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This paper presents findings from a study that explored obstacles undergraduate students who are novice users of archives face when using online finding aids, and to what extent these barriers negatively impact their ability to use finding aids to access primary source materials. A usability study of four different finding aids was conducted with eight undergraduate students from the University of North Carolina at Chapel Hill. The study participants completed a set of tasks with the finding aids in individual sessions, which were recorded. Then participants were asked while reviewing their recording in a stimulated recall session to describe any characteristics of the finding aids that posed a particular challenge or that made using them easier. Although participants faced barriers, particularly in the language, organization, and visual presentation of finding aids, as a whole the subjects performed well and were able to answer most of the questions in a reasonable amount of time. Two factors that helped the novice users use the finding aids were reliance on general computer and web navigation skills and taking the time to learn about the organization and structure of the finding aids.

Headings:

Archives/Cataloging

Use studies/Internet resources

End-user searching

Finding aids

A QUALITATIVE STUDY OF THE EXPERIENCES OF NOVICE
UNDERGRADUATE STUDENTS WITH ONLINE FINDING AIDS

by
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Introduction

Archivists have long been calling for increased understanding of archival users through quantitative and qualitative testing (Berner, 1971; Conway, 1986; Maher, 1986), but there still exists a chasm between what we think we know and what we actually know about users. Limited studies of archival users have been conducted (Prom, 2004; Yakel, 2004; Scheir, 2006), but the archival community still has much to learn about the needs of its users, particularly its non-traditional user groups. Increasingly, high school and undergraduate students are expected to locate and incorporate primary sources into class assignments in diverse disciplines (Matyn, 2000; Lampert, 2005; Roff, 2007). The vast majority of students have little or no “archival intelligence,” the term coined by Elizabeth Yakel and Deborah Torres to describe a person’s familiarity with archival terminology and practices, but they are expected to identify primary source materials and incorporate them into their academic work (2003, p.52). A large amount of information from archives is available to students today on the web, but it is uncertain if students are able to navigate this information effectively without the mediation from archivists traditionally available to on-site archival users. This study examines whether inexperienced undergraduate students face insurmountable challenges when using finding aids, or if they are able to work around their lack of archival expertise.

Studies of the information needs of archives users thus far have primarily focused on the needs of scholars, professors, or graduate or doctoral students, but an increasing group of archives users are younger (Matyn, 2000; Lampert, 2005; Roff, 2007).

Undergraduate students and even K-12 students are using more primary sources today than in the past (Hendry, 2007). Diminished barriers to access and encouragement by educators, archivists, and librarians have played a role in the increase of undergraduate and K-12 archives users. Many of today's educators, particularly in history and the humanities, believe that there is a "special value" in having students conduct research in archives with primary source materials, and incorporate the use of archives into course curricula (Matyn, 2000; Lampert, 2005).

Because of the ubiquity and convenience of the Web, many archival research inquiries begin (and sometimes end) with an online search for primary source materials. Undergraduate users may believe that they know how to search online for resources, but many lack training or understanding of how to find information effectively. Earlier finding aid user studies suggest that different archives users are confused by finding aids' archival jargon and structure (Prom, 2004; Yakel, 2004; Scheir, 2006). Undergraduate users may experience similar problems, which possibly may be exacerbated by having less research experience in general. Although undergraduate use of archives is on the rise, the information needs of undergraduate users have not yet been studied in the archival community.

It is particularly important to find out if undergraduate students who are confused by finding aids are turning away from archives before they ever reach any primary source content because of frustration or confusion with finding aids. History educator Sandra Roff noted, "although many [finding aids] have been made available online, without the benefit of instruction by a qualified archivist, students may not be able to navigate them to their best advantage" (Roff, 2007, p. 553). Some novice users are undoubtedly

reaching finding aids directly through Google and other search engines, and may not be aware of resources on a repository's home page that could help them answer questions. Novice users who cannot find what they are looking for on their own might give up without contacting or knowing how to contact an archivist for help.

This research aims to provide insight into the needs of undergraduate students and young or inexperienced archival users in general through a small-scale usability study of finding aids with undergraduate students who are novice archival users. Eight study participants took part by answering a set of four questions about four different finding aids, and were then asked to provide feedback about their experiences in a stimulated recall session, in which a recording of their actions while taking the test was played back for them. Participants were asked to reflect on what qualities of the finding aids helped or hindered their ability to answer the questions and to use the finding aids in general. Although this study is limited to a small group of individuals who share similar characteristics, conclusions drawn may reflect on how other user groups interact with finding aids.

Literature Review

While moving away from their traditional custodial role over materials toward a more user-centered role within the past thirty years, the archival community has expressed an increased interest in learning more about its users and how they can be better served (Pugh 2005, p. 21). Several users studies have been conducted that specifically examine online finding aids. While the number of user studies conducted in archives remains small in comparison to user studies in libraries, interest in archival users continues to grow, as evidenced by the increasing number of articles that argue for conducting more user studies. This literature review section includes a summary of user studies in archives and a more detailed look at user studies of electronic finding aids

Archival User Studies

Archivists in the 1980s began expressing a greater interest in understanding archival users through research studies. Paul Conway presented a framework for studying users in “Facts and Frameworks: An Approach to Studying the Users of Archives” (1986). Conway recognized that different users needed different levels of guidance. He promoted the idea that archivists should find out the needs of different user groups through user studies, and thought that better understanding of the needs of different groups could lead to individualized reference services that were tailored to different types of users. Conway also supported improved access through better subject access points in databases so users could be more self-sufficient in searching for primary

source materials. Taking the idea of fostering user self-sufficiency a step further, Bruce Dearstyne called for an automated search system for primary source materials in his article, “What is the Use of Archives? A Challenge For The Profession” (1987). He believed that archivists should improve access tools so users could better find primary source materials.

By the late 1990s, archivists were particularly interested in learning about how archival users interacted with new electronic search systems. Wendy Duff and Penka Stoyanova described the results of a focus group study on archival display systems in their article “Transforming the Crazy Quilt: Archival Displays from a Users’ Point of View” (1998). The study participants discussed and evaluated six different archival information displays; one was designed by the researchers based on bibliographic guidelines, one was an EAD display designed by students, and four were existing displays created by archives. The same content was used in all of the display systems. The study uncovered problems with the participants’ ability to interpret information about physical description and dates of creation and with archival terminology, particularly the word “fonds.” Information in the content systems included biographical and content descriptions but not finding aids; however, this study paved the way for electronic finding aid user studies.

Although more archival user studies had been conducted through the 1990s to the present, some archivists still called for increased user studies through the 2000s. In her review article, “Users of EAD Finding Aids: Who Are They and Are They Satisfied?,” Lisa Coats questions why so few studies have been conducted with users of EAD finding aids and finding aids in general, although the archival reference community frequently

clamors for an increase in user studies (2004). Coats begins by discussing opinions in the archival community on the value of user studies. The archival community, Coats wrote, has traditionally lagged behind libraries in their implementation and use of user studies. Many of the authors cited by Coats, including Andrea Rosenbusch and Wendy Duff agree that more studies of archival users are needed. Coats concluded by expressing her view that the archival community will not know if current archival tools are meeting the needs of users unless more broad-based user studies of finding aids, particularly EAD finding aids, are conducted.

Andrea Rosenbusch expressed concern in her article, “Are Our Users Being Served?: A Report on Online Archival Databases,” that online archival tools may not best serve the needs of archival users because the development of archival tools at the time of her article was almost exclusively driven by archival professionals, not users (2001). Rosenbusch wanted archivists to focus on identifying user groups and their information-seeking behaviors and include their opinions in the design process.

