated they had forwarded the email to their students and encouraged them to take the survey. Students were given two weeks to complete the survey. Authors sent one reminder at the end of the first week. Participation was voluntary, and all participating students signed an online consent form.

Twenty-four students completed the online survey for a completion rate of 11.4%. The authors collected identifying participant data in order to recruit participants for the interview process. The students who indicated use of the SLC Archives in their research project were identified, and this information was deleted from the survey

results. Participation in the interviews, again, was voluntary. For the initial survey, the authors ran an online random number generator to choose one student for a $30 Amazon.com gift card. Based on survey responses, the authors contacted the eight qualifying students[6] via email to invite them to participate in a 30-minute interview.

For the second part of the study, researchers conducted post-instruction interviews in order to gain insight into the students' impression of the impact of library instruction on their research process using the SLC Archives. Four of the eight students identified agreed to participate in the interviews. From January to March 2013, the instructional services librarian and the graduate assistant met with each interviewee in a public conference room in the University Library. Since the archivist taught the instructional sessions, she did not participate in the interview process so that her presence would not influence the students' responses. Interviews were scheduled for 30 minutes, but most were completed within 15 to 20 minutes. The authors recorded interviews using a digital recording device, and all data were transcribed and kept on a secure library server. The investigators manually coded all identifying participant data to ensure confidentiality. Care was taken to verify that coded themes accurately reflected the statements of the interviewees. Students chosen to participate in the interview process each received a $30 Amazon.com gift card at the end of the interview process. The students represented a variety of majors (see Table 2), and all were first-year students taking the required rhetoric course.

FINDINGS FOR ONLINE SURVEY AND POST-INSTRUCTION INTERVIEWS

The online survey asked students three questions in order to gauge the impact of the archival instruction session on their assigned semester course work.

It is not surprising that a high number of students use online searching tools to find materials for their research. Developed at the University of Illinois Archives, Archon is an internationally utilized software that enables archives and special collections to publish holding descriptions and to link to electronic records on the web in searchable database form. After the in-person session during which the Archon database was introduced, a high percentage (83%) of students used it to locate research materials for their assigned project. However, even with detailed instruction on how to use the Archon database 17% of students chose not to use it as a research tool. In addition to or instead of Archon, it is likely that students used library databases they were already familiar with and Google, but the survey did not specifically ask them which other online searching tools they used to complete the assignment.[7] More than one-third of the students who participated in library instruction at the SLC Archives (38%) returned to use the primary sources in person. Although the instruction session familiarized students with the research procedures of the SLC Archives, 54% (and possibly the 8% who chose not to answer the question) did not return to use the SLC Archives. The researchers speculated that one reason why students may have chosen not to return to the SLC Archives for research materials was because the location is one mile from the main campus. The number of students who did use resources from the SLC Archives in their final papers, online, and hard copy materials was evenly split among the survey population at 50%. (See Table 1)

The survey also asked a single open-ended question, "Can you briefly describe the difference between doing library research and archival work?" Students showed vast variance in their understanding of the archives. The responses reflected Yakel and Torres' (2003) first element of archival intelligence, albeit on a beginner's level: knowledge of archival theory, practice, and

TABLE 1—ONLINE SURVEY RESULTS

Question n=24	Yes	No	Prefer not to answer
Did you use the Archives online database Archon (see: http://archives.library.illinois.edu/archon/) to search for research materials?	83%	17%	n/a
Did you return to the SLC Archives after your library instruction session?	38%	54%	8%
Did you use any materials from the SLC Archives in your final paper?	50%	50%	n/a

procedures. This element contains three indicators: use of language, internalization of rules, and awareness of knowledge.

USE OF LANGUAGE

Yakel and Torres' (2003) first indicator of knowledge of archival theory, practice, and procedures is understanding archival language. Language can be a significant barrier for students encountering the archives for the first time; "Language indicates an ability to distinguish between libraries and archives and to grasp differences in the access tools and information sources each provides" (p. 64). Two students surveyed showed initial understandings for how language differs in an archive from performing library research. For example, one student said, "Library research basically focuses on words searching, which is limited in a way. The archive work provides not only words but also pictures, interviews and even the real objects left by people before." Another student expressed an understanding for accurately developing his research question: "For archival research, you need to have a pretty good idea of what you want to find." One student expressed a lack of sufficient materials, suggesting an inability to construct a successful search strategy for materials in the archives: "I used the archives mainly for photo's [sic] there was not much I could find on my topic." One student was able to grasp the difference between primary and secondary sources when stating, "Archival work is more looking at primary sources while library research looks more at secondary sources." Another student shared awareness that a mediator was necessary in order to successfully locate materials in the archives; "Archival research requires an expert to help find the proper data and then you have to sift through it." Instruction can help

students understand the language that archivists use in organizing primary sources, which will, in turn, increase their understanding of the differences between archival and library research.

