The MetaScholar Initiative

Usability Study Outcome Report

A summary and analysis of the cognitive walkthrough, usability study, and user survey performed on

americanSouth.org

a joint project of Emory University and ASERL
sponsored by the ANDREW W. MELLON FOUNDATION

Testing Procedures

The Purpose of the Study

In accordance with the grant proposal submitted to and approved by the Andrew W. Mellon Foundation, the project staff at AmericanSouth.org is to "coordinate specific evaluations of AmericanSouth.org from the perspectives of … scholars and other users." (page 11) The types of testing to be conducted were specified as including "evaluation and usability studies." (8) An additional projected outcome was that the project staff would illicit "scholar recommendations for developments to support teaching, research, and communication." (6)

The usability study and accompanying survey, the results of which are contained in this report, were, however, much more than the fulfillment of the MetaScholar Initiative's obligations to a primary funding agency. They were in addition a means of evaluating the Technical Design Team's progress in producing an efficient and user-friendly site. Moreover, they afforded an opportunity to observe users who represent the target audience in the process of interacting with the AmericanSouth.org portal. **The primary goal of the MetaScholar Central Project Staff was to determine whether users possessing varying degrees of technical skill and disciplinary expertise would be able to find information and contribute to the site without assistance and with minimal difficulty.**

Study Objectives

On November 21, 2002, the Central Project Staff met to discuss which design issues could be resolved and which functions evaluated through the proposed usability studies. It was agreed that we should test as many of the following aspects of the site as possible:

♦ **Registration** – Creating a user account
♦ **Annotations** – Adding metadata to a specific archival record
♦ **Comments** – Adding comments about an AmericanSouth.org article
♦ **Bookbags/ exports** – Adding chosen archival records to an individualized compilation and then viewing that compilation
♦ **Weblinks** – Locating and following links to related sites
♦ **User bios** – Discovering information about others who have contributed to the site
♦ **Getting to a digital surrogate** – Locating and following links to a digitized copy of a document for which metadata is available on AmericanSouth.org
♦ **Searching** – Conducting a simple search of the archival records
♦ **Browsing** – Viewing the entirety of the records within an archival collection
♦ **Pop-up windows** – Using buttons and boxes in pop-up windows to refine a search or add records to a bookbag

- **Advanced searching** – Combining search criteria in order to limit search results
- **Posting articles** – Adding scholarly content to the site

By the time of testing, certain decisions by the Scholarly Design Team and Central Project Staff had altered the ways in which potential users could interact with the site. Thus, advanced searching was eliminated, because it was found that nothing could be achieved with an advanced search that could not be achieved by conducting a specific search within a single collection. Likewise, the use of pop-up windows was no longer necessary for site use. The Scholarly Design Team came to the conclusion that in order to preserve the rigor and trustworthiness of AmericanSouth.org's content, the submission of articles would be restricted to the SDT and to invited scholars. Therefore, the Technical Design Team is able to work personally with the limited number of people who would be posting articles, and would not need to test this feature. In the interest of the brevity of the study, we opted not to test the user biographies.

Survey Objectives

The availability of volunteers for site testing created a valuable opportunity to survey user reactions to AmericanSouth.org. We wished to keep the survey as general as possible, understanding that the participants would be evaluating a version of the site that will be greatly improved and expanded by the time of its release. The survey also provided the opportunity to gather additional information about the computer usage of our volunteers. In designing the survey, we had the following broad questions in mind:

- What was the participant's general impression of the site?
- To what degree is the participant comfortable with and dependent on the internet?
- In the participant's opinion, how useful is each of the primary functions of the site?

In addition, we wanted to solicit any positive or negative feedback the volunteers wished to offer, having had the opportunity to use the site under both structured and unstructured circumstances. In particular, we were interested to know the opinions of those archivists and scholars who currently work or have worked in the field of Southern Studies.

Study Preparation

In the weeks leading up to the study, approximately sixty individuals were contacted requesting their participation. Additionally, a general request was posted to the staff listserv of the Emory Libraries. Potential participants were informed that the test would take no more than one hour, and that refreshments would be provided. Each was assigned a one-hour individual testing time to take place on Thursday, March 20th; Friday March 21st; Thursday, March 27th; Friday, March 28th; and Tuesday, April 1st, 2003. Four to six tests were scheduled on each day between 9:00 a.m. and 4:00p.m. There were a total of twenty-two participants scheduled with twenty-one attending.

The Cognitive Walkthrough

An initial list of sample questions was composed, which the Central Project Staff used in order to perform a cognitive walkthrough of AmericanSouth.org. Based on the walkthrough and subsequent staff recommendations, substantial improvements were made to the site:

1. The menu earlier labeled as "Topics" was revised to read "Article Topics," so that it would be easier for users to understand that this would enable them to investigate original site content. Previously, it was not apparent where a user would go to locate original articles.

2. As mentioned above, the advanced searching function was deleted due to its limited utility. While it is true that it enabled users to specify which archival collections they wished to search, the same end could be met by performing a simple search and then selecting the results of a particular archive. Other than that, there were search criteria that would be of no use to the typical user, but would rather frustrate the user. For example, the box marked "date" might give the researcher the false impression that s/he could search by the period or publication date of a document, when in fact the box was for searching by the precise date on which an item's record was added to the site. Furthermore, because Dublin Core records allow archivists the flexibility to determine each element in the broadest sense, the "author" of a document could be its actual composer, or the source of the document, or the person in whose collected papers the document is contained. Thus, rather than confuse the user, it was decided to eliminate advanced searching.

3. When a record was opened, the link listed under "Source Archive" opened a new window, but went nowhere. Although the tasks of the walkthrough did not require opening these links, the Central Project Staff was concerned that participants of the usability study might attempt to open the links and become confused. The problem was corrected.

4. Clicking on the author link at the end of a summary description of an article on the homepage resulted in an error message. However, clicking on the link at the beginning of the summary description worked correctly. The problem was corrected, although, as no contributors to the site have provided biographical information about themselves, and since it was of critical importance that the usability study not be too lengthy, it was decided that there need not be a question testing user biographies.

5. Clicking on the graphic for a topic like "Geography" next to an article resulted in an error message. The programmers corrected the problem.

6. There was no link or window on the home page allowing the user to browse the archives. In order to browse, the user had to first attempt a search. Therefore a "Browse the Archives" link was added to the main menu on the home page.

7. There were missing links to the digital surrogates of the Ralph McGill Collection, the Sam Nunn Collection, and the Southern Changes articles (all administered by Emory), as well as the Virginia Tech University ImageBase. This seemed to be a temporary problem of the host institution's servers. Nonetheless, it alerted the Central Project Staff that links might fail or system failures might occur during testing.

The sample study questions themselves were also discovered to be sometimes ambiguous or misleading. Additionally, the sample questions were formulated based on the on-line version of AmericanSouth.org, whereas a much more developed version of the site on an internal server was available for testing. Therefore, certain questions were rephrased, while others were entirely rewritten in accordance with changes to the site itself. The order of the questions was also rearranged by the Central Project Staff.

Preliminary Testing

The revised usability test questions were then administered to a volunteer from the library staff under simulated test conditions. During the test, certain remaining technical problems surfaced, and in addition, the volunteer found the phrasing of several of the test questions to be confusing or misleading. As a result, she became frustrated and embarrassed about her performance. Website problems were quickly repaired, and the questions were once again revised. Moreover, the volunteer expressed that she would have felt less "on the spot," if she had had an opportunity to explore AmericanSouth.org before being asked to perform tasks on it. She explained that when she uses a website, she first tries to get a general feel for its content and capabilities.

As soon as changes were made, we performed a second trial run on another library volunteer. He was administered a revised test and was allotted time to explore the site at the beginning. This time, the usability test went much more smoothly, and the participant had a positive attitude about the experience. Any remaining problems that surfaced in the site or the phrasing of the questions were again corrected. In these first two attempts at testing, programmer Sharon Kennedy and project coordinator Kristina Watkins Mormino each took a turn acting as proctor and recorder. A consensus was reached about the testing procedures and practices to be observed. Lastly, all testing forms were finalized. Because the survey form did not require revision, and because the survey concerns the user's perception of the site *concept*, surveys filled out by the two trial participants are included in the overall survey results. Their usability tests could not be included in the general analysis, because they were working prototypes.

Procedures and Practices

The usability testing methods for AmericanSouth.org were gleaned from several internet resources.   James Hom's website, *The Usability Methods Toolbox* (©1996, James Hom), found at http://jthom.best.vwh.net/usability/usable.htm, gives a thorough grounding in dozens of usability testing techniques and testing styles, providing bibliographies and links on each. General methodology was adapted from *Usability Testing and Library Web Site Redesign at Roger Williams University* by Information Resources Librarian Susan McMullen, at http://gamma.rwu.edu/users/smcmullen/usable.html. Guidelines for usability test staffers was adapted from those used by The University of Arizona Library, published under the title *Testing for Usability in the Design of a New Information Gateway* at http://dizzy.library.arizona.edu/library/teams/access9798/usability_studies/guide.htm. The most valuable source in terms of form design and general test structure was the documentation of the usability testing conducted in 1999 and 2001 by the Massachusetts Institute of Technology which may be respectively found at http://macfadden.mit.edu:9500/webgroup/usability/results/index.html and

. The MIT testing sessions also included surveys, which may be viewed online.

Study Roles

For the purposes of clarity, the following roles should be understood:

1. The **user** is the person who has volunteered to participate in the usability study and fill out a survey. The users of our study were not paid, but were offered refreshments and a complimentary MetaScholar pen, which bears the addresses of both MetaScholar Initiative websites. The user may also be referred to as the **volunteer** or **participant.**

2. The **proctor** is the person who administers the test and controls the pacing. Before the test, the proctor gathers information about the user. The proctor signals that the test has begun by inviting the user to be seated in front of the computer and reading a prepared statement. The proctor reads each study question aloud and then times the user as s/he attempts the requested task, stopping the user if s/he exceeds the time allotted and moving on to the next question. The proctor notes the amount of time taken for each task and whether the task was completed. After the first week of testing, it was also decided that the proctor should arbitrarily assign a difficulty score for each task during each test. The proctor also addresses user questions and gives limited assistance during testing (described below). When the test is completed, the proctor administers the survey.

3. The **recorder** is the person who takes notes during testing. The recorder also sees that the videotape recorder is running at the appropriate times. Specifically, the recorder notes the steps taken by the user in his/her attempt to perform each task, marking when the search tool is used and what terms are entered. The recorder also makes general observations about the user's apparent state of mind and the difficulties encountered and takes note of important user comments and technical anomalies. Like the proctor, the recorder addresses user questions and provides limited assistance during testing.

Programmers Sharon Kennedy and Jason White and project coordinator Kristina Watkins Mormino took turns in the proctor and recorder roles. These three also arranged and provided refreshments. During a few of the tests, an additional person was present to observe or to assist with technical problems. Thus, during each session, there were two to three members of the Central Project Staff in attendance. The presence of a programmer at all times was necessary (1) to reset the site, clearing out any information keyed in by the user before the next volunteer's test and (2) to deal with any technical difficulties that might arise.

Facilities and Equipment

The tests were scheduled in small conference rooms containing p.c.'s. In order to obtain the most complete understanding possible of the user's actions and thought processes, it was determined that the tests should be recorded on video tape. During the first trial test, we discovered that a laptop computer gives a much clearer image on film due to the

difference in the refresh rate causing less distortion. Therefore, despite concerns that the smaller keyboard and screen of a laptop might contribute to user frustration, all tests except one were performed using a laptop. (Only one user expressed dismay at having to use a laptop. The others, in fact, did not seem the least bit bothered by it.) A mouse was added to the laptop for ease of use. The set-up of the laptop and camera and the accompanying apparatuses often evoked participant comments that the test seemed very official, serious, elaborate, or professional. As a result, users seemed to take the testing and the overall project more seriously, but by the same token, it may have contributed to the stress and inhibitions of some participants. In addition to the above equipment, the proctor timed the test using a stopwatch.