In response to calls for user studies, several studies on the information needs of different groups of archival users emerged in the early 2000s. Helen Tibbo’s article, “Primarily History: Historians and the Search for Primary Source Materials,” describes a survey of 300 American historians that explored how historians locate primary source materials (2003). Tibbo found that almost all historians in the study (98%) found primary sources by following printed leads or citations, and many used printed bibliographies (79%), repository guides (78%), and finding aids (76%). Tibbo drew some interesting conclusions from the study, in particular, that college and university archivists

should do a better job of self-promoting as “campus experts” for primary source research (p. 29).

In a different study of a single user group, Wendy Duff and Catherine Johnson sought to learn more about the information needs of an oft-neglected group of archival researchers, genealogists, and wrote about it in their paper “Where Is the List with All the Names? Information-Seeking Behavior of Genealogists” (2003). Duff and Johnson conducted in-depth interviews with ten genealogists. The interviews suggested that genealogists conduct research in three stages: collecting names of family members and places, gathering detailed information about people, and finding out about the societies in which their ancestors lived. The researchers concluded that their study supported earlier research that indicated that genealogists prefer using informal information networks to find primary source materials over formal sources such as finding aids, and that archivists should do more to serve genealogists, who make up a large proportion of archival users.

In their research paper “AI: Archival Intelligence and User Expertise,” Yakel and Torres proposed that three factors influence users’ experiences with primary source searching; participant knowledge and artifactual literacy, which had been studied at the time the article was written, and archival intelligence, which has not been studied (2003).

They define archival intelligence as

a researcher’s knowledge of archival principles, practices, and institutions, such as the reasons underlying archival rules and procedures, how to develop search strategies to explore research questions, and an understanding of the relationship between primary sources and their surrogates (p. 52).

The researchers sought to identify particular knowledge and skills as indicators of “archival intelligence” through interviews with 28 archives users. Yakel and Torres found

that rather than assisting researchers with individual projects, archivists would better serve users by educating them on how to become expert users by providing them with a general framework that could help them approach any primary resource collection. Raising the level of archival intelligence is particularly important, the researchers argued, in light of the increased amount of unmediated resources available due to the ubiquity of the web. The Yakel and Torres research strongly influences the present research study because it seeks to qualitatively determine how lack of archival intelligence may negatively impact undergraduate students in their ability to search for information in finding aids.

Rosalie Lack's article, "The Importance of User-Centered Design: Exploring Findings and Methods," described four methodologies for user-centered design studies in digital libraries: focus groups, interviews, questionnaires, and usability testing (2006). Lack's experience with assessment and evaluation with the California Digital Libraries (CDL) influenced her opinions. From the perspective of users, Lack states, "digital librarians and archivists must (1) address issues of usefulness for patrons, and (2) ensure ease of use, frequently referred to as usability" (p. 70). According to Lack, The CDL has extensively utilized all four methodologies discussed in this article. Lack concluded her paper by discussing the top ten themes that have emerged from user studies at the CDL. Themes that relate to the present research study include the importance of clear navigation, adopting non-technical terminology, and providing multiple search options.

Daniel G. Dorner, Chern Li Liew and Yen Ping Yeo surveyed users of New Zealand cultural heritage resources to learn more about their research needs in a digital environment in their study, "A Textured Sculpture: The Information Needs of Users of Digitized New Zealand Cultural Heritage Resources" (2007). The researchers gathered

both quantitative and qualitative data from questionnaires, interviews and a focus group. Three key conclusions about the needs of users arose from the study: 1) the importance of authenticity of information, 2) the need for digitized materials to be placed in their entirety and within the context of related materials, and 3) the usefulness of an integrated portal that leads to a range of sources. This study identified several characteristics of digital cultural resources that users value: authenticity, context, and integration within a larger resource. Future research may show that these valued qualities in digital libraries may also be desired by users in archival resources as well.

Electronic Finding Aid User Studies

Christopher J. Prom conducted one of the more ambitious online finding aid user studies as described in his article “User Interactions with Electronic Finding Aids in a Controlled Setting” (2004). He focused on indentifying specific user search behaviors and determining their efficiency. Prom included participants of three different skill levels: experienced archives users, experienced computer users, and novices. He asked his participants to complete a set of search tasks. Some tasks involved using an interface to find a particular archival collection; others involved searching the finding aid for a particular folder or item. Prom collected both quantitative and qualitative data that indicated that users with archival or computer expertise use finding aids much more efficiently. Inexperienced users spent on average over 90 seconds answering each question. An ANOVA analysis showed that the time results are very likely to be replicated across the general population.

Prom found that users perform better overall when search options are not overly complex. Many users in the study successfully found information by searching within finding aids by using the browser's search function or by browsing. Also, Prom deduced that archives should avoid archival terminology, which confused both his 'experienced' and 'inexperienced' participants. He concluded by calling for a greater understanding of archival users through more user studies.

To date, Elizabeth Yakel conducted the only published study that specifically examined user's interactions with EAD finding aids in her study "Encoded Archival Description: Are Finding Aids Boundary Spanners or Barriers for Users?" (2004). Yakel conducted her study in 2000, but did not publish until 2004, due in part to the discouraging results of the study (Coats, 2004). In her study, Yakel sought to examine whether finding aids act as boundary spanners or barriers to information by conducting a usability study of an EAD interface (Yakel, 2004). Six participants, all graduate students from the University of Pittsburg School of Information Sciences, were given a set of four tasks to complete using a database of finding aids from the Historic Pittsburg Project. The participants also completed an initial survey that assessed their archival and computer expertise, and an exit interview discussing the interface.

The participants had difficulty completing three out of the four tasks, and found it difficult to work on the tasks in general. The main problems that participants experienced involved archival terminology, search functions, and contents display issues. Participants did not always understand the meaning of archival jargon, and particularly became confused when trying to distinguish similar terms, such as "abstract," "scope and content note," and "historical sketch" (p.74-75). Use of archival jargon within the

database search options also confused the participants. Many participants overused the “anywhere” search because they did not understand the meaning of the other types of searches. This negatively affected retrieval by returning a higher rate of irrelevant hits. Yakel’s study only examined search and retrieval in one repository, so it may do more to expose the idiosyncrasies of the Historic Pittsburg Project’s database and finding aids at the time of the study in 2000 than to highlight broad truths about usability of archival search tools.

In her study, “First Entry: Report on a Qualitative Exploratory Study of Novice User Experience with Online Finding Aids,” Wendy Scheir collected information on the experiences of novice archival users (2006). Scheir conducted this study because a more diverse audience is coming into contact with finding aids now that many are published online. Scheir selected nine adults with little or no archival experience to complete a set of six tasks. An archivist also participated in the study for comparison, but her responses were generally left out of the analysis. Participants received the set of tasks by e-mail, and were asked to self-report and return the results. They were given a recommended five minute time limit to complete tasks, but were not required to stop working on a task at five minutes.

Most users were able to complete the tasks in the study, but experienced difficulties with archival jargon and the user interface of finding aids. Users expressed confusion when confronted with archival terminology, such as “finding aid,” “creator,” and “extent;” but the participants’ lack of archival expertise did not necessarily stand in the way of their completion of tasks (p.72). Other problems that participants experienced include cluttered navigation; overly large text chunks in display, and overly complicated

structure. Scheir concluded that archivists could improve finding aids for users by changing the terminology used on the users' end of finding aids and making hierarchical displays simpler. This study provides insight into the needs of a small, specialized group of archives users, and does not reflect the needs of the broader population of archives users. To better understand archives users, similar studies need to be done that target different user groups.