INTERNALIZATION OF RULES

The second basic indicator of knowledge of archival theory, practices, and procedures, as explained by Yakel and Torres (2003) is becoming oriented with the rules of the archives:

> Rules directly affected the ability to do research and often disrupted long-established research patterns and routines. Archival rules created the need to develop new research strategies and eliminated the ability to browse, a major strategy in libraries and on the Internet. (p. 66)

Qualitative data from the survey indicated that the students demonstrated an elementary understanding of the operational procedures of the archives. For example, one student understood the fragility and site-only use of archival materials. "You have to be much more careful with the archives, you must keep the archives in the proper order, they are arranged by number, you can only look at an archive [sic] in the Center, you CANNOT 'check' it out." While several students see library research as something done primarily online, a few understood the distinction that the archives provide unique hands-on resources as well as serendipitous finds:

> I feel that when doing library research, I am mostly using online databases and very rarely would I ever get my hands on the actual material itself. Obviously, this is not necessarily a bad thing since there is

a lot more information online nowadays than there was 5 years ago. However, reading books and doing research straight from books does have it advantages like the fact that you may come across some information that you may not have intended to. Online sources are often extremely specific to what you want to find. Archival work is similar in the sense that you can find a lot of things that you may not have been necessarily looking for.

Instruction that explains what to expect in terms of services as well as expectations in the archives can go a long way in helping students surmount the anxiety of doing research in a new environment.

AWARENESS OF KNOWLEDGE

Navigating the archives is a complex process, one that archivists are highly trained to do. Yakel and Torres' (2003) third indicator of knowledge of archival theory, practice, and procedures is an "awareness of the limits of one's own archival intelligence and the ability to identify the limits of knowledge in others, particularly reference archivists" (p. 67). Archival instruction by itself will not bridge the divide between the archivist and the neophyte researcher. However, exposure to the archives does aid in improving the communication skills necessary to facilitate a successful research experience. One student described his perception of the difference in experiences: "A lot of it isn't electronic, so it's a lot of sitting down and sorting through all of the extra stuff to find the right one."

Another student understood the unique

content that is curated by the archives; "The library can't give me student-created content that was necessary for my research topic. I needed to collect information on what students were doing 20 years ago, but I needed specific student examples, which the library cannot provide." Disintermediation between librarians and undergraduate students due to online content may have also had an impact on how students see archivists. One student, who has worked independently in the past without help from a librarian, understood the importance of working with an archivist to complete her research; "I think library research was easier than archival because I'm able to do everything by myself at the library, and when I went to the archives I needed someone to get the information for me."

And finally, two students expressed an interest in archival versus library research, one stating, "I found archival work to be more interesting than library research. It seem [sic] as if one object led to another, I wanted to keep finding more. I felt like a detective trying to find clues." Another student demonstrated an understanding that primary sources allow researchers to develop their own opinions. Perhaps most interestingly, one student hinted at the impact instruction had on her understanding of performing archival research. "The only difference is that library research is more convenient. Archival work would surely be just as informative and probably more interesting. I'm just used to library research so that's what I've been sticking to." While students may have gained limited library research skills in high school, few indicated experience with primary source research. Clearly, exposure to the archives fostered an awareness of the complexity of archival research in the students interviewed.

POST-INSTRUCTION INTERVIEWS

The post-instruction interviews were intended to provide context to the survey, allowing the researchers to ask more in-depth questions regarding students' understanding of their instructional experience in the archives. (See Appendix for interview questions.) The four students who participated were enrolled in the general education rhetoric course and represented a variety of STEM majors. (See Table 2.)

The transcripts of the interviews were analyzed for recurring themes, with particular attention to identifying weakness in the students' learning experiences while thinking about what could be *improved* in archival instruction. Six themes emerged from the interviews.

