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Executive Summary

Historical newspapers are a state treasure, the historian's and genealogist's best friend, and the community's collective memory. In the world of newspapers, today's news is already history, from the moment their stories are printed. The National Digital Newspaper Library exists to provide access to the news and history of several states including Florida.

Chronicling America is a project developed as part of the National Digital Newspaper Program (NDNP), a partnership between the National Endowment for the Humanities (NEH) and the Library of Congress. It is a long-term initiative consisting of the development of two separate resources. The first is a national newspaper directory, covering papers published from 1690 to the present, which assists researchers in finding detailed information about the papers as well as locations where they are held. The information in this directory was created through an earlier NEH initiative, the United States Newspaper Program (USNP). The second resource entails the digitization of a select group of historically significant newspapers from throughout the United States, along with the development of a database that provides full text searching capability of the digitized pages. This database will eventually include a substantial number of newspapers published between 1836 and 1992 and encompass all fifty states as well as U.S. territories. The digitization project is expected to take approximately 20 years to complete.

The first phase of newspaper digitization was undertaken by the Library of Congress and the six institutions who received the initial NDNP grants in 2005. These institutions were the University of California, Riverside; University of Florida (UF) Libraries, Gainesville; University of Kentucky Libraries, Lexington; New York Public Library, New York City; University of Utah, Salt Lake City; and Library of Virginia, Richmond. The newspapers digitized in this first phase, which was completed in 2007, included public domain newspapers published between 1900 and 1910 in California, Florida, Kentucky, New York, Utah, Virginia, and the District of Columbia. Initial usability testing of the beta version of the *Chronicling America* Web interface was undertaken by Library of Congress staff members prior to its introduction to the public. However significant changes were made to it during the interim period, resulting in fairly substantial differences in the final product. As a result, this report provides the first usability testing and analysis done on that version of the interface, which allows researchers to search and view newspaper pages from 1897 to 1910 and find information about American newspapers published between 1690 to present.

As a contributor to the National Digital Newspaper Library project, the UF Assessment Team included the evaluation of *Chronicling America* to the testing planned for the local database developed, the University of Florida Digital Collection (UFDC). The major goal of the UF project was to examine information discovery and retrieval using both the UFDC interface for the Florida Digital Newspaper Library (FDNL) as well as the Library of Congress' *Chronicling America* interface. The investigation of this resource examined how effectively the site and search interfaces match user expectations and needs. In addition, it assessed how well the design of the digital library allows for ease of use by researchers who have encountered it.

To evaluate *Chronicling America*, the UF Assessment Team developed and administered usability testing to a group of university participants. The testing examined ease of use, navigability and learnability. Key areas of concern were identified prior to testing:

- Are the search pages—*View* and *Find*—and navigation throughout the resource intuitive?
- Can users readily understand what the resource can do for them? How easy is it to understand and use the available search features to locate materials?
- Do the result pages provide the type of information a participant needs? Do users retrieve the anticipated results?
- Does the site offer features and functions appropriate to ensure easy navigation and ease of use?

The testing resulted in feedback with in the following overall findings:

- *Chronicling America* is a tremendously useful, generally intuitive resource
- *Chronicling America* offers too much explanatory text on the homepage
- Distinguishing between the search options can be difficult
- Exact title search and selection of specific newspapers from the search pages interface are preferred

The following report will provide a summary of findings, including:

- User difficulties and frustrations with the resource
- Significant usability findings (may include positive as well as negative findings) and recommendations

Methodology

Prior to the submission of the Institutional Review Board Protocol (IRB) to begin testing, the Assessment Team members reviewed and considered:

- Other newspaper resources available, both commercial and similar digital initiatives
- Reference questions received by UF Reference staff over the years requiring the use of newspaper collections. (Appendix A. Supplemental Information)
- Previous usability testing of the UFDC, the template for the FDNL interface