On March 27th, we began experiencing technical difficulties in one of the first-floor conference rooms, resulting in our having to re-schedule one user and perform one of the tests using the desk computer of another volunteer (who happened to be library staff).   It was determined that the difficulties were due to a poor internet connection. Therefore, all subsequent testing was moved to a larger conference room on the main floor of the library.

Basic Testing Procedure

The user, if library staff, would come directly to the test site, and if not, would meet the proctor or recorder at a predetermined spot in the library. S/he would be invited to have some refreshments while being casually questioned about his/her research interests and background. S/he would be assured that the camera was there to record the screen and not the user, and that it would be turned off if the user felt too uncomfortable with the idea (which did not occur). Once the user was ready and seated in front of the laptop, the proctor read and paraphrased the following statement:

This study is designed to test a new scholarly web portal called AmericanSouth.org. As the name indicates, AmericanSouth.org examines Southern history and culture. It will allow users to see information about materials in selected library and museum archives dealing with the South. It will also feature articles and guides to conducting research written or selected by noted experts in Southern Studies. Additionally, AmericanSouth.org will provide links to other scholarly websites of interest to researchers on the South. The site will be officially launched at the beginning of the Fall semester.

With the input of volunteers like yourself, we hope that AmericanSouth.org will become a trustworthy, interesting, and user-friendly resource. Today, we are testing to see how users navigate through the site and whether the site presents any difficulties to the typical user. Remember that we are testing the effectiveness of the site design, and not your skills as a user. Difficulties you may encounter signal a fault in our system or the server and not any problem on your part.

Before we begin the study, we would like you to take about three minutes to examine the site on your own. Please do so now.

In fact, the amount of time allotted for unstructured exploration was dependent on the discretion of the user. However, if a user took a very long time and began to ask a lot of questions, s/he was advised that the time had arrived to begin testing, because there was

very little the staff could say about the site without affecting the test results. At the end of the exploration time, the proctor would hand the user the list of questions, saying:

I will ask you to answer questions and perform various tasks using AmericanSouth.org. You do not have to write down the answers. I would like you to share your thoughts out loud as you use the site, and (the recorder) will be taking notes. Three minutes will be allotted to answer each question, and the entire test should take no more than thirty minutes. Do you have any questions?

The proctor would explain that the user was free to ask questions, but that the proctor and recorder might be unable to answer them during the test. Moreover, if the user was unclear as to what was expected for a particular question, the proctor or recorder would be happy to rephrase the question. The proctor would then read the first item and begin the timer as soon as s/he finished reading the question or as soon as it was apparent the user had already started to undertake the task. The recorder would note the oral comments of the user, the path taken in pursuit of the answer, and any difficulties encountered. When the user completed the task, the time limit had been exceeded, or the user simply gave up, the proctor would note the time taken and whether, or not the task had been accomplished, and in some cases, what the apparent level of difficulty was. As soon as the recorder was ready to continue to the next question, the proctor would go on to question two, and so on in this manner until the test was completed.

The following are the questions/tasks asked of the user:

1. **Login to AmericanSouth.org with the user name test_user and the password test.**

2. **2.a. Find an archival record in University of North Carolina, Chapel Hill's Southern Homefront collection about a catechism to be taught orally.** (Answer: A Catechism to Be Taught Orally To Those Who Cannot Read; Designed Especially for the Instruction of the Slaves)
    2.b. Add the record to your bookbag.

3. **3.a. Browse the Sam Nunn Collection. How many records are there in total? Who does Senator Nunn interview in the third record?** (Answers: 697; Frank G. Zarb)
    3.b. Add the record to your bookbag.

4. **View the records in your bookbag.**

5. **Follow the link to the text of the digitized online version of the catechism record found in your bookbag. Return to your bookbag.**

6. **Add the following note to the Sam Nunn record in your bookbag: "They discussed the Alaskan pipeline."**

7. **Find a literature article on the AmericanSouth.org site. What genre is it about? Who wrote it?** (Answers: Local Color; Lucinda MacKethan)

8. **Add the following commentary to the literature article: "This genre has influenced Toni Morrison's work."**

9. **Find a link from the AmericanSouth.org site to a website about farming in Colonial Williamsburg. What is its url (website address)?** (Answer: http://www.history.org/history/)

10. **Return to AmericanSouth.org and give your feedback about the Colonial Williamsburg site. Say, "It has great pictures!"**

Notably, some of the items are questions with a specific answer, but many are tasks that the user must complete. This is because the real-life users of AmericanSouth.org are expected to use the site in order to find information, but also to interact with the site. Therefore, the test had to address both types of activities. Indeed, in question #9, the actual url was of no interest to us; we simply wished to see whether the user could find and follow a link. Therefore, as soon as the user went to the Colonial Williamsburg site, we considered the task accomplished. On the other hand, for question #3a, the users might have had the number of records on the screen in front of them, but if they failed to see it or understand that it as the answer they were seeking, the task was not accomplished. Question #6 could result in a partial success. That is, the user might have succeeded in annotating the record, but may not have chosen an element to annotate. If the annotation was entered under the default annotation, the task would be considered accomplished, but a note would be made by the proctor.

At the conclusion of the ten tasks, the proctor would ask the user to fill out a survey. During and after the survey, the user could refer to the site and ask questions freely, but the recorder and proctor would make a point of busying themselves or leaving the room, so that the volunteer would feel not feel as if s/he was being observed. If the user was planning on teaching a relevant course in the 2003-2004 school year, s/he would then be asked whether s/he would consider using this tool for instructional purposes, and if so, how. The proctor or recorder would make a note of the response, thank the user for participating, and offer more refreshments and a MetaScholar pen, finally concluding the test. The proctor would also make a note of how long the test took overall. The average approximate test time was twenty-five minutes.

Study Forms

Actual test forms may be found in the appendix. These include the Recorder Comment Form, the Proctor Comment Form (final form with a space added for the difficulty score), and the user's copy of the study questions. The survey is also included in the appendix.

User Difficulties

Each task was given a three minute time limit, because it was thought that in an actual internet use situation, if a user could not accomplish a task within a very few minutes, s/he would simply give up and leave the site. Indeed, test participants who could not find answers right away often would shrug, shake their heads, and say, "I don't know," indicating that they no longer wished to continue a question. In these cases, the proctor

would respect the user's wish to give up and stop the timer, rather than frustrate the user by compelling him/her to continue, unless the user seemed very close to success.

At times, a user would think s/he had arrived at the solution when s/he had not. The proctor or recorder would direct the user to try again. If a user exceeded the time limit on a question or gave up without arriving at the solution, the proctor or recorder would then direct the user in how the task could have been accomplished. This undoubtedly had an impact on the results of the remainder of the test. For example, if a user failed to find the record requested in question #2, s/he would be shown how to search the archives for the specific term, "catechism" and/or how to select the Southern Homefront Collection from the archive box. Then, in answering the third question, the user would know to consult the archive box or the field that displays in which archive the user is searching. S/he would also know that the archives box lists collections alphabetically. Therefore, with the assistance given, the user would have an easier time answering question #3. Conversely, had we not assisted the users, the growing frustration level would have influenced performance on the remainder of the test, anyway. In any case, since some tasks built on others, each needed to be completed. In addition, since a majority of the participants were either Southernists or the colleagues or teachers of Southernists, it was important for public relations purposes that they got some sense of the capabilities of the site. Whenever a user was given this sort of assistance, feedback was solicited as to what would have made the solution more apparent. In this way, the user was encouraged to feel that s/he was contributing to solving a problem, rather than s/he had personally failed.

There were also occasional technical problems. As mentioned above, the afternoon sessions on the 27th had to be moved or rescheduled due to a poor connection. The sessions that morning were adversely affected because the network was functioning unusually slowly. Participants were advised that this was not normal, but the amount of time required to accomplish each task took longer, and this must be taken into account when considering the test outcomes. Other problems included occasional error messages which were quickly dealt with. At times, the site would not have been properly cleared between users, so that a user would attempt to login, but would already be logged in. The time would be adjusted accordingly. Twice it happened that rather than removing the previous user's comment about a website, the programmer had inadvertantly removed the link. If in trying to answer question #9, the user was unable to find the link because it was not there, they were directed to select another link under the topic "agriculture," and the question was marked as successful. The user would then use that site to accomplish item #10.

The chief user difficulty on the affective level was getting the users to understand that they were not being tested. Because so many participants were academics, this problem was particularly acute. This difficulty persisted, even though the proctors consistently stressed at the beginning, sometimes elaborating in his or her own words, that only the system was being tested. When users began to show signs of frustration or embarassment, the project staff would hasten to let them know that other users experienced similar problems, or would focus in on the nature of the problem in the site design or functioning. The proctor or recorder would make comments such as, "Thank you. You're really helping us spot problems we need to address. This helps a lot." Such a reaction seemed to make users relax and encouraged them to be more open in critiquing the site. Still, some users made self-deprecating remarks about their skills, seemingly very conscious of being observed. A few were very timid in navigating through the site, sometimes hesitating with the cursor over a button and then deciding not to press it, rather than simply pressing it and seeing what would happen. Many were cautious about their typing in the comment and annotation fields, although told that it did not matter.

Other interesting behavioral patterns were also observed. For instance, some users, in attempting to accomplish item #10, either did not wish to give the Colonial Williamsburg site a numerical rating, or would deliberate on the rating. Teaching academics tended to assign it a seven or an eight, even though they were told to provide an enthusiastically positive comment, and the rating obviously would not count. Two expressed that they did not like having to decide, and a third hesitated to assign a numerical rating, because he was not specifically instructed to do so. Although these behaviors may distort the outcome of the study, it should be noted that the target audience for AmericanSouth.org is professional and student researchers, and so, scholarly idiosyncrasies should be taken into account in the site design. One user, though, presented a peculiar problem as a test participant, because, very accustomed to system design and testing, she persistently acted from the premise that she was to pretend to be a researcher, second-guessing both the test and the website. Her comments, however, were very helpful, and so her test has not been discounted.

Usability Study and Survey Data

Study Demographics

AmericanSouth.org will primarily target a university audience of professors, graduate students, undergraduates, and research librarians. However, the portal should also be of use to high school teachers and students, genealogists, non-academic professional researchers, and life-long learners with an interest in Southern Studies. In order to reflect these audiences, the majority of people invited to participate in the study were professors and graduate students of Emory University. Invitations were targeted to departments whose faculty and graduate student body would most likely make use of AmericanSouth.org.

Moreover, Emory library staff were also invited to participate, since several library employees have an interest in the usability study process. The librarians, archivists, and technologists who participated gave a good sense of how effective the site design is for users who may not have formal training in Southern Studies. In addition, their participation allowed the MetaScholar staff to determine whether there are any idiosyncrasies in the internet usage of professional scholars versus an educated audience working outside academic departments.