Richard J. Cox reexamined the finding aid from the perspective of three groups of outsiders, those concerned with museum exhibitions, design experts, and accountability advocates in his recent paper, "Revisiting the Archival Finding Aid" (2008). He took a systems analysis approach in his discussion of the finding aid from the three different perspectives to explore new directions for the next generation of finding aids. Cox saw similarities between archival finding aids and museum exhibits because both the archivist and exhibit planner present an incomplete snapshot in time of the historical record, but partially transform it by their interpretation. From the perspective of design, Cox argues that archivists need to try to reduce the distance between the public and the archival profession by learning more about the intended audience of finding aids. Cox believes that archivists can learn from accountability experts how to become more accountable themselves and increase their visibility in the academic community. The goal of Cox's paper is to explore ways in which finding aids can draw closer to becoming the "boundary spanners" discussed in Yakel's 2004 paper.

The three finding aid studies, conducted by Wendy Schier, Christopher J. Prom, and Elizabeth Yakel, helped inform the creation of this study. Elements were incorporated and borrowed from all three studies into the creation of the present study.

Also, the discussion of problems that the study participants had with finding aids made this researcher more aware of particular types of problems that may arise in this research. The archival user articles also influenced the present research. Like the 2003 Tibbo and Duff and Johnson articles, this research explores the needs of a specific group of archival users. In particular, the concept of “archival intelligence” set forth by Yakel raises questions as to what degree lack of archival experience inhibits a user’s ability to effectively use an online finding aid.

Methodology

This study sought to explore how undergraduate novice archival users interact with finding aids, and more specifically, what features in finding aids may help or hinder their ability to find information through a usability test of different finding aids. It borrows from previous finding aid user studies described in “First Entry: Report on a Qualitative Exploratory Study of Novice User Experience with Online Finding Aids” by Wendy Scheir, “User Interactions with Electronic Finding Aids in a Controlled Setting” by Christopher J. Prom, and “Encoded Archival Description: Are Finding Aids Boundary Spanners or Barriers for Users?” by Elizabeth Yakel, but diverges by focusing on novice undergraduate finding aid users.

Usability testing was deployed in the Scheir and Yakel studies and is an ideal method for small-scale finding aid user studies because usability tests are experiments in which participants interact with a system or tool (Barnum, 2002). A usability test can provide information about users’ experiences with finding aids in general as study participants complete a set of tasks with different finding aids. Usability testing creates a situation in which participants can share opinions on different characteristics of finding aids.

Jakob Nielsen determined that a sample size as small as five is appropriate for usability testing within a fairly homogeneous group of participants because a higher number of users tends to generate duplicate information (Barnum, 2002, p.12; Nielsen, 2000). Nielsen recommends that the usability researcher conduct multiple small tests

with distinct user groups instead of one larger test because the researcher can then learn about the needs and behaviors of different groups. Nielsen intends usability testing to be an iterative process, with cycles of testing, redesign, and improvement because the goal of usability testing is to “improve the design and not just to document its weaknesses” (2000).

For this research, a sample size of eight was selected because it was considered to be large enough to collect meaningful information about undergraduate novice archival users but small enough to be a manageable size for graduate level research. While the goal of this research is not to improve the specific template of a particular repository’s finding aids, it may provide insight into improvements that could be made across different finding aids, or general knowledge about how undergraduate students interact with finding aids. This research can be compared with other finding aid user studies of specific groups, such as Scheir’s 2006 study of novice archival users, to see how different groups’ user experiences with finding aids are similar or different.

To create a situation in which participants could interact with finding aids, a test instrument was created, which consisted of four questions about four different finding aids. Eight volunteers were selected to participate in the study, all undergraduate students from the University of North Carolina at Chapel Hill (UNC). Each participant answered the questions in a lab while a screen capture was made of their actions. After the participant completed the test, the screen capture was played back and they were asked to discuss their experiences with the finding aids and in answering the test questions. To collect information and screen out ineligible participants, participants were asked to complete a preliminary survey prior to the test.

Recruitment

The target population for this study was undergraduate students from UNC in the humanities and social sciences who were not “archival experts.” Humanities and social sciences students were chosen to narrow the pool to a manageable size because only eight students would be selected for the study. To target volunteers from just this group, a call for participants was sent to eleven UNC departments in the humanities or social sciences through email. Departments were asked to send the recruitment message to their undergraduate departmental email lists. Out of the eleven departments, only three, Art, Classics, and Anthropology, agreed to send out the recruitment message to their student email lists, which unintentionally narrowed the eligible pool of volunteers. In addition to the email call for participants, recruitment posters were placed around the UNC campus on the same day. An inducement of ten dollars was offered to volunteers who completed the entire study. From the pool of 17 volunteers, eight students were selected to participate in the study. Participants were selected in the order in which they responded and returned their preliminary surveys.

Preliminary Survey

Study volunteers contacted the researcher through email, and were sent a preliminary survey to complete. The survey questions were designed to assess their level of familiarity and experience with archival finding aids. The survey provided useful demographic information about volunteers and also allowed for the screening out of

potential volunteers who report having a high level of archival experience. Volunteers who would have been considered “archival experts” for the purposes of this study would have reported a high comfort level and familiarity with using finding aids, and would have used multiple finding aids in the past. No volunteers expressed a high level of comfort and familiarity with using finding aids, so no participants were screened out.

Task Completion and Stimulated Recall Sessions

The eight participants who fit the recruitment criteria made individual appointments to meet at a private lab on the UNC campus to do the task completion and stimulated recall sessions. Participants were seated at a computer equipped with Camtasia software, a microphone, and the task sheet.

The task sheet consisted of an instruction page and four questions that asked participants to perform searching and finding tasks with finding aids, and included space for typed responses. Links were provided in the test instrument to each finding aid. The four questions were randomized, and the eight participants were assigned randomly to a question order to prevent the data from being skewed due to question order. Test questions were created for four different finding aids from four different archival repositories housed at Duke University, Washington State University, Princeton University, and Oregon State University. The finding aids chosen were supposed to be representative of different styles, but none were chosen because they were overly difficult to navigate. Questions selected for the finding aids were all considered to be fairly simple by the researcher.

Before they began the test, participants were instructed to not spend more than about five minutes on each question, and were provided with a timer. A screen capture recording was made while participants participated in the task completion session. As participants worked on the test instrument, the researcher sat at a desk in the same room and was available for questions. Participants were asked to notify the researcher once they had completed the test.

After participants completed the test, the screen capture made of their work on the test was played back for them and they were asked to discuss their thought process while completing the test in a stimulated recall session. The stimulated recall method, developed by Benjamin Bloom in 1958, was used so that a study volunteer “may be enabled to relive an original situation with vividness and accuracy if he [or she] is presented with a large number of the cues or stimuli which occurred during the original situation” (Bloom, 1953, p. 161). The stimulated recall was selected for this study in the belief that it would generate more meaningful feedback than a standard exit interview because participants would not have to struggle to remember what they did while completing the test. Stimulated recall also prevents disruptions to the flow of the study that would likely occur if questions were asked after the finish of each question.

Prior to the stimulated recall session, participants were instructed from a script on how to give feedback about the finding aids and completing the tasks. Each participant was asked to discuss the steps they went through while completing the tasks, and to describe anything particularly challenging or particularly easy about using the finding aids and answering the questions. The researcher did not ask any set questions during the stimulated recall session, but instead occasionally asked questions and led the discussion

in particular directions based on what the participant did in the recording. A second screen capture with audio recording was made of this portion of the study. All task completion and stimulated recall sessions took less than an hour to complete.

