User Directed Scrapbook Digitization

Shannon Willis and Marcia McIntosh
University of North Texas
Digital Library Federation Forum 2018
Overview

- Background
- Past Research
- Study Design
- Analysis (and other things of note)
- Conclusions
- Summary
Background
The Portal to Texas History

Search 1,104,403 items from 398 partners across Texas

Sample Searches: *National Park* *Orange Leader* *Texas Register* *Texas Jewish Post* *Dallas Daily Herald*

A gateway to rare, historical, and primary source materials from or about Texas.
Longer elements that unfold
Overlapping Elements
Booklets that extend
Newspaper clippings that extend beyond the books
Elements attached sideways
Items in Envelopes

15
Newspaper puzzle pieces
Candles
Hair
Flowers
Flags
Negatives
Sugar cube
Our scrapbooks are problematic.
But what do users need?
How to represent the elements?
Internal Standards

HowToScan Scrapbooks

Contents [hide]
1 The Peculiarities of Scrapbooks
  1.1 About
  1.2 Scanners to Use
  1.3 Standards
    1.3.1 In Brief
    1.3.2 Resolution
    1.3.3 Deskewing/Cropping
    1.3.4 Numbering
  1.4 Order of Things
    1.4.1 Loose Items
    1.4.2 Letters in envelopes attached to the page
    1.4.3 Foldouts
    1.4.4 Overlapping Items
    1.4.5 Booklets attached to the page
    1.4.6 Negatives
    1.4.7 Envelopes with Photos
  1.5 Special Cases and FAQs
  1.6 Additional Notes
  1.7 Related Pages
We did not agree.
Instead of basing our practices on what we individually think is best, let’s base it on empirical data and what our users tell us they want.
Past Research
In 2016, surveyed scrapbooks in DPLA
Found both trends and a lot of variation

McIntosh, Marcia & Willis, Shannon. Professional Opinion vs. User Directed Digitization, Round 1, presentation, April 20, 2017; (digital.library.unt.edu/ark:/67531/metadc987476/: accessed October 8, 2018), University of North Texas Libraries, Digital Library, digital.library.unt.edu; crediting UNT Libraries Digital Projects Unit.
Study Design
Users build own design from paper

“It enables users to be proactive producers and, therefore, key contributors to the design process. Paper prototyping allows users to fully express their conceptualizations and, thus, reveal their mental models of a proposed design.”


Added some modifications
Our Version of Paper Prototyping
Method of a Session

The pieces of each participant-session in the study
Before starting

- Consent form
- Recording Devices
  - Audio
  - Video
  - Notetaking
- Script
Introduction to The Portal of Texas History

- Standard books
- Thumbnail view
- Standard view
- Zoom view
- Full-text searchable
Scrapbook Tour
The Tasks
Task 1: Card & Envelope

Task 2: Loose Item

Task 1: Fold Out
Task 1: Envelope

Task 2: Loose Item

Task 3: Fold out

Participant Board Pictures
participant ID: 

Paper: "Reading of herbs by the herbalist from the Texas History Survey"

1. Prior to this study, have you ever seen or used any herbal medicines in your daily life? 
   a. Yes 
   b. No

2. In this study, have you ever used or learned about the herbal medicines in this paper? 
   a. Yes 
   b. No

3. Prior to this study, have you ever seen, used, or handled physical samples of any of the herbs or medicines in this paper? 
   a. Yes 
   b. No
Recruiting Participants

How to get people to volunteer
Help us improve the way we digitize scrapbooks!

The Digital Libraries Division of the UNT Libraries is conducting a research study on scrapbooks in The Portal to Texas History at Willis Library on UNT Campus. If you are 18 years of age or older, you can help us improve the way we digitize scrapbooks by participating in a research study examining how patrons prefer scrapbooks to be digitized and represented online. Participants will engage in a paper prototyping exercise that will last no longer than one hour. Those who complete a study session will receive a Portal to Texas History t-shirt (valued at $10) in appreciation of their participation. If you are interested in participating, please email Shannon Willis at Shannon.Willis@unt.edu.
Analysis
Data from the Sessions

- Images and spreadsheet of final results
- Session notes
- Audio recordings of session
- Video recordings of session
- Surveys
Task One – 14 Sample Images
## Task 1 Data

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*Participant picked 2 views that she felt could be interchangeable*
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1 - with an arrow pointing down
2 - remove snippet of other article

2: with indicators to let viewers know it is an extension of page C24
# Most Popular Images 7