Theme 1: Confusion between archives and the library
One particular focus of the lesson plan was to highlight the difference between an archives and the library. Several students

explained how their courses in STEM disciplines do not rely on library research. For example, one student reported that "til [sic] now we have not had to do a research paper." Another stated, "I haven't done much research yet." As a result, their responses clearly indicated confusion between the types of material the archives house and the types of material that can be found in the library. In trying to explain how library research was different from searching the archives, one student compared searching databases to performing scientific proofs:

> So, I never really used a database for anything. So, it was like, um, it was good because all the articles that I searched for were peer-reviewed, and also you didn't have to care about if they're legit, because that's like a guarantee when you filter it out to having peer-reviewed articles. Because, that's something – that's a proof. (Student #1)

Still others had trouble expressing how the archive was organized:

TABLE 2—STUDENT TOPICS AND ARCHIVAL SOURCES USED

Student	Student Major	Paper Topic	Sources Used
1	Electrical engineering	Campus history of teaching assistants	School newspaper article (digital), photograph, and personal interview
2	Molecular and cellular biology	UIUC diversity issues	School newspaper (print)
3	Electrical engineering	UIUC sorority women during WWII	Oral histories, school newspaper (digital), and photographs
4	General engineering	Campus memorials and the Morrow Plots	Personal letters and journals, school newspaper (print)

I think it's, um, organized by type of materials. Like newspapers, I-books [student calendar and appointment books produced by the YMCA prior to the 1950s] and whatnot. And then within each of those, like, categories, you have like separate time frames and other topics. Um, so I think that that's the main organization system. I don't think I saw anything different other than that. (Student #2)

Um, I don't really know how they are organized. I just typed in. I know that they're boxes, is what they came in, with different categories. So I'm assuming, I would say the boxes are categorized by whatever they're about, and then those are categorized in some way. (Student #4)

A significant omission here was that none of the students mentioned or even came close to approximating the concept of provenance. One way to address this misconception would be to add an active learning exercise that would more rigorously demonstrate how materials are organized by the person or organization that created them (e.g., provenance).

Theme 2: Analyzing argument/ perspective of documents

One of the more complex competencies to teach in a brief instructional session is the ability to analyze the argument or perspective put forth in a specific archival document. Determining historical context is one of the most useful skills an archivist can share with a researcher. One student demonstrated critical thinking skills by articulating how her topic was perceived at a time in history:

I read through the whole thing. And, it was more like – it was more the

content, rather than just having the word 'TAs' [teaching assistant] in it. Because the newspaper article talks about how, um, at that time, having – there were only graduate TAs. They didn't even have undergraduate TAs at that time. So how some people looked at it – that's what the article said – that the university is compromising on the academic standards by having students teach. (Student #1)

One student was able to express the difference between doing archival research using the complexities of her discipline, molecular and cellular biology, as her frame of reference:

Whereas in science, it's much more like one thing. Like, this is correct and that's not. That's usually it. So, you have to read a lot of different viewpoints to gather what you are trying to like – to help you form what your viewpoint is. Whereas in science, I feel that you're just trying to find evidence for your one – for that one viewpoint that there is. And often times, there's a lot of evidence for that one viewpoint. (Student #2)

Another student expanded on this idea by expressing recognition that the past can bring perspective to the humanities while science is based on the most up-to-date research:

Archives are mainly the past. It contains the materials than have happened, and you're looking through it, and then discussing our point of view. In engineering we look through different – the recent research that is happening, the updated technology. So we mainly

look through the present, or like the future. And try to go into the future. (Student #3)

Seeing history through primary sources engages students from all disciplines in inquiry-based learning. One student recounted an experience using personal letters and speeches:

> I would look through them and see who wrote them because if it was a journal entry from Gregory,[8] I would see that, to see his thoughts. And if it was letters about him, he had some of his speeches that he had given, and I knew they would be really related to my research. So I kind of looked to see who wrote them, and if they had a title of some sort to see what they were. And from there I would just skim over them to see if I found any words that popped out that I knew I needed. And after that, I would kind of look further into each article. (Student #4)

Overall, students demonstrated a basic understanding of the importance of critically examining the perspective of archival documents, though they did so at a basic level. This suggests that fostering critical thinking, which is ultimately relevant to all disciplines, is an area to which archival instruction can contribute. One way to improve the lesson plan could be to include modeling this process for students through a document analysis exercise or to go through the steps as outlined in the *Primary Source VILLAGE* tutorial, module 3, together in class using a sample document reproduced and distributed to each student.