Participants

Table 1: Participant Characteristics

Participant ID	Age	Gender	Academic Status	Major
1	21	F	Senior	Sociology
2	20	M	Junior	Political Science
3	21	F	Senior	Sociology
4	21	F	Recent graduate	Psychology and Sociology
5	21	F	Senior	Sociology
6	21	F	Senior	Studio Art and Psychology
7	21	F	Senior	Classics (Latin) and Italian
8	21	F	Senior	Studio Art, Math minor

The eight volunteers selected for the study were close in age but had different academic backgrounds in the humanities and social sciences. Their primary areas of study included Classics and Italian, Sociology, Psychology, Political Science, and Studio Art. Two participants were male, six female, and all were either 20 or 21 years old. Although this study was not limited to upperclassmen, one junior, six seniors, and one new graduate were selected to participate. Volunteers were selected for the study from the available pool of volunteers in the order in which they returned their completed

preliminary surveys. Older students may have volunteered for the study in higher numbers because of the targeted email recruitment messages to departments; many students do not declare a major until their junior year and may not receive departmental emails.

The majority of participants, six out of eight, said in the preliminary survey that they were both familiar with the concept of a finding aid, which was defined in the preliminary survey question as a “paper or online tool created and published by archives that helps people locate primary source materials by providing information about the contents of an archival collection,” and had used a finding aid before. For this study, novice users were sought, but study participants did not necessarily have to have had no prior archival experience. Novice users were determined to be users who did not express a high level of comfort and experience with finding aids in the preliminary survey. Participants who had prior experience with a finding aid were asked to answer additional questions based on the most recent finding aid they had used. The other two volunteers were both unfamiliar with finding aids and had never used finding aids before.

Table 2: Prior Archival Finding Aid Experience**Participants With Prior Finding Aid Experience**

	paper	online	both		
The format of the finding aid I used was	1	5	0		
	strongly agree	agree	neutral	disagree	strongly disagree
The finding aid was easy to use	0	2	3	0	1
I quickly found what I was looking for	0	0	2	4	0
	comfortable	somewhat comfortable	neutral	somewhat uncomfortable	uncomfortable
Overall level of comfort with using finding aids	0	1	2	3	0

Limitations of the Study

As with all qualitative studies, there are limitations to this study. The chief limitation is that conclusions drawn from this study may not be applied to the general population, since it focuses on only undergraduate novice finding aid users. The undergraduate students that participated in this study may have different difficulties with finding aids than other user groups. When compared with other finding aid user studies,

however, this study may help to shed some light on problems that users have with finding aids that span across different groups of users. Also, it is helpful to learn about the experiences of different types of finding aid users, even if these experiences cannot be generalized to other types of finding aid users. Additionally, only four finding aids were selected for inclusion in this study because of limitations on the participants' time. This is a small sample of finding aids that does not represent all electronic finding aids. With this in mind, the researcher attempted to select finding aids for this study that had different characteristics, but were not particularly bad or unusual examples of finding aids as a whole.

A threat to the validity of this study is that studies conducted in a lab setting do not always accurately translate to what would happen in a similar situation in the real world. Also, the processing of testing itself may alter participants behavior (Babbie, 2004). Undergraduate users may spend more time on completing the usability test because they are being observed, or they may spend less time in trying to find the right answers because they have little personal investment in whether they answer correctly or incorrectly. Participants may perform more poorly than they would outside of the lab because they feel anxiety from being watched, or they may perform better because they may face fewer distractions than outside of the lab.

Another consideration is that conditions in the lab may not mimic conditions in which they usually work. In fact, one subject commented that she had trouble at first using the browser search tool because she was accustomed to working on an Apple computer. Also, the questions selected could not possibly reflect the range of all activities undergraduates may engage in with a finding aid. Subjects were provided with the link to a specific finding

aid, while this seldom happens in life. They did not have the benefit of knowledge of the subject material in the finding aid, which may have adversely affected test performance.

Additionally, volunteers in this study may not represent all undergraduate novice archival students. The email recruitment message was only delivered to three student email lists, which unintentionally limited the pool of volunteers. Also, all study participants were upperclassmen (with the exception of one recent graduate). Older undergraduate students may have different experiences with younger undergraduates, which could limit this study's applicability to undergraduate students in general.

Results

Test Performance

The participants' ability to answer the finding aid task questions correctly and efficiently was mixed. Participants did not always take the most efficient path in answering the questions, but most eventually found the answers. The majority of questions were answered by participants, but some partial answers were given to questions. For one question about the Oregon State University finding aid, three participants answered the question in an alternative way unforeseen prior to the start of the study, but which could be perceived as correct.

The screen capture recordings were reviewed to determine how long users took to answer and how easy or difficult it was for them to find the right answer. The researcher determined, based on participants' actions, the level of difficulty participants experienced while answering questions. Participants who logically progressed through the finding aid to find the correct answer with little or no difficulty were said to have experienced no difficulty. Participants who struggled to find the answer or did not find the answer and who spend a significant amount of time searching in the wrong location for information experienced a high level of difficulty. These rankings were subjective and may reflect the researcher's bias.

For this study, answer time did not directly correlate to how easy or difficult it was for participants to answer the questions. Some participants preferred to read some of the information at the top of the finding aids before trying to search for the answers,

while others preferred to jump in and begin searching with the browser search tool to find an answer as quickly as possible. In determining whether a participant experienced difficulty in a question or not, the researcher reviewed the screen capture recordings and noted how often participants became lost or stalled in their search while using the finding aids.

Table 3: Test Completion


	WSU	OSU	Princeton	Duke
participant 1 – correct answer?	yes	alternate	yes	yes
answer time	5:28	1:26	1:10	2:16
participant 2 – correct answer?	no	yes	no	yes
answer time	4:13	2:26	3:03	3:24
participant 3 – correct answer?	yes	alternate	yes	no
answer time	2:25	1:30	3:50	6:24
participant 4 – correct answer?	yes	yes	yes	yes
answer time	2:09	1:28	2:37	2:04
participant 5 – correct answer?	yes	no	yes	yes
answer time	2:00	1:28	2:29	2:31
participant 6 – correct answer?	yes	yes	yes	yes
answer time	2:20	1:26	2:48	4:02
participant 7 – correct answer?	yes	yes	yes	yes
answer time	2:18	0:52	1:20	3:21
participant 8 – correct answer?	partial	alternate	yes	yes
answer time	4:21	2:08	4:30	6:11
average answer time (correct answers only)	3:00	1:36	2:40	3:24
number of correct answers	6 out of 8 1 partial answer	7 out of 8 (3 alternate answers)	7 out of 8	7 out of 8

Question 1: Washington State University

Figure 4: Washington State University finding aid


[Back to Finding Aids](#)

Washington State University Libraries
 Manuscripts, Archives, and Special Collections
 Pullman, WA 99164-5610 USA
 (509) 335-6691
[Inquiries](#)



[\[Descriptive Inventory \]](#) [\[Index \]](#)

Cage 55
Lucullus Virgil McWhorter
Papers, 1848-1945



Shortly before his death in 1944, Lucullus V. McWhorter requested that his unfinished Nez Perce history manuscripts (called the "Field History") be edited and completed by competent specialists at the State College of Washington. By 1945, Virgil McWhorter had delivered the bulk of his father's archive of personal papers, manuscripts, and printed material to the State College. A completely reliable provenance for the archive cannot be established subsequent to Lucullus McWhorter's death in 1944, chiefly because much of the donated material was not initially placed in an archival repository. Nelson Ault completed the first collection inventory in 1959. Ault's guide is the basis for the present finding aid. Between 1987-1997, José Vargas and other staff in Manuscripts, Archives, and Special Collections rearranged and sorted parts of the collection. They made changes in the descriptive inventory and did some preservation of brittle materials. Final revisions to Ault's guide were done from August 1997 through February 1998 by Lisa Kliger, working under the supervision of Manuscripts Librarian Robert N. Matuozzi. These changes include implementing the present plan of arrangement, establishing chronological sequences within series and subseries, re-numbering folders and boxes, and undertaking a comprehensive revision of the index and the descriptive inventory. In 2003 one item, a revision of Chapter 31 of McWhorter's *The Border Settlers of Northwestern Virginia from 1768 to 1795*, was donated to MASC by Lucy Linn McKie.