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<td>3. Previous to this study, have you viewed, used, handled, or created scrapbooks in any other setting (e.g. at home, at school, etc.)?</td>
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The majority of the 7 self-selected participants used, or had experience with, scrapbooks in a digital or analog environment.
Conclusions
On the page or off?
The problem of logistics and practicality
Which ones?
Do users want or need this image?
The choice
To provide a cropped image of the foldout, or not to provide a cropped image of the foldout?
Summary
Establishing Scrapbook standards on user needs
Reviewing Digitization Methods in DPLA
Paper Prototyping Study
  - Envelopes
  - Loose Items
  - Fold Outs
Study shows:
  - A possible change to current loose items imaging
  - More data is desired
Future Efforts: Phase 3

- More data on current round
- Phase 3:
  - Clarify and verify conclusions
  - Non-location based testing = Going Digital!
Special Thanks to:
- UNT Libraries
- Ana Krahmer, PhD
- Beta testers
- Our study participants

Scrapbooks Pictured in this Presentation:
- Texas Wesleyan University
- Women’s Wednesday Club
- Beth-El/Fort Worth Jewish Archives
- Fort Worth Museum of Science and History
- Dallas Municipal Archives
Thank you!
User Directed Scrapbook Digitization  
DLF Presentation Script:  
Tuesday October 16, 2018 11:50 - 12:45

Slide 1:  
I am Shannon Willis.  
And I am Marcia McIntosh.  
And we are from the University of North Texas and we will be talking about a user study we did to improve the way we digitize and represent scrapbooks online.

Slide 2:  
This is an overview of what our presentation will cover.

Slide 3:  
**Background**  
So to provide some context about where we are coming from and the development of our study.

Slide 4:  
We work in the Digital Projects Lab at the University of North Texas. We digitizes cultural heritage materials from within the library, from other departments at our university, and from external institutions to create The Portal to Texas History, a digital repository of cultural heritage materials related to Texas History that is freely available online. We have over 400 partners across the state of Texas who have contributed materials, and last year we added our **millionth** item to The Portal.

Slide 5:  
Over the last few years, we have seen an increase in the number requests and acceptance of individual scrapbook objects and scrapbook collections for digitization by the Digital Projects Unit. These are not modern scrapbooks or simple photo albums. These are incredibly complex beasts with a multitude of added elements of different media types that overlap and move.

Slide 6:  
They have elements that unfold. Sometimes they are as simple as a card.

Slide 7:  
Sometimes they are a bit more larger than a simple card

Slide 8:  
They have elements that overlap and must be moved to reveal all information on the
They have loose items stuck in between the pages.

Tiny booklets attached to the page that flip open

Booklets that extend beyond the page edge.

Newspaper clippings that extend beyond the page

Small packets of paper that are attached to the page and must be lifted to reveal pages behind it

Elements that are attached sideways

Envelopes that flip open with contents inside

And many, many more oddities. We have found scrapbooks shreds of newspaper clippings that can be puzzle pieced together if you are so industrious. I have seen scrapbooks with candles, hair, ribbons, flags, negatives, and something I believe to have been a sugar cube that was rapidly deteriorating. And each page of a scrapbook often has a number of these elements on them, not just one.

In short--our scrapbooks are problematic. Just from an imaging standpoint, they present many challenges for how to safely capture all elements on a page. And it takes many, many images to capture it all. Currently, it takes us on average 7.5 tiffs to capture a single page. Our worse scrapbook thus far took an average of 13.4 tiffs to capture each of its pages. It had a mere 36 pages in it, but it took 483 image files to fully capture it.

But beyond the imaging challenge these scrapbooks present, what do users need?
Since each page, and sometimes a single element on a page, can take multiple images in order to fully represent it, what images do our users want and in what order should they appear in order to make the most sense to them? And since a single scrapbook can take many, many images to fully capture, it is important that we are including what actually help our users make sense of these scrapbooks when they are looking at them online.

Slide 19
So that brings us to the problem that these complex elements could be displayed in multiple ways. For instance, when an element is loose, does it need to be shown on top of one of the pages it falls in between, or not? Showing it on the page adds another image file to the object, increasing its size. But does it provide necessary context for our users?

Slide 20
Now, yes, we do have internal standards and procedures on how to deal with each of these peculiar elements so that they would appear consistently across our collections.

Slide 21
But to put it simply, we did not always agree on what images ought to be included and in what order they should fall. So we decided that instead of basing our practices on what we individually as librarians think would be best, we would try to base our practices on empirical data and what our users need and prefer. While continuing to digitize materials based on our internal standards, we sought to answer the question of what images users want and need in order to make sense of a complex scrapbook in a digital environment.