Based on the review of other newspaper databases and digital libraries and previous testing by the Assessment Team Leader of newspaper resources, the Team avoided questions that addressed certain user expectations of granular search criteria (article title name, article author, newspaper section). The reference questions reviewed indicated that users often need to discover newspaper holdings and specific event information based on location and date; the questions developed for testing focused on this type of user need. A final protocol was accepted by the UF IRB prior to testing. (Appendix B. Official University of Florida IRB Informed Consent)

What happened during the usability test

The evaluation of the UFDC was conducted at the University of Florida in Gainesville, Florida. The research methodology involved resource testing to evaluate online participant search behavior. Two sets of test questions were used. All participants were given both sets of questions. One set considered the University of Florida's FDNL interface while the other set focused on *Chronicling America*.

Participants of the usability testing completed pre- and post- test questionnaires that were used to determine experience using online library resources and their satisfaction with using the resource. Participants completed a test session consisting of structured exercises using the *Chronicling America* search interfaces; result pages and item viewer. During the individual test sessions, participants spoke out loud about their process to complete each question and what they expected would happen; responses were written down by the librarian.

Who we tested

The individual usability testing took place between February 29 and April 9, 2008.

The eleven participants of the usability testing were recruited prior to testing. Participants were selected from three categories of academic users who represented the subject areas the librarian felt would be interested in the newspaper content tested.

Faculty participants were recruited by email to personal contacts of subject specialists in Mass Communications and Education. Graduate and undergraduate participants were frequent library users who responded to an open invitation by assessment team members. The participants reported the following profile characteristics:

Academic Status

Faculty	2
Graduate Student	4
Undergraduate Student	5
TOTAL	**11**

Area of Academic Interest

Natural Sciences	2
Social Sciences	5
Arts and Humanities	3
Law	1
TOTAL	**11**

Self-reported Web Skills

Searching skill levels are all self-reported values gathered from pre-test questionnaires.

No online search experience	0
Novice user	2
Proficient user	5
Highly experienced user	4
Expert	0

Most participants indicated that reasons for using particular resources include the ease of navigation, familiarity, speed of retrieved results and appropriateness of content covered in the resource.

Resources Used to Locate Newspaper Information

Google	9
Another WWW search engine	3
Library Database like Factiva or LexisNexis	10
Special online newspaper collections (specified as Proquest National Newspapers)	2
Microfilm at the library	3

Important features of online resources

Ability to search specific fields	10
Use of Boolean operators	5
Use of truncation and wildcards	3
Help screens	5
Simple navigation of resource	9
Consistent navigation	9
Ability to retrieve a variety of formats (e.g. images, PDF, text)	10
Saving items to a basket	6
Other	1

Where we tested

In most cases, individual testing and observation was conducted in the University of Florida Education Library, Journalism Library or in the faculty member's office. The following is a general summary of the participants' computing environment:

URL of tested website:	[http://www.loc.gov/chroniclingamerica/]
Computer platforms:	[Dell Pentium IV with an 17" display]
Browser tested:	[Mozilla Firefox]
Screen resolution:	[1024 X 768]
Operating system:	[Windows XP]
Connection speed:	[Shared T1]

What data we collected

The assessment team members collected data that would address the major elements of the FDNL including overall navigation and ease of use; searching features; result pages; and the item viewer. Other features not yet implemented were also addressed.

Initial Resource Impressions

At the beginning of each individual scenario-based test session, we allowed the participants to preview the resource. We asked participants the following four questions:

- What are your initial impressions of this resource?
- What did you like about this resource?
- What did you dislike about this resource?
- What type of information would you expect to find on this site?

Based on searching *Chronicling America* during this initial perusal phase, the general impression users had is that it is a graphically attractive, well organized resource. However, five participants indicated that the text on the page was excessive and that they would not read it. They revealed that they would only spend a short time scanning and exploring the text to find out what it contains and would abandon the resource if their needs are not readily met.

The overall assumption regarding content is that the database would cover older, historical newspapers and serve as a newspaper archive providing images of state newspapers.