Number of containers: 51
 Linear feet of shelf space: 26

BIOGRAPHY

Lucullus Virgil McWhorter was born on the upper waters of the Monongahela River in Harrison County Virginia (later West Virginia) on January 29, 1860. He was one of twelve children born to the Reverend John Minion McWhorter and Rosetta Marple McWhorter, both native Virginians. McWhorter's youthful orientation to life on the land mirrored his rejection of formal education. Summarizing his formal schooling in a biographical questionnaire, McWhorter observed that he did "Four months annual winter terms [roughly the 3rd grade] of indifferent instruction, during years of minority only." He was a voracious if highly focused reader then and throughout his life. His interest in regional history, folklore, and archaeology originated with youthful forays into the woods and countryside of West Virginia where he hunted for archaeological remains of Indians and early settlers. McWhorter's critical study of 19th century American history and his romantic appreciation of nature combined to form his view that the American Indian was the true "aboriginal American." In the course of his life he became an ardent ally and supporter of various Indian tribes, strongly sympathizing with their resentment over the often bad treatment meted out to them by early white settlers and later by the military, "Indian grafters," and the Federal bureaucracy. In his teens his father took him into the family livestock business (breeding Devon cattle) in Berlin, West Virginia. Acting on the impulse for adventure and to see Indians first-hand, McWhorter set out on a lark in 1881 to trek through the coastal regions of Mississippi, Louisiana, and Texas. Eventually, he saw his first Indians in Oklahoma, where he nearly encountered Chief Joseph and the exiled Nez Percés.

In the question for this finding aid, participants were asked to find a particular item in the collection, the "Sketch Map of Clearwater Battlefield." This finding aid was selected because it required users to follow a link to get to the container list, which could confound users who rely heavily on using their browser to search within a web page. Six out of eight participants answered this question correctly, one answered partially correct, and one answered incorrectly.

Out of the six people who answered correctly, one experienced a high amount of difficulty, one experienced some difficulty, and four experienced no difficulty in answering the question. The person who answered partially correct also experienced a high level of difficulty while answering. The person who answered incorrectly never found one of the two links to the collection's container list from the finding aid, which were located at the top of the page and as series links near the bottom of the page that linked directly to the different series. They copied and pasted the "Biography" section of the finding aid into the test instrument, and said that they never found the answer but thought it would be in the biography.

Question 2: Oregon State University

Figure 5: Oregon State University finding aid

The screenshot shows the Oregon State University Special Collections website for the Paul Emmett Papers. The header includes the OSU logo and the text "Oregon State University". Below the header, the "Special Collections" logo is on the left, and "PAUL EMMETT PAPERS" is in the center. A "Collections" search bar is on the right. The main content area features a quote from Dr. Burton H. Davis, a portrait of Paul H. Emmett, and a biographical note. A "CATALOGUE NAVIGATION" sidebar on the right lists 09 reprints from 1-30 to 241-270. Below the portrait, there are links for "Additional Photos" and "Information and credits".

OSU Oregon State University

Special Collections
OSU LIBRARIES

PAUL EMMETT PAPERS

Collections

"Dr. Paul H. Emmett contributed to the literature of physical chemistry, and especially heterogeneous catalysis, during six decades. The quality, even more than the quantity, of these publications will make them cornerstones of catalysis science for decades to come....It is amazing that a person could publish such a broad spectrum of fundamental research papers in a field as multidisciplinary as heterogeneous catalysis."
- Dr. Burton H. Davis, Kentucky Center for Energy Research Laboratory, 1985

Paul Hugh Emmett (1900-1985), a friend and colleague of Linus Pauling, graduated in 1922 from Oregon State University and completed his doctoral work on heterogeneous catalysis at Caltech in 1925. Emmett was elected to the National Academy of Sciences in 1955 and was chair of the Chemical Engineering department at Johns Hopkins University. Emmett also worked at the Mellon Institute until his retirement in 1973. Special Collections houses Dr. Emmett's research notebooks, correspondence and awards.

Special Collections houses Dr. Emmett's research notebooks and published conclusions from various experiments. Much of his personal and professional correspondence, information contributing to the biographies of several renowned chemists with whom he collaborated, and awards that were dedicated to Emmett during his career are also available. Oregon State University received Dr. Emmett's collected papers, some 260 boxes in all, in July of 1987.

[Biographical Note\(s\)](#)

CATALOGUE NAVIGATION

- 01) Reprints 1-30
- 02) Reprints 31-60
- 03) Reprints 61-90
- 04) Reprints 91-120
- 05) Reprints 121-150
- 06) Reprints 151-180
- 07) Reprints 181-210
- 08) Reprints 211-240
- 09) Reprints 241-270

Additional Photos >

[Information and credits](#)

In the question for this finding aid, participants were asked to find out from which university and in what year Paul Emmett retired. This question did not require participants to examine the contents of the collection, but instead asked for information available in the biography. This finding aid was selected because it has a unique appearance and structure from finding aids from other archives. The finding aid home page had a very brief biographical description and photograph of Paul Emmett, and navigation through the container list occurs through a list of contents on the right of the

screen. More detailed biographical information may be accessed through the main page as well.

Seven out of eight participants answered this question correctly and one answered incorrectly. Out of the seven who answered correctly, one experienced a high level of difficulty (because they began at the OSU Libraries page, not the finding aid), and six experienced no difficulty. Several thought at first that the question asked was “when and from what university Paul Emmett graduated,” but they corrected their mistake after re-reading the question. The person who answered incorrectly said that Paul Emmett retired “in 1973 from the Mellon Institute at Hopkins.” This was incorrect because the Mellon Institute is not a part of Johns Hopkins; the participant misread the information in the finding aid. This question was answered in the shortest amount of time on average by participants, probably because it did not require them to search through the container list.

Question 3: Princeton University

Figure 6: Princeton University Library finding aid

The screenshot shows the Princeton University Library Mudd Manuscript Library website. The header includes the library name and a navigation bar with links: [Finding Aids Home](#), [New Search](#), [Help](#), [Print: HTML](#), and [PDF](#). A sidebar on the left lists various sections: [Contact](#), [Top of Finding Aid](#), [Summary Information](#), [Organizational History](#), [Description](#), [Arrangement](#), [Information for Users](#), [Subject Headings](#), [Contents List](#), and a [Navigate by series](#) dropdown menu. The main content area displays the title "Special Committee on Sponsored Research Records, 1965-1972 (bulk 1970-1971): Finding Aid" above a thumbnail image of a handwritten document. Below the image, contact information for the Seeley G. Mudd Manuscript Library is provided, including the address (65 Olden Street, Princeton, NJ 08544), phone (609-258-6345), fax (609-258-3385), email (mudd@princeton.edu), and website (<http://www.princeton.edu/~mudd>). It also notes the publication year (2003) and copyright (©2006 Princeton University Library). At the bottom, the "Summary Information" section lists the creator as "Princeton University. Special Committee on Sponsored Research" and the title/dates as "Special Committee on Sponsored Research Records, 1965-1972 (bulk 1970-1971)".