Slide 22
Past Research

Slide 23
Before we began our user study, we did a survey of 69 scrapbooks in the DPLA to analyze how other institutions were digitizing and presenting their scrapbooks online. We looked at 8 scrapbooks aspects (targets, borders, foldouts and envelopes, loose items, cropping and zooming, blank pages, orientation, and structure) While we did find many trends for representing certain elements of a scrapbook (for instance, most institutions surveyed did not rotate scrapbook pages even when elements were affixed to the page sideways, and most institutions do not photograph loose items on top of a page), we also saw a lot of variation. Almost any method imaginable, some institution is doing it. This research reinforced the need to do a user specific study.
The design of our study was based on the ideas of paper prototyping. Paper prototyping is a technique that allows participants to build their ideal design for a product using paper. It is commonly used in software development and usability testing. It’s cheap, and it allows participants a great deal of freedom in designing their ideal product. As Still and Morris put it, “It enables users to be proactive producers and, therefore key contributors to the design process. Paper prototyping allows users to fully express their conceptualizations and, thus, reveal their mental models of a proposed design.” For the purposes of our study, given that it was not meant to test a user interface or a piece of software, we modified the process a bit to better fit our needs.

First, using an old scrapbook from the 1940s, and old clippings, photographs, and other materials we could source that looked like they might belong in a 1940s scrapbook, we made a sample scrapbook. Each page had a dynamic feature the we wanted participant to try to convey digitally. We chose to make a sample scrapbook, rather than use a real scrapbook from a collection, 1. For preservation purposes. We didn’t necessarily want lots of participants to repeatedly handle the same page of a real scrapbook. Having a sample gave the participants the opportunity to physically handle the object. And 2. This allowed us more control over the elements the scrapbook would include. It allowed us to create simple control pages that had only a single unique element to them, and only the unique elements we wanted to test.

We then scanned those pages in every variation we could think of, and had those images printed off on 8.5x11 cardstock. We put alphanumeric codes on the back of each image to better facilitate future data analysis.

So for our paper prototyping inspired study, instead of giving them just plain blank paper to work with, for each task, they had sample images from which to choose. We did also provide them with blank paper and drawing materials in case an image they wanted was not present in the sample images. We also supplied them with post-it notes, so that if a sample image was close, but they wanted something altered about it, they could draw or write text on a post-it explaining what needed to be changed and adhere it to the sample image.
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So, each study session went like this...

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First, when a participant would show up for a session that had been previously scheduled, we would first have them read and sign an IRB approved consent form outside of the room. They would then be brought into the room and our recording devices would be turned on. This is what our room looked like for each session. During each of session, we worked from a pre-written script to keep the information given to participants consistent.

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Participants were then given a short intro to The Portal to Texas History. We went over how more standard book like objects appear (such as ledgers and photo albums), how you can view the images as thumbnails, in a standard viewer, and in a zoom viewer, and that all printed text in The Portal is full-text searchable (meaning you can do a keyword search within an item and find pages on which that word appears).

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We then showed the participants a couple of physical scrapbooks which were actual special collection items. We showed them a few key pages in each scrapbook to demonstrate the complexity of the scrapbooks our study was trying to address.

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We then started the tasks for the session. For each task they were shown a page in the sample scrapbook, and then were given a set of sample images from which they could choose. Their task was to select the images they believed would best represent the scrapbook page and put them in the order that would make the most sense to them if they were looking at this scrapbook in the Portal to Texas History. The participants placed their final choices of images on a whiteboard with magnets. They were instructed to choose as many or as few images as they wanted; they did not have to use them all, and they could draw their own images if the ones provided didn’t suffice. We also had them narrate their thoughts as they worked.

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We had each participant perform three tasks with the scrapbook. The first task was to represent a page with an envelope attached and a card inside. The second task was to represent two pages of a scrapbook with a loose item between them. And the third task was to represent a page with a fold-out newspaper clipping.
And these are some of the final results of some of our participants. By just looking at the visual results, you can already start to see that despite a great deal of variation between each participant, there are some images that show up consistently and in a consistent order.

After completing the three tasks, we had the participants fill out a very short (3 question) survey about their experience with scrapbooks previous to the study. And then we gave each participant Portal swag in appreciation for their participation. Each session took between 30 minutes and an hour.

So, how did we get participants...

We advertised through a number of channels including internal library newsletters, external university newsletters, the portal newsletter, and university department list-servs. We also put up flyers around campus and at local library branches. We wanted our participants to be self-selecting as opposed to recruited directly.

In the end, we have had 7 participants (so far) self select to participate. We also had 4 beta testers to verify the efficacy of our study design.

Analysis

From each session we had data on the final results of each of the tasks completed by a participant. During each session, we took photographs of the white boards after the participant had completed the task, and we took photographs after the session of the chosen images to record their alphanumeric codes. This information was then added to a spreadsheet after each session.