When asked who would use this resource, participants noted that content is appropriate for researchers and historians; some UF faculty and graduate students; and outside researchers.

What are your initial impressions of this resource?
- Thought the resource was organized, aesthetically pleasing and professional
- Liked the possibility of using the historical content, accessing materials only found in physical archives on microfiche or microfilm
- Believed that homepage provided a long description of what the resource will provide

What did you like about this resource?
- Consistent site navigation links in upper left hand available throughout site
- Breadcrumbs for determining where the researcher is in the site
- Bolded and colorful sections to indicate two search features, though the search boxes were too low on the page
- Ability to search by location or by date/date range
- Fast page load time
- Result page list provides individually matched images
- Scroll bar to navigate between pages of results
- Several output options readily available
- Ability to browse all pages, issues and newspaper information from each individual page
- Grab and move feature on page images
- Highlighted text

What did you dislike about this resource?
- Too much text to read on introductory page
- Having to click to enter into a search page (View or Find)
- Labels on result pages not descriptive like other databases that give specific article titles

- Inability to search by section, subject heading or specific author or title
- Some images are sometimes too dark
- Text view enables users to cut and paste, but only sometimes does the text seem to be correctly interpreted
- Not able to select specific newspapers by state listing to search full text

What type of information would you expect to find on this site?

Common answers included:
- Specific newspaper articles based on search
- Full text to many older newspapers
- Newspaper information—basic bibliographic and holdings information
- Illustration and advertisements
- Editorial cartoons

Tasks and Test Review

During the usability evaluation, participants were asked to complete a number of tasks using the resource. The questions were presented in order on index cards. The following questions were asked of all participants to ensure they explored most features of the resource. The issues are addressed in this section and again in the Findings and Recommendations section of this document.

#	Scenario-Based Tasks	Issue Addressed
1	How many distinct newspaper titles are in the database?	General Searching
2	How many distinct Florida newspaper titles are included in the database?	General Searching
3	How many results are found for newspapers from Washington DC in 1903 with Miami in the text? How many times did the term appear within the first record you select?	Result list/Item Viewer
4	How many libraries hold the Colored American?	Search Newspaper Directory
5	How can you find out more about the newspaper the Colored American? Which libraries hold the newspaper?	Search Newspaper Directory
6	Find the Gainesville Independent: preceding title, publication place, publication location, frequency, and language	Search Newspaper Directory

Overall Navigation and Ease of Use/Intuitiveness

Participants were generally successful in navigating through the database's search interfaces, result pages and item viewer. All users reported a satisfactory experience with navigation and ease of use of the resource. This is not surprising since the left navigation is always available within the site and nine participants already expressed that consistent navigation is an important feature of any resource they might use. All participants used or referred to the left navigation pane to find out more information about *Chronicling America* as well as to navigate to specific search interfaces in their searching.

One prominent feature desired is that hitting the enter button on the keyboard would run the search query, as opposed to having to manually click on the *Search* button. Further, some problems with Reset occurred; in 3 cases, the terms remained in the search even after hitting the button.

Searching

No search box is immediately displayed on the page. The participants had to read text on the homepage to help guide them to the appropriate search interface; only 27% (3) seemed to stop to read the text and make a decision while the others cursorily glanced at the text. Most participants (81%, 9) selected the first search box and seemed select it because it was first interface link as opposed to selecting it because it is the most appropriate link to choose. Two participants used the left navigation links to begin most searching while the remaining participants used either the *View* and *Find* links at the bottom of the page. Once in a search interface, however, participants were usually successful in finding the results needed.

Terminology. One of the biggest problems with searching was remembering which interface they were searching. 27% of users raised the problem, suggesting that the breadcrumbs did not use the same terminology as on the homepage. For example, the *View Newspapers Pages* (text in the box on the homepage) search is the same as the *Search Pages* (serves as the text for the "GO" button) and *Search Newspaper Pages* in the left view and on the actual search page. The *Find Information about Newspapers from 1690 to Today* uses the *Search Directory* as the GO button and *Search Newspaper Directory* on the left navigation and the search page. Using the same terminology for the search pages in each of these would eliminate problems with recalling or simply discovering where the user is in the site.