Participants were asked in the question for this finding aid to name a document by series, box, and folder that relates directly to sponsored research or research policy at Princeton. This finding aid was selected because of its set of links to different sections of the finding aid on the left-hand side, which remain visible as a user scrolls through the page. This question was selected to see how people search for not a specific item, but an example of an item from a category. Seven out of eight participants answered this question correctly and one answered incorrectly. The expected answer for this question

was any item from Series 6, but one user answered correctly by listing an item from a different series that met the criteria.

Out of the seven people who answered correctly, two experienced moderate difficulty and five experienced no difficulty. The person who answered incorrectly began at the Princeton Digital Collections page, not at the finding aid. Eventually the participant reached the library catalog and entered the catalog entry for the finding aid as the answer.

Question 4: Duke University

Figure 7: Duke University finding aid

The screenshot displays the Duke University Libraries website. The header includes the Duke University Libraries logo, a search bar, and navigation links. The main content area is titled "Inventory of the Walter Weir Papers, 1909-1996 and undated, bulk 1950-1990". It includes a descriptive summary, administrative information, and access restrictions. The left sidebar contains links to various sections of the finding aid.

DUKE UNIVERSITY LIBRARIES

WEB SITE SEARCH:

Hours | Directions | About

Catalog | Articles | Databases | News

[Ask a Question](#)

[View Full Inventory](#)
[Section View](#)
[PDF](#)

[Descriptive Summary](#)
[Administrative Information](#)
[Biographical Note](#)
[Collection Overview](#)
[Subject Headings](#)
[Related Material](#)
[Detailed Description of Collection](#)

[RDMSC](#) / [Finding Aids](#)

Inventory of the Walter Weir Papers, 1909-1996 and undated, bulk 1950-1990

[top](#)

Descriptive Summary

Repository
Rare Book, Manuscript, and Special Collections Library, Duke University

Creator
Weir, Walter

Title
Walter Weir Papers, 1909-1996 and undated, bulk 1950-1990

Language of Material
Material in English and French

Extent
14 Linear Feet
Approximately 7,700 Items

Abstract
Walter Weir was an advertising executive, marketing and communications consultant, and professor of advertising. He worked for a number of agencies, including N.W. Ayer & Sons, J. M. Mathes, Lord & Thomas, and Kenyon & Eckhardt. He founded Walter Weir, Inc., which merged into larger firms over the years, was co-owner of Switzerland-based La BorteWeir S.A., and headed Walter Weir Communications, Inc. Weir also taught advertising at the University of Tennessee and Temple University, wrote three books on advertising, anonymously authored the "Creative Man's Corner" column in *Advertising Age* magazine for 25 years, and composed numerous speeches, articles, short stories, poems, songs, and musicals.

The Walter Weir Papers span the years 1909 through 1996, the bulk of which cover the 1950s through the early 1990s. The collection consists of audiocassettes, audiotapes, correspondence, course materials, clippings, musical scores, photographs, presentations, proofs, print advertising copy, radio advertisement scripts, songs, speeches, writings, and voiceovers documenting Weir's career in advertising, marketing, consulting, and teaching. The collection also documents Weir's prose, poems, and musicals, as well as his relationship with son Anthony Weir. Agencies and clients represented include the Alexander Proudfoot Company, Green Thumb Corporation, Interhydro AG, Jackson & Perkins Co., La BorteWeir SA, Ralston Purina, Stratford Texas, Inc., Walter Weir, Inc., and Walter Weir Communications, Inc. The collection also includes materials relating to Crain Communications Inc., which published *Advertising Age*, as well as the University of Tennessee and Temple University, and Weir's correspondence with Oscar Hammerstein II.

[top](#)

Administrative Information

Access Restrictions
Collection is open for research.

However, collection may contain materials to which the Acknowledgment of Legal Responsibilities and Privacy Rights form applies. Patrons must sign this form before using this collection.

In addition, original audiovisual materials are closed to patron use. Technical Services staff need to produce use copies before contents can be accessed.

Permission is not granted for publication of the contents of folder entitled "N.W. Ayer Oral History Program interview with Walter Weir." The user is responsible for obtaining permission to publish from the interviewers.

Also, all or portions of this collection may be housed off-site in Duke University's Library Service Center. Consequently, there may be a 24-hour delay in obtaining these materials.

Please contact Research Services staff before visiting the Rare Book, Manuscript, and Special Collections Library to use this

Please contact Research Services staff before visiting the Rare Book, Manuscript, and Special Collections Library to use this

For this question, participants were asked to find in the finding aid a specific item, the speech "The Shoe on the Other Foot." This finding aid was selected because of its set of links on the left-hand side of the screen, its heavily textual presentation and its lack of series or folder numbers.

Seven out of eight participants answered this question correctly and one did not give an answer. Out of the seven people who answered correctly, four experienced

moderate difficulty and three experienced no difficulty. The participant who did not answer spent several minutes scrolling through the web site and gave up. On average, this question took participants the longest to answer.

Discussion

Arguably, what was more interesting than whether participants answered a question correctly or not and how long they took to answer were what paths they took in answering questions and what barriers they encountered while using the finding aids. During the stimulated recall interviews and through examination of the screen capture recordings of the task completion sessions, common themes emerged. The eight stimulated recall interviews and observational notes on the task completion screen captures were transcribed and analyzed through a content analysis of the transcripts. Portions of the chat transcripts were described in short summaries and later coded into categories. Characteristics of the finding aids or of the skill sets of participants that came up in the interviews as being either helpful or hurtful were basic computer and web navigation skills; the organization, language, and visual appearance of finding aids; and being able to learn (or not) as they used the finding aids.

Computer and Web Experience

Not surprisingly, the participants who performed the best on the test also seemed to feel comfortable with navigating the web, using word processing software, and using computers in general. Six out of eight participants efficiently used the in-browser find tool while answering the test questions. One participant who did not use the browser search tool was able to navigate the finding aids by browsing and following the

hierarchical structure of the finding aid, but they took a little longer to answer the questions. The other participant who did not use the browser search experienced other difficulties that appeared to be related not just to problems with the finding aids, but also to lack of computer skills.

This user did not follow the instruction in the test instrument to ctrl-click on the link to the finding aid, and instead tried to copy and paste the URLs directly into the browser. Two of the pasted web addresses did not open because the participant copied and pasted a period along with the addresses that marked the end of a sentence. Instead of starting from the finding aid for the two test questions, this user began at a higher level in the web address. This made it more difficult for the user to answer the question because he had to first find the finding aid. Although some degree of computer and web navigation experience is often assumed, at least among undergraduate students, lack of computer and web skills can slow archival users down and cause them to search for materials in unexpected ways.

Like web users in general, archival finding aid users' level of experience with using computers and the web widely varies. Archivists cannot change the level of computer experience finding aid users possess, but they can improve their help services for those who need it. Out of the four finding aids examined, only one, the Duke finding aid, explicitly offered help. Help links is located in two places, one at the very top of the page in the border labeled "Ask us Now," and one at the top of the navigation on the left labeled "Ask a Question." The "ask us now" button leads to a page that has a list of phone numbers and forms for chat reference, email reference, or setting up a research consultation. This button is in the same location across all of Duke Libraries' web pages,

making it easy for users who are familiar with Duke's library website to ask for help. The "Ask a Question" link leads to a form for email questions specifically for the Manuscripts, Rare Books, and Special Collections library. None of the participants in this study tried using the help services at Duke during the test. Presumably they would not use help during the test because they were not actually searching for information for themselves, or they may be disinclined to use help services while searching for archival materials in general.