Theme 3: Availability of digital primary sources

Research using primary materials is now easier than in the past due to the increasing number of documents being scanned and indexed online. Yet, students are still waiting for the day when everything is searchable and viewable online. One student understood that materials are not ubiquitously available online. "Sometimes I just wish we had much more available online." (Student #1) Another student mentioned the mediation of the archivist from the instruction session and recognized the work that goes into putting primary materials online:

> And she [the archivist] said also – she showed us and walked through with us the research process, looking for stuff. And that was really streamlined, and thought that was really helpful, putting all the physical archives and all of that into a digital format was really helpful for all the students. (Student #2)

Yet another student recognized the role of the archivist in the SLC Archive and her expertise in finding the materials as they were indexed in the database:

> Well, the online resources were quite organized because if you type in certain topics, and, um, search words, then you get specific documents that are related to that. And even she [the archivist] explained that the documents that were present over there, like those old transcripts and all that were quite preserved and if you asked them, they would help you get to all the documents. (Student #3)

While students understand that not everything is online, they prefer to use what is most easily available. Attention should be paid to the kinds of collections available

online locally, but it is also worth considering introducing students to online repositories found elsewhere.

Theme 4: Understanding of archival use policies

Arguably the largest hurdle in convincing undergraduate students to use archival materials for research is dismantling the misconceptions that using materials on-site is a difficult process. One student explained her understanding of the SLC Archive use policy:

> I think, she [the archivist] said, like all the resources are there for us to use. And, but they are fragile so you have to take care of it. But she said most of everything was really available, so if you wanted something, you can ask for it and you'll get it. It was really accessible. (Student #2)

Another student articulated his successful experience with searching and working with the archivist:

> You typed in what you needed, and then you got it. So I thought it was fairly simple, and then the archives workers knew what they were doing, so if you needed help, I would be able to say, "I need this." And they were able to find it for me. So at least [sic] give me ideas of where to look and what to look for. (Student #4)

Overall, students came away with the impression that the archives' staff was approachable and knowledgeable and that restrictions on access and use were minimal. The lesson plan could be improved by aligning the use policies and their justifications (e.g., preservation for future

use) while also illustrating the importance of proper care by showing material damaged by use.

Theme 5: Transferrable skills

The students from this study all came from STEM disciplines; and, therefore, this course was their first exposure to using archival materials. In building lifelong learning skills, students should have an understanding about how to find all types of research materials, regardless of where they are housed or how they are organized. Exposure to the SLC Archives had an impact on one student who said, "Once you know you have access to so much, like, you can actually see the importance of that resource once you've used it" (Student #1).

Another student described how this new experience contributed to her overall research skill set:

> I think any research you do in any field, you can always use techniques you learned. Um, like, it helps me feel – it helps me, like, want to see, like, what exactly I'm looking for, like, every time you do research, you learn something. Like, this will help me look for the specifics. (Student #2)

Continuing to demonstrate to students how the ability to navigate information systems and evaluate the information they find is another area to which archival instruction can contribute. The lesson plan should look for further ways to demonstrate how critical thinking and writing skills are applicable to all disciplines, including STEM.

Theme 6: Genuine interest in history

Working with archival materials brings context to the student experience. Students reflected on their experience in the SLC

Archives, which awakened an interest in doing research in new ways:

> So I liked the kind of argument that the article had, depending on that time, like the argument that probably though right now is not about the economic benefits of the university, but rather how much the students benefit it terms of qualities and things like that. So it was nice to see like what it was then, and what it is now. (Student #1)

> And that's where having something like an archive might help because if you want to go back and see how much we've progressed, it helps in that. (Student #1)

> But I do remember taking some articles from the 60s. They were really interesting. They were about, just, the African American population on(or at?) the university, and different programs for international students. (Student #2)

Because the majority of students are intrigued when they encounter *the stuff* in archives, archivists should continue to cultivate relationships with undergraduate instructors in a wide variety of disciplinary departments in order to expose more students to the unique materials found in archives.