See All Available Newspapers. Participants could not find an easy way to access all titles that are held in the database in both full text and in record form. The *See All Available Newspapers* link in the left navigation was considered one way to search for titles. Although the text for the page reads, "These historic newspapers are available to read online in *Chronicling America* at the Library of Congress" the four participants who selected this link thought they should be able to find all newspapers in this list and be able to sort by state. Further three participants expressed out loud that not being able to find a particular title was "annoying."

View. Almost all participants used this search interface at least initially to answer questions (10, 91%). Participants indicated at first glance that the search interface is robust because it provides several options for searching, such as date range and search by keywords. However, once the participants looked at the specific search limiters they wondered "why are there only these dates and these papers or state?" In addition, the two means to select a newspaper (by state and by newspaper title) was confusing and not useful to 54% (6) of participants. Based on the problems users had with this section, it appears that participants had assumptions including:

- By selecting a state, newspapers for that state should appear on the right
- All newspapers in database should appear on this list

Assessment Team members attribute the first issue to users not reading the red bolded text. The second assumption by users is likely because they did not read the description of the search page they were entering.

Find. Participants tended to like the variety of search options until trying to track down a specific title. From the homepage, 63% (7) participants used the A to Z list for finding specific newspapers by title. However, those who did not use the A to Z list entered into the interface and expected to be able to search by specific newspaper title, which is not available.

Although there are two methods to find newspaper by title, participants complained about not going directly to that title; they often had to use either the scroll or the different sort options to locate a specific title. Neither method seemed to offer efficient known item lookup to 81% of participants. Some participants, after seeing that they needed to scroll to locate the title they need, checked to see if the paper they sought was in the Search Newspaper Pages interface of the site.

Other issues. While individual limiters were welcome search options, 27% (3) users thought that LCCN should be removed or be more intuitive.

Results List

All results retrieved were set to the default list display view. All participants thought this view was appropriate for quick perusal of the results. Further, being able to select the number of results displayed on the page itself was an added value feature. However, 36% (4) participants wondered why the list was not numbered; while they thought the orange bullet was attractive on the page, this made determining number of results on the page more difficult for them.

54% (6) noticed that Relevance was the sort option by default and tried sort options (i.e. state, date or relevance). To be able to select the sort was important to the participants who used the option. However, most participants used the sort by title or state because these made the most sense to them; the relevance option was not helpful to some. As one participant put it, "all you get is a the newspaper name and year, with an image number. What does that mean?"

Five participants of the usability testing commented on the slide/scroll bar for jumping to pages of results. They thought this feature was especially useful because of the large number of pages to navigate to. They also thought that the hyperlinked numbered pages above the scroll bar were useful.

Number of Results. Most participants were able to identify the number of matched items because of the line, "Your fulltext search for **[bolded search term]** retrieved [number retrieved] results." However, while the bolded term was useful, the line itself was blended into the page because the light gray color of the text sometimes went unnoticed.

Item Viewer

Once participants entered into a specific item, they were impressed and excited that the full text content or image is available to them.

Finding Holding and Newspaper Information. Finding information about a newspaper that includes the full citation information was usually easy for participants (63% 7) who entered into the Search Newspaper Directory list; the terminology used (About this Newspaper) was appropriate and intuitive to the participants. Further, once in a newspaper information screen, the record provided links to the *Libraries that Have it* and *MARC Record*. Locating newspaper information for 36% (4) participants was a more involved process. From the *Search Newspaper Pages* results, participants who located a newspaper they needed information on selected the link for the newspaper and then a link at the top of the page, "This Paper."