Usability Study Participants by Category

Graduate Students and Their Departments

Molly McGehee   Institute for Liberal Arts
Ellen Spears   Institute for Liberal Arts
Robin Conner   History
Rohit Chopra   Institute for Liberal Arts
Fay Yarbrough   History
Terry Easton   Institute for Liberal Arts
Amira Jarmakani   Institute for Liberal Arts
Paul Thompson   History

Professors and Their Departments

Amy Wood   Institute for Liberal Arts
Valerie Loichot   French & Italian and Comparative Literature
Beth Reingold   Political Science and Women's Studies
Sally Wolff-King[1]   English
Edward Gamarra[2]   Institute for Liberal Arts

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[1] Sally Wolff-King is also an Associate Dean of Emory College.
[2] Edward Gamarra also works for the Emory University General Libraries as collections manager for film and theatre.

<u>Library Staff and Their Departments or Job Titles</u>

Naomi Nelson   Special Collections
Grady Harris   Public Health Library
Emily Almond   Euclid implementation Specialist
Raquel Von Cogell   Research Services, Collections Management, Instruction
Kristan Majors Chilcoat   Math and Science Center
Laura Akerman   Database Quality Management
Julia Young   Director of Development
Randall Burkett   Curator of African-American Collections

In addition, there were the two participants who participated in the pretests: Francine Thurston, Desktop Support Team Leader, and Ross Singer, General Libraries Systems Development Team, both of whom are library staff. As mentioned in the previous chapter, neither of their tests is included in the usability study analysis, but their surveys are counted in the survey results.

Demographic Totals and Percentages:

<u>Usability Study:</u>

Subcategory	Total Number	Percentage
Female	15	71%
Male	6	29%
Graduate Students	8	38%
Professors	5	24%
Library Staff	9	43%
Technologists/ Web Designers[3]	8	38%
Teachers[4]	14	67%
Southernists[5]	13	62%

Total Number of Participants: 21

<u>Survey:</u>

Subcategory	Total Number	Percentage
Female	16	70%
Male	7	30%
Graduate Students	8	35%
Professors	5	22%
Library Staff	11	48%
Technologists/ Web Designers	10	43%
Teachers	14	61%
Southernists	13	57%

Total Number of Participants: 23

[3] Participants whose professional work requires a high degree of specialization in computer technology, or who have significantly contributed to the design of a professional or scholarly website.
[4] Participants who have professionally taught in the past or who are currently teaching. This included one graduate who has taught at the middle school/ junior high level and a library staff member who has taught at the high school and collegiate levels. Both have done extensive teaching in history.
[5] Participants who have conducted research or professional work focusing on some facet of Southern history and/or culture. Percentages represent some overlap.

Study Results

Each question of the study will be examined under the label of the function it was designed to test. Detailed below each question is a summary of the average time taken for completion, the median time taken for completion, and the standard deviation in time taken. Note that only the times for participants who completed the task are included in these figures, under which the percentage of times the task was actually completed is provided. There is also a bar graph grouping the results in thirty-second increments, with an indication of the number of failed attempts marked on the far right. Because in some cases a given task could not be performed on an individual test due to technical or administrative problems, the total number of results indicated to the right of the bar graph may be fewer than twenty-one. A line graph charts the exact times taken in successful attempts only.

Also included for each question is an average difficulty score. During the first week of testing, the MetaArchive programmers suggested that they would be able to immediately begin to improve the site, if they could receive preliminary feedback prior to the completion of this report. In order to determine the areas most in need of improvement, the Proctor Comment Form was amended to include difficulty scoring. For each of the tasks, the proctor subjectively assigned a score between one and five, with "1" indicating absolute ease in accomplishing the task and "5" indicating extreme difficulty. Because difficulty scoring was not introduced until the third day of testing, it was only used in 11 (52%) of the studies.

Following the hard data is more precise information about the users' responses and reactions. This information is drawn from the testing comment forms, and sometimes includes direct quotes from volunteers. Beside each listed user action or comment, a number is given indicating how many users had that reaction or one very similar. The steps under "user paths" are provided roughly in the order that they would have been taken. For example, in the second item, a user would have to attempt a search or a browse before reaching the screen where s/he could select an archival collection. Thus, this last step is listed after the steps that would likely have been taken earlier. Steps taken that would not lead the user to perform the task correctly are listed afterwards in no particular order. After the user's steps, notes are provided specifically about whether volunteers used the search function, and if so, what key words were entered. Finally, any difficulties or noteworthy issues are listed.

Logging in

1. Login to AmericanSouth.org with the user name **test_user** and the password **test**.

Average time:	**0:32**
Median time:	**0:27**
Standard Deviation:	**15.68**
Average difficulty score:	**1.9**
Percentage of times completed:	**100%**
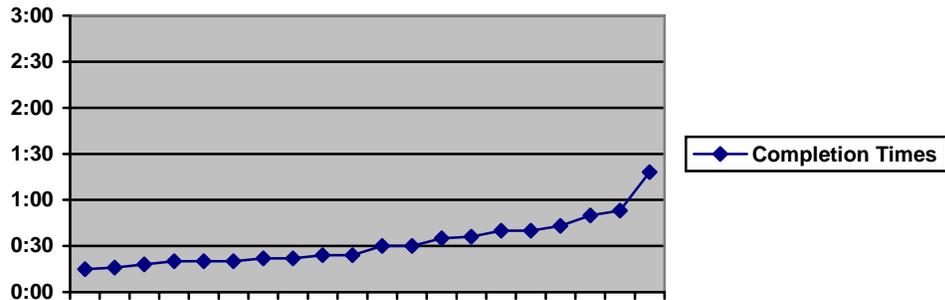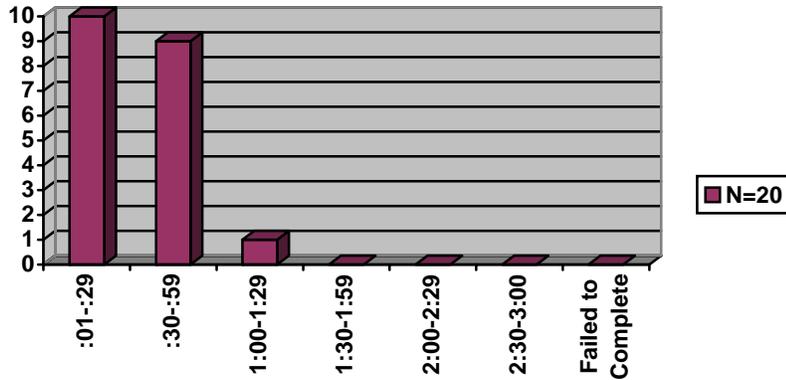
User Paths:

Chose "login" from the main menu and "login" on the next page	20
Started to create account	1

The search tool was not used.

Issues/ Problems:

Wasn't sure whether the computer should remember the login	2
"Why do I have to click login, then login again?":	1
Thrown slightly by underscore in the login name[6]	1
Didn't think that the login page was very clear (took awhile)	1
Had difficulty locating the login button	1

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[6] This user was of foreign origin and may have been thrown off by having had to type a relatively rare symbol on an American keyboard.

Searching/Adding Records to the Bookbag

2.a. Find an archival record in University of North Carolina, Chapel Hill's Southern Homefront collection about a catechism to be taught orally.

Average time:	**1:10**
Median time:	**0:43**
Standard Deviation:	**60.43**
Average difficulty score:	**4.1**
Percentage of times completed:	**43% (Nine out of twenty-one users)**

2.b. Add the record to your bookbag.

This was not timed separately. Once the users found the above record or were led to it, they all successfully added it to their bookbag in seconds with minimal difficulty. The charts below reflect the times and success rates for 2.a. only.
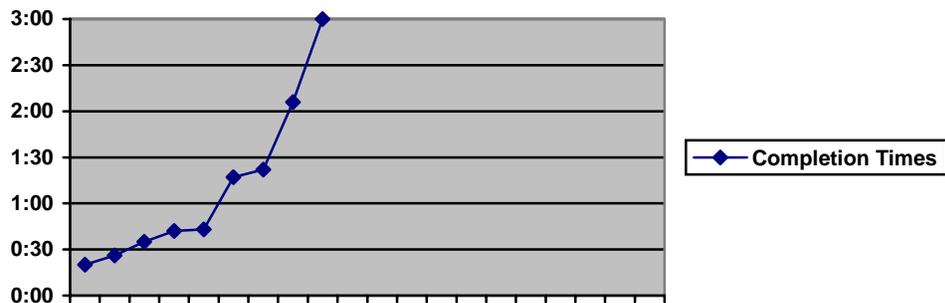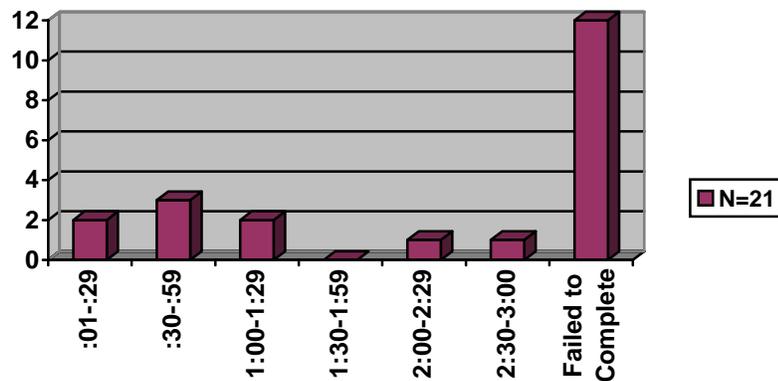
User Paths:

Used the search archives box	12
Selected "search site" from main menu and searched the site	5
Selected "browse archives" from the main menu	12
Scanned browse results	2
Scrolled through and selected archives from the archives box	13
Consulted weblinks	2
Viewed records in an incorrect archive	5
Viewed a digital surrogate	1
Clicked on help	1

Search Tool:

Seventeen (80%) of the participants used the search tool, although five searched the site (as opposed to the archives), and eleven (52%) tried to browse first. The combinations of terms entered in the search included:

Catechism	5
Southern homefront chapel hill oral catechism	1
Southern homefront; catechism	3
Cathecism; catechism	1
Southern Homefront; Chapel Hill	1
Southern Homefront Collection	1
Catecism; Southern Homefront Collection; UNC Chapel Hill; Southern Historical	1
Southern AND homefront AND catechism AND oral; southern homefront; southern	1
University of North Carolina; Southern Homefront; Chapel Hill Southern Homefront	1
University of North Carolina	1

Issues/ Problems:

With the Search:

Felt that the search box should be longer	1
Missed that the results were displayed by archive	2
Failed to see the search archives box	1
"How is the site organized?"	1
Wondered whether clicking on "article topics" would help	1
Wasn't able to find Southern Homefront	1
Too many abbreviations in the archive box	1
Felt that the user should be able to view more than three results at a time or have the option to view a short form or a long form	1
Felt confused, frustrated, or dumb	3
Felt that search categories would be helpful, allowing people to search by archive, name, etc	1
Didn't realize he was at the list of records in Southern Homefront	1
Didn't know she'd found the answer	1

With the Bookbag:

|	
No problem adding to bookbag, but thrown by the pop-up screen, which disappeared within seconds	1
No problem adding to bookbag, but wasn't sure when done	1
Did not know what bookbag was	2
Thought the bookbag might be akin to the "shopping carts" used on commercial sites	1

Browsing/Adding Records to the Bookbag

3.a. Browse the Sam Nunn Collection. How many records are there in total? Who does Senator Nunn interview in the third record?

Average time:	**0:48**
Median time:	**0:40**
Standard Deviation:	**28.38**
Average difficulty score:	**2.2**
Percentage of times completed:	**95% (Nineteen out of twenty users)**

3.b. Add the record to your bookbag.