Two of the finding aids included ambiguous links that could be used to seek help, but users might not have known that. The Washington State University finding aid has a link at the top left corner under the collection's address labeled "Inquiries." One of the participants clicked on this link, then hit the back button on the browser when the link took him to an email form for Special Collections questions. The name of this link could have been vague enough that the participant may have thought that the link could help them answer the test question, or he may have just been curious as to where the link would take him. The Princeton finding aid has a "Contact" link in the top left corner above the side navigation, which leads to a contact page with address, phone number, and Manuscripts Library email address for reference questions. Finding aid users may or may not think to click on links labeled "Contact" or "Inquiries" when looking for help with a finding aid because the language is unclear.

Searching Versus Browsing

Searching for information when there is a keyword to search for, as was the case for the participants in this test, can be a fast and easy way to find information. However, searching indiscriminately sometimes led the participants in this study astray. The Duke finding aid was the only finding aid used in the test that had a search box, located at the top of the page in the border. Although the box is labeled “Web Site Search,” two users tried to use the box to search for keywords related to the question on the test. In both instances, the participants were surprised to find that clicking on the top hit in the list of search results led them back to the top of the finding aid they were just on.

Although use of the in-browser search tool usually helped the participants find information more quickly, it occasionally slowed down users when they tried searching before browsing through the finding aid first. Two users tried to search within the browser’s search tool in the Washington State University finding aid before really looking at the page and were unable to find their search terms on the page because the container list for the collection was on a separate page. Another participant used the browser search tool to find the answer for the Duke finding aid question, but they then had to backtrack to figure out what series the item belonged to. Using a browser search is fast, but it can also lead to wrong information that contains the same keyword. One participant did a browser search in the “Index” page, linked to by the WSU finding aid. They were able to get to an entry called “Clearwater,” but it just referred the participant back to the collection that contains materials about “Clearwater.” Participants who spent a little time becoming familiar with the organization of the finding aids before doing a browser search had to do less backtracking once they found an answer.

Organization, Structure, and Language

It is difficult to predict where exactly a novice user will begin looking for information in a finding aid, but clear organizational signals at the top of a finding aid can steer users in the right direction. Conversely, misleading indicators at the top of the page can steer users away from useful information. The finding aid from Washington State University has two small links at the top of their finding aids, one to “Descriptive Inventory” and one to “Index.” “Descriptive Inventory” links to a container list of the collection for that finding aid and “Index” links to a participant and people index across all the archival collections. The two terms used, “Descriptive Inventory” and “Index,” were unclear for at least the two participants in this study who clicked on “Index.”

One participant who clicked on “Index” said that they thought that the index “must be an index of everything in the collection, and I could just go straight to [the item].” The two users who went to the index explored for some time before they realized that they were in the wrong place. The other participant became very lost in the index, went back to the main finding aid page, then clicked on a link to “Historical Photographs,” taking them further away from the collection to an inventory of historical photographs that span across many collections. Although this was not discussed with the participant in their interview because it was only noticed by the researcher after the interview, the participant may have clicked on the Historical Photographs link because the sentence containing the link is fairly misleading: “To find out more about this collection, click here for the link to Historical Photographs.” The link was in the body of the finding aid, so some people may assume that “this collection” means the collection relating to the finding aid.

A common complaint across the stimulated recall interviews was about the language used in finding aids. While discussing the Duke finding aid, one participant said “this one actually provided me with the most difficulty because I thought if I clicked collection overview it would take me to the collection overview and not the description of it.” The participant thought that “Collection Overview” meant list of items in the collection, not a general description of the collection. Another user of the Duke finding aid was confused about the language of the different sections of the finding aid, and thought that they would be able to find an item in the collection under the “Administrative” section.

Many electronic finding aids attempt balance providing enough information while trying not to overwhelm users with too much information. However, this balance is not easily achieved. Electronic finding aids tend to consist of a single or only a few web pages, which can intimidate users confronted with large chunks of text and no pictures. Several users did not like the Duke finding aid in particular because it contained dense paragraphs of text with little white space. One participant said “this one was actually the hardest out of the four to use, probably because the layout is mostly plain text, and, um, there's not really much visual organization of the information.” However, one participant who relied heavily on using the browser search tool liked the finding aids with large chunks of text: “these large text-based pages with all the information on them seemed to be the most helpful, if you're using an in-browser search tool.” Not every finding aid user relies on the in-browser search, but those who did in the study processed large chunks of text more effectively.

When the participants understood the meaning of labeled used to organize the finding aids, they often credited good organization as a factor in their being able to find answers to the questions. Several users commented on how the hierarchical organization of finding aids helped them find what they were looking for. While discussing the Duke finding aid, one user commented on how the “heading that narrowed down the subjects by fields,” referring to the organization by series, made the finding aid easy to navigate. Another participant remarked about the WSU finding aid that “if you just read through the thing you could see how they were, how the series were grouped.” The majority of participants figured out the organization of the finding aids at some point and determined it to be helpful.

The majority of participants remarked on how good presentation of the information in the finding aid container lists helped them in using the finding aids and how confusing or overly dense presentation hindered their searching. Several of the participants liked that the box and folder numbers were clearly presented and easy to find in the Princeton finding aid. One participant compared the Duke finding aid negatively with the Princeton finding aid because the Duke finding aid did not include folder and series numbers and provided box numbers and series titles less frequently and clearly. Several participants had to scroll up the Duke finding aid to find the series and box information after locating the item.

Comparison with Earlier Finding Aid Studies

Participants in this study ran into the same problems with terminology that finding aid users experienced in the Prom, Yakel, and Scheir studies. Like in the Scheir study, also conducted with novice archival users, some participants did not understand the meaning of archival jargon, but were usually able to answer the questions regardless. Scheir cited common archival terms as problematic, such as “finding aid,” “creator,” and “extent” (Scheir, 2006, p. 72-73). Although some participants in this study experienced difficulty with similar archival terms, the greater challenges to access occurred in this study when nonstandard ambiguous terminology was employed, such as the term “Index” in the WSU finding aid. Yakel as well found problems with archival language such as “abstract” in her study, which examined EAD finding aids from a single repository (Yakel, 2002, p. 68). Prom also found that both the experienced and inexperienced archival users in his study had difficulty with archival terminology and he believed that archivists should avoid its use (Prom, 2004, p. 262). However, an inherent problem with all language is that it can be interpreted in different ways, whether archival or not. To prevent language-based confusion, clear and precise language should be used and, when possible, standardized across finding aids to make them more accessible to repeat users across repositories.

Conclusion

It is difficult to make generalizations about what finding aids should be like from this data because users responded differently to the same finding aids. While some liked the organization of the Duke finding aid, for example, others thought that it was confusing. While participants disagreed on what constituted helpful characteristics of a finding aid, most of the participants agreed that coherent organization and structure, good design, and clear, precise language made finding aids more usable and less frustrating. Overall the study participants performed very well, considering their inexperience with finding aid and with the subject material in the study. Although the participants sometimes ran into obstacles that slowed their progress, all but one were able to answer at least three out of four of the finding aid questions correctly. Participants did not always know what an archival term meant, or immediately recognize the structure of a finding aid, but many were able to learn how to navigate individual finding aids after spending some time reading through and exploring them.

Although improvements can certainly be made to the terminology, structure, and presentation of finding aids at particular repositories, as a whole finding aids tend to function as they were designed. Archival repositories should conduct institutional usability studies to identify and fix problems that are particular to their finding aids, but this study suggests that for the most part, finding aids may be challenging but do not pose insurmountable obstacles to access for novice undergraduate students.