Zoom and Highlight Features. All participants thought that the zoom features available are intuitive and useful. 100% thought that the grab and drag greatly enhanced their experience with using this newspaper collection. The highlight features were also positively mentioned; participants indicated this quick identification of important sections was exceptional. 54% (6) expressed that they prefer to see the specific articles only, as they would in other newspaper databases. They said that because *Chronicling America* cannot offer specific article titles, this feature is necessary to help them wade though the resource. Of the 6 who commented, 2 indicated that if highlighting and direct entry to a page with the text were not available, they might not use this site.

Output features. Although this was not tested, several participants thought that the output features were impressive, including the ability to download in particular. Three participants reviewed the Text of the full image and discovered that the incorrect characters and garbled view of the page made this feature less attractive to use.

Post Test Reactions

At the end of each session, we asked participants to complete a post-test questionnaire. The questions were useful in gauging how easy the resource was to learn and to use. Overall navigation, ease of use, intuitiveness, Usefulness of Resource/Satisfaction, and results were considered.

When asked what parts of *Chronicling America* should be improved, at least 50% suggested the following:

- Enable searching by an individual title
- Make total results retrieved information stand out more
- Use consistent terminology for naming search pages (*View* or *Find*)
- Add a single or general search box for quick searching on the homepage
- Allow selection of state on View pages to pull up the titles by that state

Participants were also asked to provide any additional information or comments not addressed in the post-test sessions.

- Participants were impressed that the resources were full content
- One participant stressed that the two interfaces should be combined

The major findings of the test sessions and focus group are indicated in the Findings and Recommendation section of this report.

Findings & Recommendations

These findings and recommendations provide information from the testing and pre-/ post-test questionnaires. While participants thought it was overall easy to understand and user-friendly, the site requires some modification to increase ease of use. The following are specific issues and recommendations.

Finding [#1]: Homepage for *Chronicling America* too involved

Comments/Supporting Evidence	Recommendations
• Participants do not read text and make assumptions about content availability • Participants did not immediately understand the differences in type and range of resources included in either the Find or the View	• Reduce the text on the homepage to only include information about the actual content and the major intent for use. • Link any additional information in the FAQ or About *Chronicling America* link, including how pages are ranked by relevancy

Finding [#2]: Multiple search interface options not immediately available or clear. Left Navigation on all pages of site is useful; some items need to be reconsidered.

Comments/Supporting Evidence	Recommendations
• Too many possible names for each Search section—View: Search Pages, Search Newspaper Pages and Find: Search Directory, Search Newspaper Directory • Deciding which search to use was often arbitrarily selected • Recalling which search option is currently being used can be done by breadcrumbs and major heading on the result page, but the words View and Find found on the homepage are not used • Determining which and how many newspapers are available for each state (both full text and bibliographic record only) is cumbersome • Quick access to search boxes from the homepage would make this site more efficient for return users	• Ensure search interface links on the homepage are closer to the top of the page to prevent user from having to scroll • Ensure consistent use of terminology for the two different search pages on the site—all *View* searches change to Search Newspaper Pages and all *Find* change to Search Newspaper Directory • Change See All Available Newspapers to See All Full Text Newspapers in left navigation box • Provide a link to see all newspapers held in both databases • Show available statistics and titles for newspapers by state • Add a general search box for both search newspaper page and search directory from the homepage • Provide explanatory text at top of each search interface

Finding [#3]: Searches are generally easy to conduct, but some features do not allow quick use of the resource. Known item searching is difficult to conduct using the site.

Comments/Supporting Evidence	Recommendations
• Having to actively select the Search button from the search page is inconvenient and sometimes missed because they select the Reset button instead • Participants used A to Z list to find newspaper by title but were frustrated when they needed to scroll to locate the specific title • Efficient known item searching is not available; users cannot simply submit a newspaper name but have to scroll for it or hope that it is a top relevant item on the result pages • Sometimes information from a previous search stays in the search boxes, even when the Reset button is selected	• Allow search queries to run when the Enter or Return button on keyboard is hit • Move the Reset button further from the Search button • Enable searching by specific title in both the Find and View search pages • Enable list of titles by state to be retrieved • Fix Reset function

Finding [#4]: Search result pages are simple and easy to navigate but some information goes unnoticed or is difficult to interpret.