Again, the use of the bookbag function was not measured separately. Because users were familiar with this tool from the previous questions, there were able to use it immediately. Browsing results only are reflected in the following graphs.
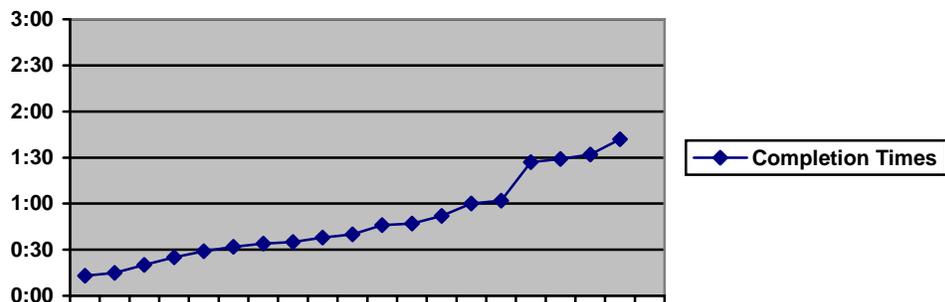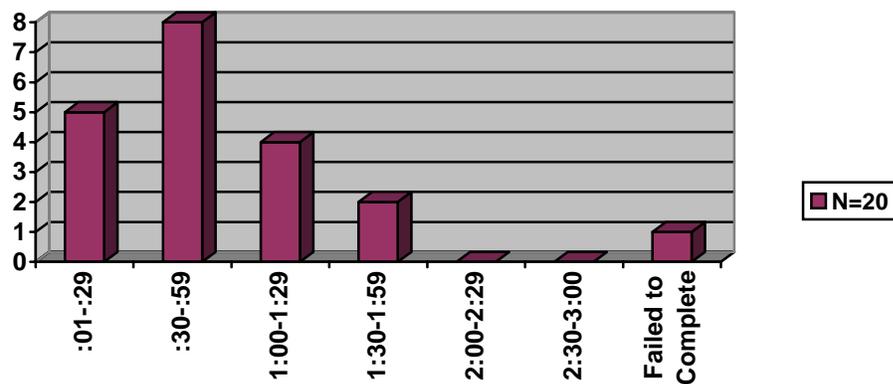
User Paths:

Went to browse archive under main menu	10
Searched archives	9
Went to "search site" under the main menu	2
Selected the Sam Nunn collection from the archive box	10
Identified the number in the archive box as the total number of records	20
Looked for Sam Nunn in other archives	1

Tried to judge the total number of records by counting how many were on the
   page of browse results looking to see how many pages of results there were
   (presumably to arrive at an estimate by multiplying)   1

Search Tools:

This task could be accomplished either by starting with browsing from the outset or by
conducting a search on the name of the collection and then choosing the Sam Nunn
Collection from the archive box. Just under half the participants (48%) opted to use the
search tool. The combinations of terms entered in the search included:

Sam Nunn   5
Sam Nunn Collection   3
Nunn   2

Issues/ Problems:

Did not notice browse collection link   1
"I saw that already" – Change in screen overlooked   1
"arranged historically?" – Confusion about how the results are arranged   1
"No real explanation of what the numbers in parentheses mean"   1

Accessing Records in the Bookbag

4. View the records in your bookbag.

Average time:	**0:07**
Median time:	**0:05**
Standard Deviation:	**9.07**
Average difficulty score:	**1.5**
Percentage of times completed:	**100%**
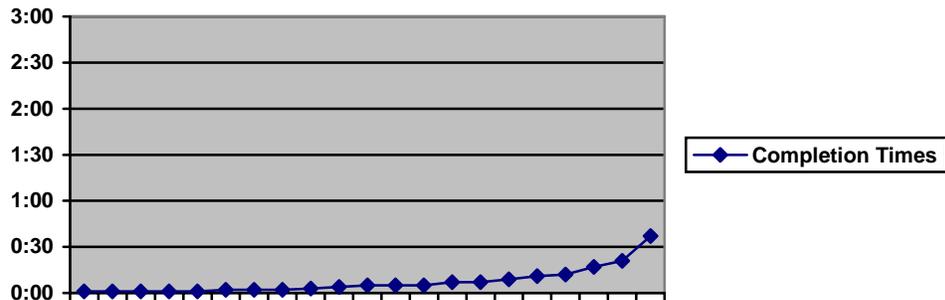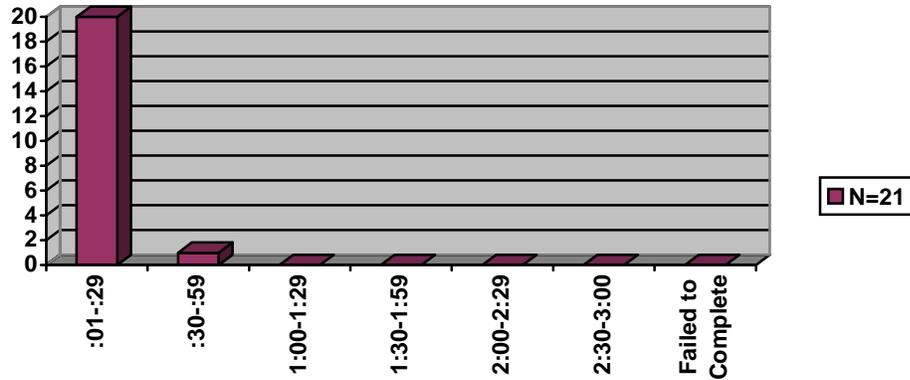
User Paths:

Clicked on "my bookbag" on the main menu	19
Clicked to open the bookbag from the pop-up screen while entering the record from question #3	2

Search Tools:

Five users started to use the search tool before noticing the bookbag heading under the main menu. No one got as far as entering search terms.

Issues/ Problems:

Took a moment to find the bookbag in the main menu	2
Went to view archive through pop up	2
Thrown off by how quickly the pop-up window diasppeared	1

Accessing a Digital Surrogate

5. Follow the link to the text of the digitized online version of the catechism record found in your bookbag. Return to your bookbag.

Average time:	**0:20**
Median time:	**0:08**
Standard Variation:	**30.85**
Average difficulty score:	**1.8**
Percentage of times completed:	**100%**
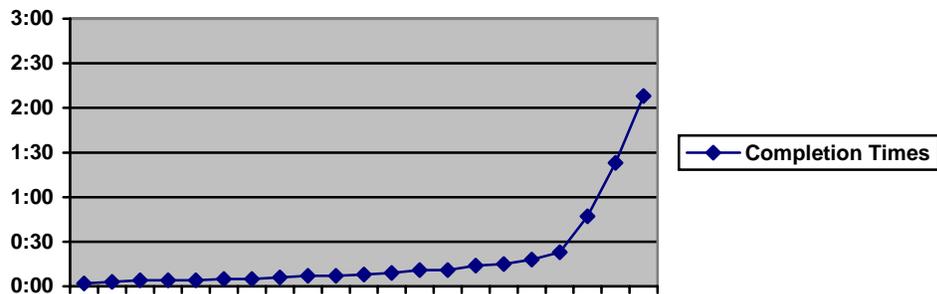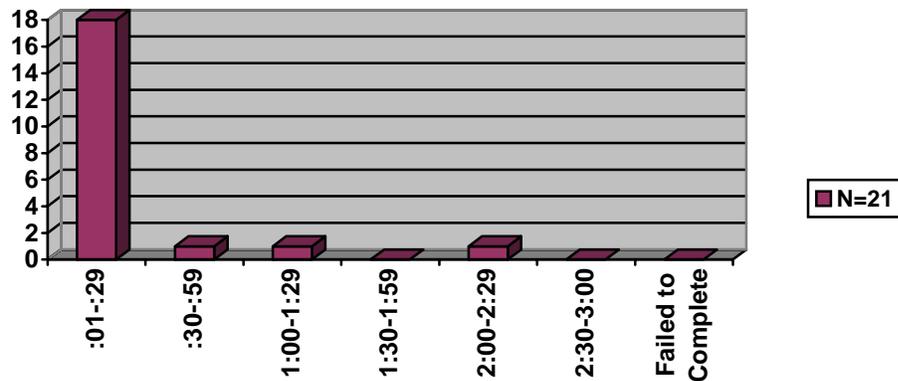
User Paths:

Reopened bookbag	1
Clicked on catechism record/link	21
Clicked on the link to the digitized text	21
Scrolled down record looking for link	1
Searched through next and previous records looking for link	1

The search tool was not used.

Issues/ Problems:

Accidentally removed catechism record; no problems performing the task after it was restored	1

"It is weird that the full text is hidden under identifier." 1
"Cool, awesome, this'll save so many archival trips!" 1
Didn't understand the question at first 1

Annotating a Dublin Core Record

**6.** Add the following note to the Sam Nunn record in your bookbag: "They discussed the Alaskan pipeline."

Average time:	**1:01**
Median time:	**0:53**
Standard Deviation:	**26.96**
Average difficulty score:	**2.9**
Percentage of times completed:	**84% (Sixteen out of nineteen users, but only seven -- 35%-- entered the annotation with an acceptable element)**
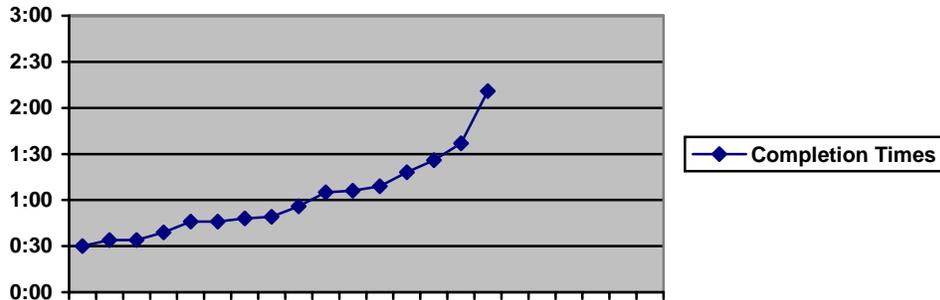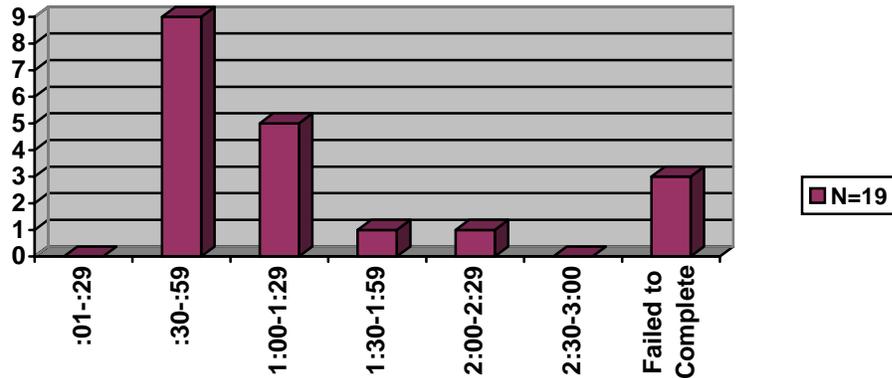
User Paths:

|	
Reopened the bookbag	1
Clicked on the Sam Nunn record in the bookbag	17
Scrolled up an down the record looking for where to enter the annotation	2
Clicked "annotate this item"	17
Typed the note in the annotation field	17
Looked at the pull-down element menu, but did not choose an element	4

Looked at the pull-down element menu, and chose the element "title"	3
Looked at the pull-down element menu, and chose the element "description"	2
Looked at the pull-down element menu, and chose the element "subject"	1
Returned to the record, copied the information from the title field, and pasted it under the note in the annotation field	1
Clicked preview	17
Scrolled down and clicked continue	16
Attempted to go back and look at a previous screen	3

The search tool was not used.