DISCUSSION

The purpose of the survey in this study was to identify a pool of students who used the SLC Archives for in-depth interviews and to begin to identify themes related to archival intelligence. There are limitations to the scope of this study. First, there was a small pool of interviewees, and all four students

represent science-related fields. Second, there were constraints on the instruction offered, including a short-time commitment for sessions (60–90 minutes). Third, many instructors requested that sessions be kept to a basic introduction to the SLC Archives. Fourth, while instructors say they have covered primary sources during class time, the archivist is not in the room to understand exactly how this material was taught. For future sessions, this instructor involvement could be capitalized upon, providing the archivist with an opportunity to collaborate with the instructor on curriculum development. Improving student learning outcomes will require a more intentional partnership between the archivist and the instructor, one that may benefit greatly by including the instructional services librarian.

However, while the pool of interviewees was small, the emerging themes provide a starting point for instruction librarians and archivists to find common ground in the classroom around Yakel and Torres' model of archival intelligence. There were several problematic areas identified by the students that the instructional services librarian and the archivist could address with a thoughtful re-consideration of the lesson plan. The students provided reaffirmation that improving skills around archival intelligence is a hurdle that is beginning to be addressed by instructional efforts in the SLC Archives but that new opportunities emerge by the very nature of student disciplines and the increasing frequency of online primary resources.

The ongoing issue of misunderstandings regarding the difference between archives and libraries exacerbated students' understanding of Yakel and Torres' first element of archival intelligence. In other words, students lacked sufficient archival language skills; they were only beginning to

understand the use policies in place in the archives, and they were in the elementary stages of negotiating a relationship with the archivist. A concrete example of how deep this misunderstanding runs was the fact that all of the students who participated in the interview process failed to correctly answer how archives are organized (e.g., by provenance, the person/organization that created the documents) and instead thought materials were organized by format or subject matter. They did not use the proper language to describe archival organization, but most were able to recognize the role of the archivist in this process. This suggests that describing archival organization to students in a lecture format might not be the most appropriate way to convey organizational information, nor may one interaction be enough to explain the complexity of archives. Though the focus of this study was on improving students' grasp of the first element of archival intelligence, some of the results suggest how the elements of archival intelligence are interrelated and might need to be considered holistically in designing future instruction.

Second, students came to the SLC Archives with only the beginning of a research question. In fact, archivists are faced with the reality that students usually "Google it up," as one student mentioned, when facing a research problem. The process of structuring ill-structured problems is part of the undergraduate experience of taking a required general education course. Yakel and Torres (2003) explained this as the second element of archival intelligence: strategies for reducing uncertainty and ambiguity in archives. They stated, "This is true in archives because the existence of evidence is often unknown, the access systems are complex, and/or much of the evidence requires interpretation and itself may be ambiguous" (p. 69). For many

students, especially those in a STEM discipline, this is their first time in a research situation using archival materials. By teaching students how to search the Archon database, the archivist was able to explain how to find materials in the SLC Archives and how materials are arranged and described in relation to who or what body created them. The archivist could look for opportunities to increase students' ability to better structure research questions through the searching process. The skills related to refining search tactics and asking questions is key to improving archival intelligence.

Third, the intricacy of archival problems and using primary sources to answer complex research questions can be illustrated through Yakel and Torres' (2003) third element of archival intelligence, development of intellective skills, "the ability to understand the connection between representations of documents, activities, and processes and the actual object or process being represented" (p. 73). One way the archivist currently approaches this problem is by showing students how record series are organized by creator and aligning that specific record with the corresponding item. The lesson plan could further develop active learning strategies in order to teach students the ways in which surrogates represent primary sources so students can more effectively find what they are searching for. Furthermore, at this stage of the undergraduate learning process, one should expect students coming to the archives to have only the beginning questions of a research topic ready. They will not be able to anticipate what they may or may not find. Students are limited by their inability to ask the right questions because the SLC Archives is so complex. Also, students' reliance on keyword searching suggests that they lack an

adequate understanding of the representational relationship between finding aids and archival documents described. For example, several of the students interviewed resorted to newspaper articles, resources in a format that they understand instead of delving deeper into the collection of many other primary sources in the SLC Archives. Clearly, more needs to be done to encourage students to move from a general topic to a well-formed research question.