While this study provides some interesting insight into the information-seeking behaviors of undergraduate students with finding aids, the conditions under which the participants explored the finding aids bears little resemblance to the conditions in which people use finding aids in life. When searching for archival materials, users seldom know of an exact item or fact that they are looking for, and often do not know the collection or even repository to begin with when starting their search. Users typically have to conduct a great deal of research before they arrive at a finding aid, and then they have to evaluate it to determine whether the materials it describes will be of use. Although the methods used to study undergraduate users and finding aids are artificial, the ways in which the participants interacted with the finding aids and the feedback that participants provided are not.

Some individual archival repositories conduct usability testing of their finding aids, yet few academic studies have been conducted that examine how users interact with finding aids, particularly novice and young users. This lack of understanding of archival users by the archival community in general, and of different types of archival users, is troubling considering how much time, money, and resources archives have invested in implementing online finding aids over the last ten to fifteen years. This study has attempted to fill a small gap in the lack of knowledge about archival users and finding aids, but further research is needed in order to make finding aids better for users.

Future researchers may want to examine how undergraduate students and other types of users seek out primary source resources, from the beginning of a search to finding primary source materials. Studying the entire search process or different parts of the search process may provide insight into a more organic research process than asking

participant to answer set questions while using finding aids. Also, it may reveal obstacles that student primary-source researchers are encountering before reaching a finding aid. A usability-based study that examines users' experiences with finding aids that they have selected for research would be interesting to compare with similar finding aid studies, which all have been based on artificial tests. More can be learned about how different groups of users interact with finding aids as well. This study explored undergraduate users experiences with finding aids, but some of these findings may be specific to this group of users. More research should be conducted to determine who some of the lesser-known users of online finding aids are and how they feel about using finding aids.

This study was conducted on a small scale to conform to time and cost restrictions of graduate-level research. Although usability testing can provide meaningful information with a small number of users, only four finding aids were examined in this study, and they were examined somewhat superficially. Further studies should be conducted that examine more finding aids at a higher level of depth. The participants in this study were only asked to find answers to simple questions that could be contained in finding aids; it did not explore how people use finding aids when they do not know exactly what they are looking for or when browsing is part of the discovery process.

Despite the limitations of this study, learning about undergraduate students' experiences with finding aids is useful because little is known in the archival community about this particular group of researchers. Undergraduate students tend to be web- and computer-savvy and are likely at least beginning research for primary source materials online, without the mediation of archivists. This study indicates that for most undergraduate students, inexperience and unfamiliarity with online finding aids does not

prove to be an impassable barrier to their use, and ultimately, to finding primary source materials.

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Appendices

Appendix 1: Email Recruitment Message

Message to Academic Departments

Dear _____,

My name is Rita Johnston, and I am a graduate student in the School of Information and Library Science (SILS) at UNC. I am seeking undergraduate student volunteers for a study that I am conducting for my Master's paper research. Could you please send this recruitment message to the undergraduate _____ Department email list? Thank you for your assistance.

Recruitment Message:

Would you like to participate in a research study and earn \$10? My name is Rita Johnston and I am a student in the School of Information and Library Science at UNC. I am looking for eight volunteers to participate in a study on how undergraduate students search for information about primary source materials using archival finding aids. Selected volunteers will be asked to complete a set of questions using finding aids at an on-campus lab, then discuss the process of answering the questions. No previous experience with using finding aids or archives is necessary, but highly experienced archives users will be disqualified from participating. If you are interested, please contact me at rdjohnst@email.unc.edu. The study should last no more than an hour, and upon successful completion of the entire study, volunteers will receive \$10. Thanks for your participation!

Sincerely,
Rita Johnston
MSLS Candidate, August 2008
rdjohnst@email.unc.edu

Appendix 2: Preliminary Survey

Preliminary Survey for Finding Aid Study

Thank you for volunteering to be a part of this study. Please save this document to your computer, complete the survey, and return your responses as an email attachment. You will receive a reply within several days to let you know if you have been chosen to participate in the study. This survey will take about five minutes to complete.

Please place an x next to the one answer that best applies:

I. Introductory Information

1. I am familiar with the concept of a finding aid, which is defined in this survey as a paper or online tool created and published by archives that helps people locate primary source materials by providing information about the contents of an archival collection.

☐ Yes

☐ No

2. I have used an archival finding aid before to help locate primary source materials.

☐ Yes

☐ No

If you answered “no,” please skip to question #6.

II. Experience with Finding Aids

Recalling the last time you used a finding aid, please select the one best answer to the following questions.

3. I used the finding aid in the following format.

☐ Paper

☐ Online

☐ Both paper and online

4. Disagree Strongly disagree Strongly agree Agree Neutral

The finding aid was easy to use: _____

I quickly found what I was looking for: _____

5. Please rate your overall level of comfort with using a finding aid to locate primary source materials

Comfortable Very uncomfortable	Somewhat comfortable	Neutral	Somewhat uncomfortable
_____	_____	_____	_____

III. Demographic Information

6. What is your age?

7. What is your sex?

_____ M _____ F

8. What is your major (you may provide more than one answer).

10. What is your academic status?

Freshman	Sophomore	Junior	Senior	Other
_____	_____	_____	_____	_____

If other, please explain:

11. For the purposes of this study, the researcher will need to make an audio recording of the volunteer and a computer screen capture. I am willing to let the researcher record me in this way.

_____ Yes

_____ No

Thank you for taking the time to complete and return this survey. Your participation is greatly appreciated!

Appendix 3: Test Instrument

Task Sheet

Thank you for taking part in this study.

The following pages describe a set of four tasks. Each task involves viewing an online description of an archival collection which you can access by ctrl-clicking on the link provided.

Each task asks you to search for and provide an answer, which you may complete in this document. Feel free to include comments or notes about the tasks on the form as well.

Please spend no more than five minutes on each question, and skip any questions that you cannot complete within that amount of time. You may keep track of the time by using the provided timer or by using a clock or watch. The time limit is to help ensure that you complete the study within an hour, and does not need to be precisely adhered to.

If you have trouble accessing the web pages or experience any other technical issues during the course of the study, please inform the researcher and she will be happy to help. Please let the researcher know when you complete the task sheet.

[Answers not provided with actual test]

1. Go to the Lucullus Virgil McWhorter Papers finding aid:

<http://www.wsulibs.wsu.edu/holland/masc/McWhotr/Mcwh1.htm>

Where can you find “Sketch Map of Clearwater Battlefield”? (list the series, box, and folder number).

Answer: Series 9, box 51, folder 541.

2. Go to the Paul Emmett Papers finding aid:

<http://osulibrary.orst.edu/specialcollections/coll/emmett/index.html>.

When and from what university did Paul Emmett retire?

Answer: Johns Hopkins, 1971

3. Go to the Special Committee on Sponsored Research Records finding aid:
<http://diglib.princeton.edu/ead/eadGetDoc.xq?id=/ead/mudd/univarchives/AC060.EAD.xml>.

Provide the name of a document that relates directly to sponsored research or research policy at Princeton, and provide the box and folder numbers.

Answer: Anything from Series 6.

4. Go to the Walter Weir Papers finding aid:

<http://library.duke.edu/digitalcollections/rbmscl/weirwalter/inv/>.

Where can you find the speech “The Shoe on the Other Foot”? (list the series and box number). In what year was it written?

Answer: Writings and Speeches Series, box 19; 1956

Appendix 4: Stimulated Recall Script

Stimulated Recall Script

During this final part of the study, I will play back the screen capture of your task completion session. I would like you to discuss the steps you went through while working on each task and your decision-making process.

Whether or not you were able to answer the questions, please be sure to describe any challenges that you faced during the test. Were there any unfamiliar terms that slowed you down or got in the way of your completing the task? Were you confused or misled by the navigation of the website? Or, if you found answering the questions to be easy, please discuss why.