Issues/ Problems:

|	
Difficulty finding the "annotate this item" button	3
Didn't see the element field	10
Uncertain about the purpose of the element menu	1
Uncertain about how to enter the annotation once it was typed	2
Could not find the annotation on the preview screen	1
Unsure about whether the annotation had been correctly entered	2
Confused or irritated about having to preview and continue	2
Thought the annotation function was for storing personal notes	1
Began getting frustrated, embarrassed at his skill level	1
Technical bug	2

Viewing an Article in Context

7. Find a literature article on the AmericanSouth.org site. What genre is it about? Who wrote it?

Average time:	**1:03**
Median time:	**0:45**
Standard Deviation:	**37.10**
Average difficulty score:	**3.1**
Percentage of times completed:	**86% (Eighteen out of twenty-one users)**
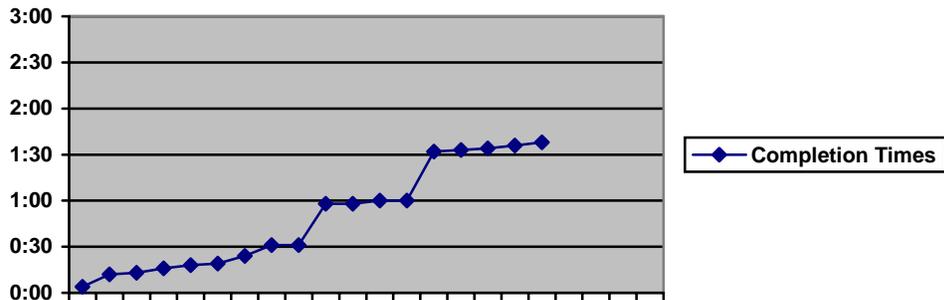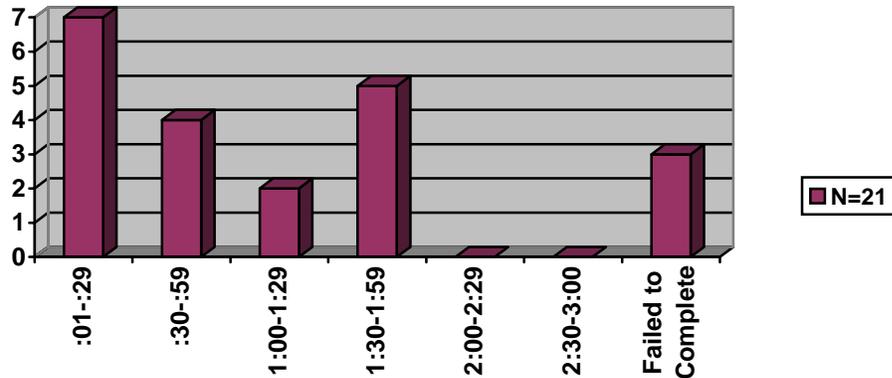
User Paths:

Chose "article topics" from the main menu	12
Found articles on the home page	8
Clicked on the literature icon	10
Scrolled down to find the author	1
Opened the full text Local Color article	2
Clicked on weblinks in the main menu	3
Searched the weblinks	1
Clicked on "art and literature" in the weblink topics	1
Browsed the archives	2
Scrolled through the archives box	1
Searched the archives	3
Searched the site	1

Search Tools:

Three (14%) of the participants used the search tool, two conducting multiple searches. The search terms used were:

AmericanSouth.org	1
folklore	1
literature	3
Faulkner	2
Welty	1

Issues/ Problems:

Wondered if she was seeing all of the literature articles	1
Looked for a list of article categories	1
Didn't choose "article topics" because she thought she had to have a topic to type in	1
Confused by the question (different understanding of the word "genre")	2
Confused about what the abstract was	1
Seemed very unsure, even when the answer was on the screen	2
Did not realize search archives was only for archives	3

Adding Commentary About an Article

8. Add the following commentary to the literature article: "This genre has influenced Toni Morrison's work."

Average time:	**1:16**
Median time:	**1:06**
Standard Variation:	**34.79**
Average difficulty score:	**2.1**
Percentage of times completed:	**95%**
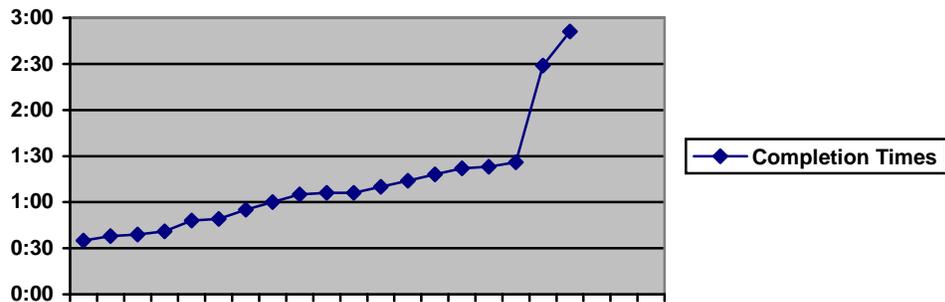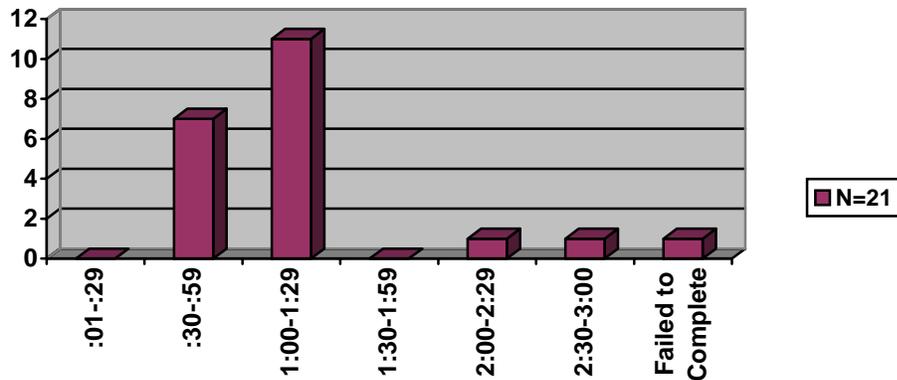
User Paths:

Clicked on the literature icon	1
Opened the article	20
Clicked on "comments"	20
Clicked on "post comment"	20
Typed in comment	20
Clicked "preview"	6
Clicked "ok"	20
Scrolled up and down looking for appropriate buttons	1
Looked for the comment button in the main menu	1
Clicked on the article author ("Lucinda Mackethan")	3
Explored FAQ/ask a question	1

The search tool was not used.

Issues/ Problems:

Confused by having to scroll down	2
Looked for the word "commentary" (found in the question)	2
Expected to see the comments box on next page after clicking "comments"	1
Surprised not to see the typed comment at the top of the next page	3
Surprised that the comment was not posted when the user did not click "ok"	1
Unsure how to "solidify" the post	1
Felt the need to read the article before posting the comment	1
Didn't understand the preview option	1
Looked on the main menu for a way to post a comment	1
Expected the same process and semantics as for annotating a record	2
Generally confused about the process	1
Thought she wasn't logged in	1
Surprised that the article was much longer than the abstract	1

Finding Weblinks

9. Find a link from the AmericanSouth.org site to a **website** about farming in Colonial Williamsburg. What is its url (website address)?

|	
Average time:	**0:46**
Median time:	**0:29**
Standard Variation:	**38.84**
Average difficulty score:	**2.1**
Percentage of times completed:	**94%**
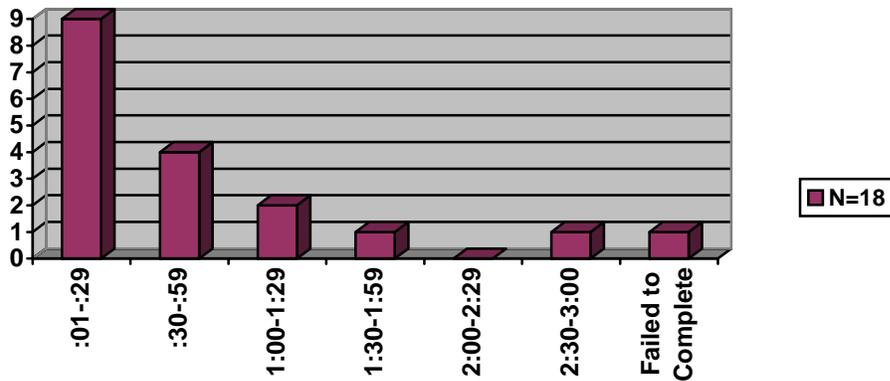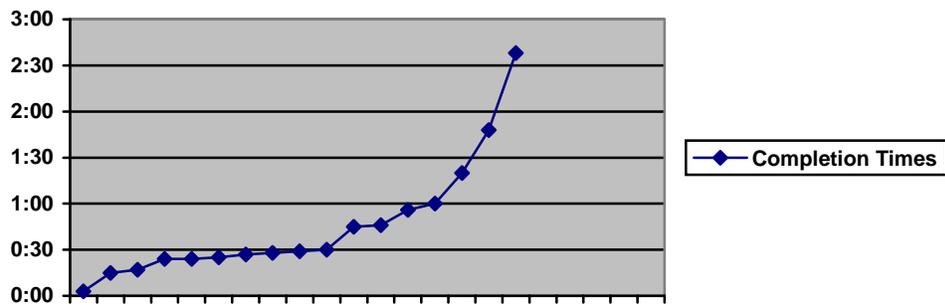
User Paths:

Returned to the homepage	1
Clicked on "weblinks" from the main menu	18
Clicked "agriculture"	13
Searched the weblinks	5
Searched the site	1
Looked in the popular/top rated sites	1
Clicked on the Colonial Williamsburg link	17
Scrolled past the Williamsburg link twice without choosing it	2
Chose "articles topics" on the home page; chose "agriculture"	1
Looked in the archives	1

Search Tools:

A third of the participants used the search tool. It was entirely possible to find the link through the search, although it was not at all necessary. However, the search would only be successful if the term entered named Colonial Williamsburg in some way. The search terms used included:

Williamsburg	1
Colonial Williamsburg	3
Farming	2
Farming in colonial Williamsburg	2

Issues/ Problems:

Slight trouble with the question	1
Had trouble discerning from the description whether the site was about farming	1
Would not go to agriculture but to another topic	1
Searching the site seemed the same as searching the archives	1
Wanted to find the site through Google	1
The link was not apparent as such	1

Adding Commentary About a Weblink

10. Return to AmericanSouth.org and give your feedback about the Colonial Williamsburg site. Say, "It has great pictures!"