Finally, there may be more opportunities for flipping the classroom in the instructional situation by allowing class time to be devoted to exercises that increasingly develop the working relationship between the student and the archivist. For example, orientation to access tools and repository rules could be covered online in the same manner that the course instructors prepare students to visit the archives by taking the Primary Source VILLAGE. Currently instruction in the SLC Archives goes one step beyond user orientation but not far enough to claim user education for archival intelligence skills. We posit that the basis for improving students' experience in the archives as well as their archival intelligence relies on improving their working relationship with the archivist. Whether correct in their assumptions or not, students often assume they are proficient in library research. According to one student, "Library research is easy to do and can be done by one's self." However, as noted by Yakel and Torres, serendipitous searching is necessarily mediated by the archivist. Students cannot browse an archival collection in the same way they can in a library or online; however, "Once the rules are learned, a researcher can devote more mental resources to thinking about the research problem and to developing specific archival research strategies" (2003, p. 67).

CONCLUSION

This study's findings, a first assessment of the SLC Archives' instructional program, indicate that the archivist needs to develop new techniques for engaging students with SLC archival materials enabling a better understanding of the policies, procedures, and theories that govern their arrangement, access, and use. Although the archivist's instruction sessions covered the issues of archival theory, practice, and procedure, survey and interview results showed that students need more assistance in obtaining the necessary level of understanding of archival arrangement and research.

The results of this study indicate that developing an information literacy program around archives will take more than a one-shot visit by undergraduate students. While our focus was on the first element of archival intelligence—knowledge of archival theory, practice, and procedures—Yakel and Torres (2003) discussed two additional elements for consideration: strategies for reducing uncertainty and intellective skills. Students in this study struggled to grasp the first element of archival intelligence, and, consequently, there is evidence that more needs to be done to incorporate all three dimensions of archival intelligence into instruction. That is, these three elements are not necessarily hierarchical, but are interrelated understandings that students acquire gradually. Therefore, there are several opportunities for archivists who teach: (1) more aggressively borrow pedagogical strategies from colleagues in library instruction and incorporate more active learning exercises into instruction; (2) partner closely with course instructors in developing and team-teaching curriculum; (3) further develop online learning opportunities in order to better prepare

students before they visit the SLC Archives; and (4) consider alternatives for how instruction can more accurately model the archival research process for undergraduate students. As the academy continues to explore and create high-impact learning experiences, undergraduate research opportunities in the social sciences and the humanities may provide the structure for archivists to move beyond primary source orientation to a comprehensive information literacy strategy for archival literacy.

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ENDNOTES

1. Undergraduate research is defined by the Council on Undergraduate Research as "an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline."

2. All freshman are required to fulfill a composition requirement as part of the General Education curriculum. Students are placed into a Composition 1 course based on their ACT scores, major, and international status. Twenty per cent test out of the requirement; others take an ESL, communications, or rhetoric class. In fall 2009, the Undergraduate Rhetoric Program developed an e-textbook, which includes primary source and secondary source units. Although only new instructors are required to use the e-text curriculum, almost all section instructors choose to use it. The Archives provides instruction concerning the use of primary sources and the

Undergraduate Library provides instruction concerning library databases and other resources. The two library units' instruction programs operate separately.

3. http://archives.library.illinois.edu

4. http://archives.library.illinois.edu/slc/

5. For information about the Ethnography of the University Initiative (EUI), see: http://www.eui.illinois.edu/

6. Students who used the SLC Archives as part of their research after they participated in the in-class library instruction session.

7. The survey was used primarily to gauge understanding the difference between library and archival research and as a tool to identify interview participants.

8. University of Illinois's first Regent Milton Gregory (1867–1880).

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APPENDIX

Interview Questions

1. Can you describe your instructional experience from the class session at the Student Life and Culture Archives?

2. Is there anything that you still find confusing about doing research in archives?

3. Please describe how you understand the archives to be organized.

4. Please describe your process of finding documents in the archives and how you used them in your research.

5. What criteria did you use to evaluate the documents you found in the archives?

6. What was the most interesting document you encountered in the archives? What did you find interesting about this item and did you include it in your final research paper?

7. How was using the archives different from work in other courses you have taken, or from conducting research in a library?

8. Could you see yourself returning to the archives for another course or assignment in the future?