Comments/Supporting Evidence	Recommendations
• Once a result page is retrieved a sentence shows the search terms and the number of items returned. The bolded text of the term is appropriate but the number does not stand out; this sentence tends to be unnoticed. • The results list display and order can be changed depending on user preference. The number of results displayed on the page can be changed. Because of this, users thought it could be helpful to show the number the item is in the list of results instead of using the bullet system.	• Bold number of results retrieved on result pages or change color • Change orange carrot to a number on result page

Finding [#5]: The item viewer is clear and intuitive. Some output options need to be reconsidered.

Comments/Supporting Evidence	Recommendations
• The item viewer is easy to navigate. Zoom and image navigation features worked well. • Output options such as Text was not quite as effective because characters were not being recognized correctly	• Clean up OCR or remove the option

Appendix A. Supplemental Information, Questions received from email reference questions, not attributed.

- o   i got his death certificate that said he was accidentally killed by a train on may 27,1918. and it says sumner county, fl. but that might be sumnter county. the precinct was Rosewood if that helps you any.
- o   I'm hoping to get a copy of a newspaper obituary for someone who died in 1982 and lived in Chipley, Florida. I phoned the office of the Washington County News newspaper in Chipley and they told me that they do not have any archives of the old newspaper
- o   The obituary is for Raymond Uzak (original name Uszczak) who died June 5, 1982 in or near Chipley, Washington County, Florida. He was 67 years old and was survived by his wife Betty.
- o   I understand that the Univ. of Florida library may be in possession of microfilm of the Florida Advocate Newspaper prior to 1930. The Florida Advocate was a weekly newspaper of Wauchula Fl from 1900 to about 1950. I'm working on a history project and am trying to find what resources are available. Thanks
- o   Can you research the University paper or the city paper to see if there is a mention of Neil Diamond performing at the University on May 11, 1968. We have had that date, but have no confirmation of the show there. In yesterday's Gainesville paper, there was an article about the 100th anniversary of the high school there. Where are the newspaper resources located now? (Fl Times Union, Miami Herald, Tampa Tribune, St.Pete Times)

Informed Consent

Purpose of Research Study:
The purpose of this study is to examine information discovery and retrieval using the Florida Digital Newspaper Library and Chronicling America: Historic American Newspapers Databases.

What you will be asked to do in the study:
You will be asked to complete a short questionnaire to provide general information about your experience using the Libraries web pages. You will then be asked to complete various tasks using the University of Florida Digital Newspaper Library and the Library of Congress' Chronicling America: Historic American Newspapers database. An investigator will take notes on your actions. After this session the investigators will ask you to complete a post test questionnaire where you will be asked provide feedback about your experience.

Time Required:
Completion of the pre-test and post test questionnaires should take less than 5 minutes. The test session will take about 45 minutes to complete.

Risks and Benefits:
No risk is anticipated for the participant in the study. Potential benefit may include changes to the library home page to enable ease of use for all users.

Compensation:
No monetary compensation will be paid for participation in the study. Refreshments may be provided.

Confidentiality:
Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. When the study is complete and the captured data is analyzed, the coded data will be destroyed. You will not need to state your name in any part of the testing. Your name will not be used in any reporting of the testing.

Voluntary Participation:
Your participation in this study is completely voluntary. There is not penalty for not participating.

Whom to contact if you have questions about the study:
Marilyn N. Ochoa, Assistant University Librarian, P.O. Box 117016, (352) 273-2627

Whom to contact about your rights as a research participant in this study:
UFIRB Office, P.O. Box 112250, University of Florida, (352) 392-0433

Agreement:
I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date:_____

Principal Investigator: Marilyn N. Ochoa _____ Date:_____