Average time:	**1:03**
Median time:	**0:58**
Standard Variation:	**37.48**
Average difficulty score:	**2.9**
Percentage of times completed:	**62%**
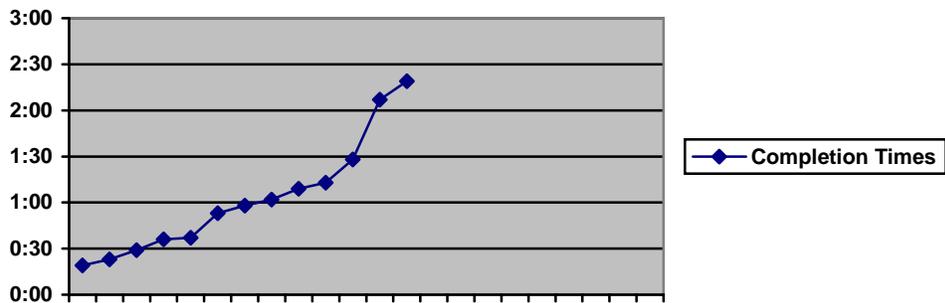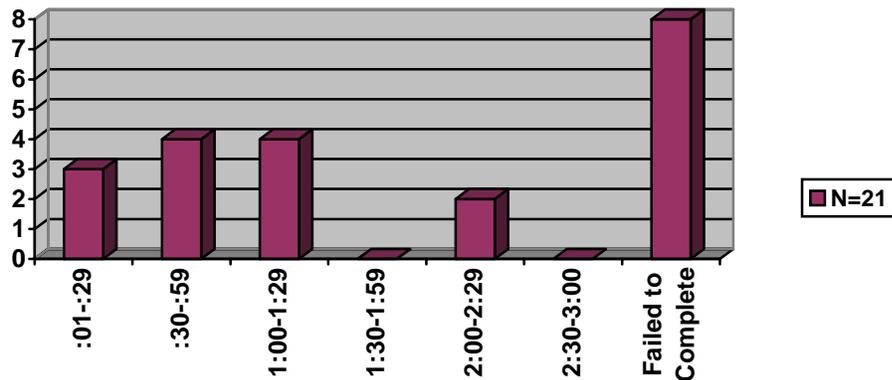
User Paths:

Clicked the link again	2
Clicked "rate this site"	13
Typed the comment	15
Assigned a numerical rating from the pulldown	5
Clicked the pulldown, but opted not to choose a number	1
Clicked "rate this resource"	5
Clicked "recommend us"	6
Completed the "recommend us" form	1
Went to the homepage	2
Chose "weblinks" from the main menu	3
Chose "my account" from the main menu	2
Viewed a previously posted comment	2
Clicked on search the site, but did not search	1

| Looked in article comments, display mode, threshold comments | 1 |
| Went through all of the links | 1 |

The search tool was not used.

Issues/ Problems:

Couldn't figure out how to enter the comment	4
Did not understand that a numerical rating was required	2
Difficulty locating the "rate this site" button	3
Wanted to know if it was necessary to assign a numerical rating	2
Missed the numerical pulldown	1
Failed to select a numerical rating	1
Confused by question because it didn't specify to rate the site	1
Confused when comments link didn't change the screen	1
Confused about the process generally	1
Ability to rate site only available if the site was found through the weblinks topics, not through the search	6
Thought he should be adding the comment to the actual site, not to the description of the link	1
Probably would not ever rate a site	1
Not clear whether her rating was recorded	1

Summary of Study Results

Easiest Tasks:

The following tasks were all performed by 100% of the participants. They are ranked in order of ease of execution, as reflected in the difficulty scores and average times for completion:

1. **#4 –** Accessing records in the bookbag,
2. **#5 –** Accessing a digital surrogate, and
3. **#1 –** Logging in.

Most Difficult Tasks and Most Common Problems That Occurred in Their Execution:

1. **#2 – Searching**
   (57% failure rate, consistently high difficulty)

   Problems encountered: General confusion about what constitutes an article versus an archival record versus a collection and how to search for each; failure to recognize what was being presented on the screen (especially the search archives box) and when the screen had changed to show new results; attempts to browse rather than to search; searching in the first collection bearing the name of the institution in question (UNC –CH); failure to understand that results are displayed by archive.

2. **#6 – Annotating a Dublin Core record**
   (16% failure rate with regards to entering an annotation, 65% failure rate with regards to choosing which element to annotate, variable difficulty)

   Problems encountered: Confusion regarding the "Preview" and "Continue" buttons (unclear how to enter the annotation); expectation to see the annotation field and annotation preview at the top of the page and not at the end of the record; failure to notice the element box or declining to choose an element; confusion as to which element to choose; confusion as to whether s/he should in some way use the information in the record's field for the default element; surprise at seeing the annotation in the field of the default element; uncertainty as to when the process is completed. (Some hesitation in clicking the "Preview" and "Continue" buttons seemed to stem from nervousness about potentially making a mistake in a testing situation, causing some volunteers to click timidly.)

3. **#10 – Adding commentary about a weblink**
   (43% failure rate, variable difficulty)

   Problems encountered: Failure to numerically rate the site when entering a comment (either through choice or because s/he did not see the pull-down); difficulty finding the button to enter the feedback; attempts to rate the link on the external site (either a misunderstanding of the question or a failure to understand that s/he was no longer on AmericanSouth.org); uncertainty as to how to get back to AmericanSouth.org; attempts to fulfill the task by clicking on "Recommend link"; failure to spot the "Rate this site" button or to understand that that is where one goes to gives feedback; uncertainty as to whether the rating and comment were successfully entered; confusion as to why there was no preview button here as there is when one annotates a record.

Survey Results

Again, there are twenty-three surveys considered in the results, as opposed to twenty-one tests. All sections of the surveys were filled out by each user, although there were times that users indicated a half-number, rather than a whole-number score on the one-to-five scale.

Section One

The first section of the survey addressed the user's self-determined skill level and general impressions about AmericanSouth.org. The participants read the following statements and then assigned a score from one to five using the following guidelines:

> 5 = Strongly Agree
> 4 = Agree
> 3 = Agree Slightly
> 2 = Disagree
> 1 = Strongly Disagree

The average results were as follows:

Question	Average Score
1. I am very proficient at using the internet.	3.78
2. I regularly use the internet when conducting research/ fulfilling the duties of my job.	4.22
3. I found AmericanSouth.org easy to use.	3.39
4. I am likely to use AmericanSouth.org once it has been launched.	3.74

Section Two

In this section, users were asked to rate the usefulness to researchers of several aspects of the site using the following scale:

5 = Very Useful
4 = Moderately Useful
3 = Slightly Useful
2 = Not Especially Useful
1 = Not Useful at All

5. The archives	4.48
6. The articles	4.30
7. The weblinks	4.50
8. The ability to add notes to records	3.91

Comments and Criticisms

Following is a list of positive comments provided by the users. To the right is an indication of the number of users making that comment. Also incorporated in this list are comments made orally to the testing staff.

Positive Comments:

This site is off to a good start. Great work so far!	4
The site is/ promises to be clear, manageable, and/or intuitive.	4
Great concept! Great resource!	3
The articles will be a helpful resource.	2
The weblinks will be a helpful resource.	2
The links to digital surrogates and archival sites are great!	2
Great design!	1
The site offers a better way to search for archival information.	1
There is a good breadth of information.	1
The text is clean and appears easy to read and print.	1
The site should have widespread appeal.	1
The archival metadata will be a helpful resource.	1
The organization of the site by themes and genres is helpful.	1
The color is good on the weblinks page.	1
Great title font!	1

Criticisms:

More content is needed.[7]   5
The site (and particularly the homepage) should be more colorful and visually
    interesting. The font, buttons, and links should be bigger and bolder. The site
    should incorporate graphic and sound media.   5
There should be a page/ help screen that explains how to use the site (tutorial).   3
The home page should offer a better introduction to the site.   3
The content on the homepage is confusing.   2
The site is not intuitive.   1
The site is too text-heavy on the front end.   1
The purpose of the bookbag is unclear.   1
The terms used on the site and the ways of interacting with the site lack
    consistency or clarity ("annotate" versus "post a comment", for example).[8]   1
There should be more navigation tools (such as subject listings) up front.   1
The list of archives should be clearer and presented in a standardized way.   1
The annotation process should be simpler, not requiring a user to choose an
    element.   1
The weblinks should allow string searching rather than "word" searching.   1
Wasn't clear on the distinction between weblinks and links to a digital surrogate or
    archival site.   1
Unsure about the access to digital surrogates and archival sites.   1

Suggestions:

The site should provide information on its ongoing status (what materials are
    included and what resources are in process).   2
Offer an African American web portal with these features.   1
Make it so that users can access journal articles online.   1
The site should incorporate folk music and indigenous art.   1
It would be handy to have an expanded explanation of each menu item,
    appearing as a mouseover.   1

Informal Pedagogy Survey

The survey was designed to be as general as possible, so that any participant,
whether a professor, archivist, graduate student, or technologist, would be able to
address all questions. However, from the beginning of the usability testing, it was
apparent that it would be useful to know whether participants who teach would
find AmericanSouth.org a useful pedagogical tool. Therefore, those who reported
having taught in the past or preparing to teach in the coming academic year were
asked whether and in what capacity they might use the web portal for instruction.

The percentage of participants intending to teach during the 2003-2004 academic
year who would consider using the site for in-class instruction, curriculum
development, or as a research aid to students was **77%.** One participant said that
he would include it in a list of recommended sites to be distributed to his students.
Another user said that her use of AmericanSouth.org as a teaching tool would
depend on the technological capabilities of the classroom. A professor, who never

---

[7] One user specified that more would be needed under the headings "Mythic South" and "Southern Gothic."
Another stated that more articles and metadata would be necessary.
[8] In fact, these are very distinct functions, but the user's failure to grasp this points to a problem in the conceptual
presentation of the site.

uses archival resources, responded that she would not direct students to the site

until there were more than just a few articles in each category, but that she would be willing to revisit the portal in the future. This position was later echoed by a graduate student assistant and former secondary school teacher, who does use archival resources in his work. Another volunteer stated that she would not use the site for pedagogical purposes, because the content is not relevant to her courses.

The responses about how educators would use the site also varied. One scholar explained that she would use the articles to assist her in building lectures, but not to assign as reading to students. Another said he might put selected weblinks on his syllabus. A third said that she would use the articles, and she found the links engaging, especially as resources for research projects. Yet another specified that she would not attempt a classroom use of AmericanSouth.org at all, but that she too would incorporate it in research assignments. One volunteer was particularly enthusiastic about the possibility of compiling selected weblinks and articles in the bookbag (a future capability of the function) and directing her students to those specific materials. She said that she might prefer the use of AmericanSouth.org to the Blackboard program, if it would enable her to collect materials in this way for pedagogical use.

Recommendations and Next Steps

Interpretation of the Study Data and Recommendations

Based on the data and comments contained in the previous chapter, the MetaScholar Central Project Staff has decided to make significant adjustments to AmericanSouth.org. In fact, the staff has long been aware of potential problems in the site design and looked forward to the results of the test in order to determine the best way to proceed with improvements. Following each of the test items below, there is a summary of the findings and the team's ideas for addressing points of difficulty and confusion. For certain items, there was a lack of consensus on how best to proceed or uncertainty about what would be the best solution. Therefore, multiple approaches may be attempted to resolve some issues.

Logging in

1. ***Login to AmericanSouth.org with the user name test_user and the password test.***

Generally, logging in was not a problem for users, but that may have been because they noticed the location of the login button before testing began, when they had free time to poke around the site. Since our first pre-tester had difficulty locating the login, and since one or two users commented that it was difficult to see, the decision was made to make the login button more visible by making it a block in the upper left-hand corner of the homepage.

One user also commented that it was bothersome to click "login" and then have to choose "login" (versus "Register an account") a second time. Now the user may login directly from the homepage, because there are fields for the login and password above the button. The user may register by clicking where it says "first time users register here."

There was concern in the Central Project Staff about the "remember me" box under the login. However, no users found any real difficulty with this option, although some asked whether they should check the box, a question they would have answered for themselves if they had been using their own computers. Still, the programmers plan to write a cookie to remember the login, or add a mouseover to explain the login and remember me functions, or change the wording from remember me to something like "keep me logged in."

Finally, there were questions among the test users as to why someone would wish to login at all. Therefore, a "why login?" button will be added next to the login button, and a question will be added to the FAQ.