We also had session notes, which were helpful in remembering why a participant chose what they did. And, of course, we had audio and video recordings documenting how each participant thought through the process and why they made the decisions they did.

Lastly, we had survey results documenting our participants experience with scrapbooks previous to the session.

We have only included data for the 7 self-selected participants in this analysis.
So for task one, participants were given 14 sample images to choose from.

We recorded the data and created frequency charts.

And these were the images most often selected by participants for inclusion. These were selected by 50% or more of participants.

This second wrung was selected by at least 43% of the participants. So not most, but we will still need to look at them for this particular task.

For task 2, participants had 9 sample images from which to choose.

After recording and analyzing the data...

These were the images most often selected for inclusion.

Participants had 12 sample images from which to choose.

And after recording and creating frequency tables for task 3 data...

These were the images most often selected for inclusion.
Based on the results from the three-questions survey, we learned that the majority of our participants had experience with scrapbooks in the digital and analog environment.

Conclusions
So what conclusions have we drawn from this data..

Well with task 1, there was a preference for displaying the card from inside the envelope on top of the scrapbook page. As opposed to off the page or without the page behind it. 5 out of 7 included images of the card on the page. Obviously, having on image of the card on the scrapbook page itself provides some context. However, logistically, this would be difficult for us to accommodate across all the scrapbooks we digitize. Scrapbook pages are often not this big, there frequently have multiple moving elements on a page, not just one, and we often see envelopes with many items inside them, not just a single card. Imaging contents of envelopes in this manner for many of our scrapbook would be challenging and may put the materials at risk due to excessive handling. So we are not sure we can accommodate this preference at this time, although it is good for us to note in case we ever can accommodate it.

Which leaves us with some questions still about order and desired images, given the limits of what we can accommodate for all our scrapbooks. If we eliminate the possibility of having the card imaged on the page itself, which of these images would participants prefer and in what order do they want them to appear, along with the other images of the page? These images are the card in envelope, the card slightly pulled out of envelope, and the envelope empty. We hope further studies and test will help answer these questions.

With task 2, the question we were hoping would be answered was do users want or need this image when they are trying to make sense of a loose item -- do they need or want to see the loose item on top of the page where it was found before seeing the loose object by itself? There was a slight preference for this image (or some slight variation of it) by the participants, 57%. Of the participants who did not include it, one wanted some functionality added to the viewer to indicate that the scrapbook page had a loose item by it, and one of the participants did want the photograph imaged on top of a scrapbook page, it was just the other side. However, it it interesting to note that of the 4 participants who included this image, 3 of them all wanted the photograph, both front and back, imaged on top of the scrapbook page, similar to the previous task with the
preference for having the card imaged on top of the scrapbook page. Like with the previous task, this may not be logistically possible across all the scrapbooks we do, but we can include images of loose items on top of the page they are found with all our scrapbooks.

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So now it comes down to do users want the A option, which is what we do now, or the B option (or some variation of it). Based on our data so far, we believe that B would be preferred by most users, and we hope that further studies and testing will verify this.

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Task 3 came down to do we include a cropped image of the foldout or not. We have seen other institutions do this, but we do not do this ourselves. There was a slight preference for inclusion, 57%. However, looking more closely at the participants who did include it in their final result, we saw that 2 had wanted cropped images of multiple elements on the page not just the foldout. So the foldout image may not be uniquely important to them. And one of the other participants who included it, included it in lieu of the full page with the clipping folded out. So at this time, we do not have enough persuasive data to include the foldout image. However, we do wonder if we would get different results if the foldout was longer. We believe further study and testing may help solidify our current conclusions.

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**Summary**
So, in summary...

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In order to gain an unbiased standard on scrapbook digitization we decided to ask our users.
We reviewed the digitization methods of other institutions in the DPLA
Created a Paper Prototyping study to explore three aspects of scrapbook digitization
And found that possible changes in our standards for loose item imaging may need to be changed. But that we would like more data before implementing any other changes.

This process has allowed us to better understand user preferences when it comes to the images we provide them for digitized objects. Although it was specific to scrapbooks, we were able to observe how our users interact with images, and many of these observations can be applied to other items. The process itself could also be replicated to test a whole host of other image questions we or others might have about less straightforward objects.
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We plan on collecting further data for this round of testing, and then conducting a
another round of testing to further clarify our conclusions, which will be Phase 3 of this
study. We hope to conduct the next round online, rather than in person, allowing more
users to participate than those that could make it to the UNT campus.

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All the scrapbook images shown in this presentation came from these partners, who we
wanted to thank for partnering with the University of North Texas and allowing us to
digitize their wonderfully complicated scrapbooks, making them available for
researchers worldwide and allowing us to preserve valuable pieces of Texas history.

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Thank you.