Searching/ Adding Records to the Bookbag

> ***2.a. Find an archival record in University of North Carolina, Chapel Hill's Southern Homefront collection about a catechism to be taught orally.***
> ***2.b. Add the record to your bookbag.***

This was without a doubt the most difficult item in the study. It also goes to the heart of the central function of AmericanSouth.org: the searching capability. The question required users to search the Dublin Core records and then select the appropriate institution and collection in order to find the answer. The users had several difficulties in fulfilling this task. For one thing, the search archives box was sometimes overlooked, and when it was spotted, the users typically did not know what it was. In general, there was a failure to understand that search results were grouped by archive. The users were expecting that results would be grouped by relevancy, as they are for Google™. Therefore, when they conducted a search, they expected the first results they saw to be the three best results for their search. Furthermore, four users chose the "search site" button rather than the "search archives" box.

Nine of the users (43%) searched terms naming the collection: "Southern Homefront," "Southern Homefront Collection," "Chapel Hill," "University of North Carolina," "UNC Chapel Hill," etc.   This may indicate that certain users did not understand that they were being asked to locate metadata about a specific document (the catechism record) within a collection (Southern Homefront) housed at an institution (UNC, Chapel Hill). Because the question included all of these elements, a failure to perform the task could indicate at least one of three things:

1. The user was having difficulty with the interface.

2. The user preferred to search with the greatest number of terms possible, believing that s/he would get more precise search results.

3. The user did not understand how items are arranged into collections within archives. This idea is somewhat supported by the fact that three of the users who fulfilled the task relatively easily reported extensive use of archival materials in their work.

In general, the distinction between the Dublin Core records and the original AmericanSouth.org content (articles, descriptions of weblinks, etc.) seemed unclear. Therefore, it will be very important to differentiate these categories as distinctly as possible on the homepage. (In fact, quite a few users stated that there should be an introduction to the site on the homepage.) Moreover, users may have been confused by the term "archives," since in internet terminology, this word indicates old content that has been saved. Thus, the Central Project Staff has decided to replace it with the phrase "special collections," which is more likely to evoke the context of the library.

The interface, too, will have to be changed. For one thing, the "search archives" box will be replaced with a "search" box, to the right of which will be a drop-down menu from which the user may choose "all," "special collections," "weblinks," and "AmericanSouth articles." With this combined search feature, the user may get a cross-section of sources related to the topic (in which case the special collections section of the screen will take more or less space, depending on how many results are returned) or may proceed directly to the type of resource that s/he wishes.

The Central Project Staff was more divided on the issue of how the results ought to be presented. There were several conflicting suggestions:

1. The placement of the archives box should be switched so that it would appear to the right of the archives message. The message would be made bolder and would clearly state: "You are viewing results for the ___ Collection. You may select a different collection in the box to the right."

2. The archives box should be gotten rid of altogether. Instead, the user should get a list of institutions along with the number of records in each. A message would read, "You have results for the following institutions." The user would then have to click on a specific institution to view its results. This solution may not be feasible in ARC, because it requires that records be grouped by collection, not institution. Additionally, it is important that the user not have too many click-throughs, as that will lead to tedium and irritation with the site.

3. The user should get a list of institutions. Next to each institution would be an expand button to see the collections for that institution. This solution would cause a problem with cross-browsing.

4. Collections should be removed from the organization of results. The user should get all results from the search, and next to each result, there should be an icon indicating the source. Otherwise the user could get mixed results, each followed by a button that says, "Get more from this collection." Alternately, the user could get a set of mixed results with a button that says, "Group by collection." One potential problem with this solution is that even the user who uses search terms judiciously may be overwhelmed with results that do not necessarily have an accurate relevancy ranking. This is essentially the problem with commercial search engines. Another problem is that the results of small collections might get lost in the flood of records from very large collections.

Because no clear solution could be determined in the meeting, it was decided that the Technical Design Team would create a few test sites using different options. They will also investigate borrowing searching ideas from Amazon.com. In the end, a combination of approaches will probably be necessary.

Browsing/Adding Records to the Bookbag

3.a. *Browse the Sam Nunn Collection. How many records are there in total? Who does Senator Nunn interview in the third record?*
3.b. *Add the record to your bookbag.*

The third task went much better than the second, largely because if a user was unable to find the solution to the searching task, the recorder or proctor explained it to him/her. Thus, by the time the user proceeded to the third question, s/he already understood the use of the archives box, knew to look for the archive message, and realized that all of the results were grouped by archive. A few users, however, voiced uncertainty as to what the numbers in parentheses meant and only guessed that it referred to the number of records. There was also confusion as to whether the records were arranged in any particular order.

One solution is to make the text that tells what collection the user is in much bigger and clearer. In the future, the search and browse screens will be treated separately, so that the changes needing to be made to the search function will not necessarily affect the display of the browsing results. It was also suggested that the "browse archives" button be relabeled "browse by collection."

Curiously, thirteen (62%) of the users who were directed to find a record about a specific subject attempted to browse at some point, and ten (48%) of the users who were plainly told to browse the Sam Nunn Collection tried to perform a search. This points in part to individual research habits, and should be addressed in the site design. The Central Project Staff should also take into account that since all of the volunteers were students, faculty, or staff of Emory University, they may have been influenced by Euclid, the General Libraries online catalogue, which allows the user to enter a search term and "browse" for that term or to "browse the shelves." Emory faculty and students may therefore be unclear about what is usually meant by the term "browse."

Accessing Records in the Bookbag

4. View the records in your bookbag.

The name "bookbag" has always troubled the MetaScholar staff, because it might give the impression that users could purchase something or create a virtual library of texts. This misgiving was confirmed during testing. None of the users experienced any difficulty in using the feature (either adding a record to the bookbag or viewing the assembled records in the bookbag), but several questioned what exactly the bookbag is. The Central Project Staff has discussed renaming the feature, "My Collection," but the presence of the word "collection" in other contexts might lead to confusion. In point of fact, the word may refer to an entire institutional repository ("special collections"), a thematic body of related resources ("the African American Writers Collection"), or the compiled papers and effects of a particular family, individual, or organization ("the Zora Neale Hurston Collection") that may or may not occur within the larger thematic body. Although the well understood term "Special Collections" seems the most appropriate solution as a semantic for the archival records, the repetition of the word "collection" outside of the archival context risks confusing the user. Moreover, the possessive pronoun in "My Collection" would likely add to the misunderstanding that the user might use the function in order to make a purchase of some type. Thus, until a more adequate solution can be found, the feature is being labeled "Saved Items."

In future, if possible, the saved items function will be expanded to include *any* type of site content. This will make it a better teaching tool, as instructors would be able to mediate their students' interactions with the site through collected articles, weblinks, and/or Dublin Core records.

Accessing a Digital Surrogate

5. Follow the link to the text of the digitized online version of the catechism record found in your bookbag. Return to your bookbag.

All of the users were able to accomplish this task, although a few seemed confused as to what they were being asked to do, finding the link but failing to click on it without prompting. Others seemed to choose the link because it was the only item of the record that could be clicked on. Although the Dublin Core elements have their uses for archivists and librarians, some are meaningless to the typical user, such as "discovery," "source DL," and "identifier," the element that contains the link to the digital surrogate. In order to be useful, these should be relabeled.

Other suggestions for clarity were that the Dublin Core element labels be made hotlinks, and that the titles in the abridged records be highlighted in some way, so that it is clear to the user that s/he may click on them to see the full record. (As of now, the only way the user knows to click on them is by spotting the change in the cursor when s/he happens to mouse over a title.) Help topics and a help search will be added under help to further enlighten the user. Additionally, some buttons will have mouseovers or [?] icons that will offer further information about the features.

Annotating a Dublin Core Record

6. Add the following note to the Sam Nunn record in your bookbag: "They discussed the Alaskan pipeline."

AmericanSouth.org absolutely needs to offer a good explanation of what annotating is. Annotation is an elaboration to a record contributed by an eyewitness of the actual item. When a user makes an annotation, the Dublin Core record is altered for the benefit of any who may subsequently view the record on the AmericanSouth site, but the record in the catalog of the host institution is not changed in any way. Many users seemed to equate the annotation of a record with providing comments on a weblink or article. Users who understood the distinction were usually impressed. Some users assumed that their annotation of a record would only be visible through their personal account. That the annotations are public will have to be made abundantly clear, so that scholarly users who may wish to keep their notes private do not inadvertently broadcast them.

Because the purpose of annotations is not clear, and because archivists have generally looked unfavorably on the prospect of the records being amended by the public, there was some debate as to whether the feature ought to be retained at all. It would make an excellent pedagogical tool, in that students conducting research for a paper could leave information that would assist other students. On the other hand, can undergraduate students be trusted to amend the record, and who would supervise them? It would be a great boon to researchers to have additional information on sometimes sparse records, since it could save them considerable time and expense in dealing with distant resources. Yet, many scholars will decline to annotate a record, either because they will not spare the time, or because they wish to keep their sources obscure until they publish their findings. In any case, AmericanSouth.org records contain links to online finding aids and record descriptions, and those that do not could in future, if the archivists are willing to write descriptions of the collections. Finally, it was decided that even if the feature will not be used very often, it is important to retain it because of its potential benefits to scholars.

The actual annotation task yielded mixed results. Over 4/5 of the participants were able to enter an annotation, but only just over a third placed the annotation in the correct element field. Finding the "annotate this item" button was not difficult. However, users typically overlooked the Dublin Core element menu. It was suggested that the users only annotate the description field, or at least that "description" be made the default. An alternate approach would be to add individual "annotate this field" buttons within each Dublin Core field, but this may present too many complications in actual use.

Many participants were confused by the "preview" and "continue" buttons. The suggestion was made that there be a dropdown menu allowing users to preview or post an annotation, but because of the importance of the annotation to a record, it was considered too risky to allow users to simply post without being very sure of the annotation. A solution may be to make all annotations moderated (as opposed to reviewed). If this occurs, the moderator could determine the appropriate Dublin Core field for the annotation.

Alternately, archivists could have special clearance to enter annotations under a specific element, whereas the general public would not. Another problem with previewing was that users expected to see their annotation at the top of the screen, and not have to scroll down. This will be addressed in the redesign of the site.

Viewing an Article in Context

7. Find a literature article on the AmericanSouth.org site. What genre is it about? Who wrote it?

This item could be completed through a search of the site or the articles, by locating the abstract of the article on the homepage, or by choosing the "article topics" button from the main menu. Since the version of the site used for testing had had much material removed from the homepage, the abstract of the article in question was actually in plain view at the top of the homepage. While this made the task easier for some participants, others were confused, because they did not expect the homepage to start out with a literature article, or because when they opened the articles page from the homepage, it did not appear that a change had occurred. The homepage is currently being redesigned, so that this will no longer be an issue.

While several users successfully located the information by searching, others were unsuccessful because they were searching the archives. Additionally, two users browsed the archives, and one scanned the archives box. This indicates that the users were not distinguishing between articles (original content written for AmericanSouth.org) and the archives (Dublin Core records with links to web pages of their source institutions). An additional hint that the users were unsure of what constitutes an article is that a few mistook the abstract of the article for the article itself. Indeed, users were able to answer the questions by finding the abstract rather than the article, and the proctors routinely considered the task completed when the article had not actually been located, thereby reinforcing the confusion. The Central Project Staff will recommend to the Scholarly Design Team that abstracts be shorter in order to distinguish them more clearly as merely brief descriptions of the articles.

Some participants seemed to be having trouble with the question itself. Users well versed in Southern Literature tended to search with the most well known authors in mind. Several users scanned the abstract for the genre, but not understanding Local Color as a genre, they overlooked it, sometimes focusing instead on the word "fiction." The proctors accepted such responses. These difficulties contributed in some cases to the longer completion times, and should be taken into account.

Adding Commentary About an Article

8. Add the following commentary to the literature article: "This genre has influenced Toni Morrison's work."

It became immediately apparent that the users equated the annotation process with the process of commenting on an article. Therefore, they expected the same process and semantics when fulfilling this task. The revised site will have added instructions throughout that will make such confusion less likely. This will be very important, too, as it

will enable the MetaScholar staff to indicate to the user what type of user participation is desired.

In discussing the results of this question, the Central Project Staff began to rethink just what type of user participation *is* desired vis-à-vis the articles. It appears more important to elicit discussion on the topic of an article than on the article itself.   In order to facilitate the formation of a virtual community, the staff will propose a new approach to the Scholarly Design Team. Rather than individual comments on the articles, there should be a threaded discussion, spurred by the article, or perhaps by questions posed by the article's author. Rather than labeling it a "comment," the term "roundtable" would be employed. If this were to happen, the users' input would have to sustain only a minimal level of moderation and perhaps only supervision. If the author of the article were to supervise the discussion it solicits, s/he could interject or change the direction of the conversation. The Technical Design Team will investigate the possibility of setting up such an arrangement, perhaps using Beliefnet™ as a model. The users' confusions about having to preview their comment, having to scroll down to see it, and not being sure about how to enter it will be addressed in the design of the roundtable interface.

Finding Weblinks

9.   Find a link from the AmericanSouth.org site to a website about farming in Colonial Williamsburg. What is its url (website address)?

The user could find the solution to this task either by searching the site or weblinks or by choosing the weblink topic "agriculture" and selecting the Colonial Williamsburg site. The word "farming" in the question was meant to assist users who took the second route, but it proved troublesome. A search on "farming" would not yield the desired result. Furthermore, users who scanned the abstract of the Colonial Williamsburg site were hesitate to click on the link, because the abstract said nothing about farming, and indeed, it was not immediately clear why that site was categorized under "agriculture."

The MetaScholar Project Manager has determined that there are too many categories for the organization of weblinks and articles, and this problem will be discussed with the Scholarly Design Team. However, reducing the number of categories will necessitate the duplication of some links, which is not currently possible in the Post Nuke system design. The programmers will see whether there is anything that can be done about this problem. Additionally, the MetaScholar team is hoping to begin work on a tool, MetaCombine, which would enable more efficient and thorough searching of weblinks.

One technical issue that repeatedly arose was that once the user clicked on the link, the window of the Colonial Williamsburg site opened reduced, so that the user was not aware anything had happened. The programmers will make adjustments to ensure that links always open in an enlarged window. Once the user did succeed in opening the window, s/he was usually impressed by the visual and audio richness of that site. More than one contrasted that sort of engaging, popular site with text-heavy, unembellished AmericanSouth.org.   Improvements to the look of the site are currently underway, and work is being done to incorporate graphic and sound media.

Adding Commentary About a Weblink

> *10. Return to AmericanSouth.org and give your feedback about the Colonial Williamsburg site. Say, "It has great pictures!"*

When the Central Project Staff revisited the question of whether the users ought to be able to rate weblinks, it was decided that they should. The link comments allow the user to invest in the online community. Moreover, since major commercial sites allow subjective user input, it has become expected. However, a change in semantics will be necessary so that users may more easily distinguish recommending a link (i.e. suggesting a valuable weblink to the AmericanSouth.org moderator) and rating a site (i.e. giving an opinion about a site already linked to AmericanSouth.org).

As with the other tasks requiring user input, there was an expectation on the part of the users that they would follow a single process. In this case, they were surprised not to see the "ok" and "preview" buttons they had encountered when annotating a record and commenting on an article. They also failed to recognize the "rate this site" button as a button. More importantly, most either failed to spot the pulldown for the numerical rating. In PostNuke, the numerical rating, and not the verbal comment, is essential. As it stands, the box for the commentary is far too prominent in relation to the numerical rating. Thus, the programmers will redesign the page so that the numerical ranking is given prominence.

Some users spotted the pulldown, but chose not to assign a numerical rating, either because they had not been specifically instructed to do so, or because they do not like having to arbitrarily choose a number. Currently, it is not quite clear what the numbers are meant to signify. In future the numbers will be in answer to an explicit question, such as "How useful do you find this link?"

Interpretation of the Survey Data and Recommendations

Section One

The question about how proficient the participants judged themselves concerning the internet yielded interesting results at both ends. There were quite a few users who gave themselves a five. These tended to be librarians and technologists, and the results of their tests often reflected a familiarity with web interfaces. It was perfectly obvious to them that problems in navigating the site amounted to flaws in the site or test design. On the other end of the scale, two users assigned themselves a one, although no one was unfamiliar with how to navigate through a website. For these two, their harsh judgement indicated a self-consciousness about their difficulties with technology. The overwhelming majority of participants regularly use the internet in the course of their professional duties. This means that even those who did not feel comfortable with their computer abilities are experienced with website use and understand its importance in an academic setting.

The numbers were more disappointing when it came to AmericanSouth.org itself. While the majority agreed that the site is easy to use, enough of them did not, so that the overall reaction was fairly lukewarm. Additionally, the staff noticed that a few users who struggled through the test gave AmericanSout.org generous marks. Because the proctor and/or

recorder was nearby while the surveys were being taken, and because the participants' names were written on them, some volunteers may have given more positive responses than they would have done, had they been assured of anonymity. Slightly more users responded that they would be likely to use AmericanSouth.org after its launch date. Of course, those who said that they would not had no professional interest in Southern Studies. Specialists in Southern history and culture and those who voiced a strong personal interest in the subject tended to respond that they were likely to use the site in the future. The users generally were told during the test that significant improvements would be made to the site before launch, and so the results of this question also reflected the users' ability to envision what the site may become.

Section Two

The second session was far less personal, since it asked about the usefulness of the various site features *for researchers*. The archives, articles, and weblinks were all given very high marks. When contrasted with the above responses, it appears that the users were saying that these features are useful in concept, even if the site itself is difficult to negotiate. They further seemed to indicate that even if they personally had no interest in the site or Southern Studies, they viewed the site as valuable to someone in that field or in a discipline that relies on archival work.[9] Of the three features, the articles received the lowest ranking. This may reflect a reticence to accept the authority of scholarly work on even juried sites. However, given the wide scope of the South, the paucity of articles at present does not make them a promising resource. Several participants voiced that a great many more articles would be necessary. The Scholarly Design Team has already recognized this problem, and its five members are all working on additional articles for the site. Furthermore, the team is crafting a call for submissions in an effort to increase the amount of content and the scholarly profile of the website. The partnership of AmericanSouth.org with the Encyclopedia of Southern Culture will also bring access to hundreds of scholarly articles, thereby drastically increasing content.

The ability to annotate Dublin Core records was viewed overall as valuable, but less so than the other features. As mentioned above, this feature relies on the idea that researchers will be altruistic enough to share information and trustworthy enough to do so carefully. Nonetheless, a few users were very enthusiastic about this capability. As noted above, there is a lack of clarity about the role of the archives on the site and archival practices and jargon in general. It could be that once the role of the archives and the annotation process are better defined, this feature will be valued more highly.

Comments

There were several positive comments that directly mirrored negative feedback. In short, the experiences of users varied considerably. Bearing in mind the possibility that some volunteers produced suspiciously generous surveys, the positive comments, which in many cases are vague, can only be taken with a grain of salt. Nonetheless, they highlight the fact that not all users have difficulties with the current interfaces, and it will be impossible to accommodate all research styles.

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[9] A researcher in Southern Literature might be less likely to use archival resources than, say, a historian. Two of the professors involved in the testing study literature and tend to rely on printed, published materials in their work.

Still, the staff is taking especial interest in the more concrete criticisms, because they will aid us in accommodating various levels of technical ability. The top two criticisms – that more content is needed and that the site should be more engaging – were no surprise to the MetaScholar team, which had already begun work on addressing these very issues. The most useful message to come out of the survey and study is that there must be explanatory text throughout the entire site. This will reduce confusions about the site organization and the terms used. Confusion will also be addressed to some degree by the research guides currently being developed by the Scholarly Desigh Team. In addition, there should be an explanation of archival terminology and practices, either as a link, or preferably as a section on the site. To assess how greatly archival experience factors into usability of AmericanSouth.org, participants in future usability studies should be surveyed as to whether they have used special collections or institutional archives in their work a great deal. Changes in site semantics should also result in greater clarity.

Conclusion

AmericanSouth.org has great potential to become a well-used and respected scholarly web portal. At present, however, the user is presented with numerous difficulties that stem from a lack of clarity. The value of AmericanSouth.org is that it brings together three important types of resources: archival records, original articles, and weblinks. Unfortunately, by including so much, the categories become muddled to the user, who does not have a clear idea of how these three areas are distinct. Add to that the fact that many users will be unfamiliar with Special Collections cataloguing, and the chances of their becoming frustrated or confused are multiplied. There is no patience on the internet. Therefore, in order for AmericanSouth.org to truly succeed, the site will require much more clarity. Additionally, a more visually interesting site will draw the user in, increasing the chance that s/he will invest the time in understanding how the various parts of the site work.

Finally, it has always been a goal of the MetaScholar Initiative that AmericanSouth.org become the authoritative site on Southern Studies. Such a goal depends on two factors. First, the content of the site must be wide-ranging, well researched, and well-presented. As detailed above, the Scholarly Design Team is currently addressing this goal. Secondly, the site must have a high profile in scholarly circles. Improvements to the site must be made keeping pedagogical possibilities in mind, as classroom use could quickly increase its exposure. Moreover, the ability to interact meaningfully with the site could result in the development of a profitable online community of professional scholars and even life-long learners. However, such interaction entails risks in terms of quality control, and it would require a certain amount of supervision. This usability study has demonstrated that direction will also be necessary, but that members of a potential AmericanSouth.org community are standing by and willing to explore what the portal has to offer.

Appendix

AmericanSouth.org Usability Study
Recorder Comment Form

Proctor: _____   **User:** _____

Recorder : _____   **Date:** _____

1. Login to AmericanSouth.org with the user name **test_user** and the password **test**.

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

2.a. Find an archival record in University of North Carolina, Chapel Hill's Southern Homefront collection about a catechism to be taught orally.

2.b. Add the record to your bookbag.

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

3.a. Browse the Sam Nunn Collection. How many records are there in total? Who does Senator Nunn interview in the third record?

3.b. Add the record to your bookbag.

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

     Describe issues/problems:

4. View the records in your bookbag.

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

5. Follow the link to the text of the digitized online version of the catechism record found in your bookbag. Then return to your bookbag.

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

   Describe issues/problems:

6. Add the following note to the Sam Nunn record in your bookbag: "They discussed the Alaskan pipeline."

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

7. Find a literature article on the AmericanSouth.org site. What genre is it about? Who wrote it?

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

8. Add the following commentary to the literature article: "This genre has influenced Toni Morrison's work."

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

9. Find a link from the AmericanSouth.org site to a **website** about Colonial Williamsburg. What is its url (website address)?

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems:

10. Return to AmericanSouth.org and give your feedback about the Colonial Williamsburg site. Say, "It has great pictures!"

_____

Indicate what the tester did
Browsing (indicate path)

Used the search tool: ----------yes   ----------no
Search words used:

Did the tester find the answer?   ----------yes   ----------no

Describe issues/problems: