Usability Test Report

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Introduction:

The Keweenaw Time Traveler is a web application seeks to bring the local and global Keweenaw Community closer together through sharing stories about the area. These stories offer unique insight into the area's history and are used to create a large data base of cultural and geographical history.

Currently, after clicking a button at the bottom of the screen, a pop up appears giving a brief description of how you will upload and add your story. You can then click to begin filling out the form that allows you to add your story. The form allows users to upload a written story and media attachment and then connect that story to a point on a map. For this test, the Team 3 explorers provided 3 new button designs to be compared to the original "Add your story" button. The Team 3 Explorers have also provided 3 new designs for the form section used to add a story to the website. The user then navigates through a sequence of pop ups, each page asking for a different piece of input via text box entry or media upload. There is an option at the bottom of each page to navigate to the previous page. Finally, the user arrives at a review page before being able to submit. The new design differs from the design currently featured on the website in that the user is now able to upload video media -rather than a pdf or other image format- and the form is now a series of pop-ups rather than one page. Color scheme, format, and language are all very similar to the original. Two different versions of the new form were provided, the difference being the order of the questions. The developers also provided a one-page form, similar to the original, that now had video upload capabilities. This was used for the base line in comparison to the other two forms.

Test Plans

Pre- Participation Information Form:

Participants will be asked to provide the following demographic information after being reminded that it is completely voluntary (the Google form used will be linked to in the final report):

1. Please provide your gender identity:

2. Please provide your ethnicity:

3. Please provide your age:

4. Have you ever heard of the Keweenaw Time Traveler Website or Application before participating in this study?

5. Have you ever used the Keweenaw Time Traveler Website or Application before participating in this study?

Scenario One: *Button Preference*

Test Goals:

1. To understand what button placement is preferred and most noticeable
2. To understand what button style is preferred and most noticeable
3. To understand if the new button designs are better than the previous button design

Scenario Description:

Each participant will be read the following:

Today you will be trying out new designs for a Web Application called the Keweenaw Time Traveler. This Web application seeks to bring the local and global Keweenaw Community closer together through sharing stories about the area. These stories offer unique insight into the area's history and are used to create a large data base of cultural and geographical history.

In this first activity you will be shown several different screens and asked to find the button that would allow you to begin to submit a story to the website. Please alert me that you have found the button by saying "found it" and pointing to the button on the screen.

Test Set Up Details:

All testing will take place in Meese 203. Participants will be asked to sit down at the computer. Each of 5 button versions will be brought on screen separately by the researcher, then turned over to the participant to search. The researcher will ask all questionnaire questions aloud and record answers on their own machine using Google Forms.

Task list:

1. Observe display
2. Point and verbally alert researcher to button location
3. Respond to questionnaire

Quantitative Measurements:

1. Participants will be timed from the point the display is brought up until they alert us they have found the button.
2. We will record whether or not the correct button was 'found'
3. The questionnaire will ask which button display was the participants favorite and least favorite

Qualitative Measurements:

1. One of the undergraduate students will record any verbal frustrations while searching
2. The questionnaire will ask why they selected the button displays as their favorite and least favorite.

Scenario Two: *Form Preferences*

Test Goals:

1. Understanding which format users prefer
2. Understanding whether or not language use is clear to the user

Scenario Description:

Each participant will be reminded that they are still using the application described in the first scenario. They will then be read the following script:

>*Now imagine that you are ready to post your first story to the Keweenaw Time Traveler. You will be asked to post your story using 3 different forms. Please talk aloud as much as possible while filling out the forms, a short questionnaire will follow.*

Test Set Up Details:

All testing will take place in Meese 203. Participants will be asked to sit down at the computer. Each of 3 form versions will be brought up on screen separately by the researcher, then turned over to the participant to fill out. The researcher will ask all questionnaire questions aloud and record answers on their own machine using Google Forms.

Task list:

1. Fill out form version 1
    a. Talk aloud while filling out form
    b. Respond to questionnaire
2. Repeat set one with other two form versions
    a. Respond to questionnaire

Quantitative Measurements:

Quantitative measurements will come from the ratings given on the questionnaire. After completing each form version, users will be asked:

1. How easy was this form for you to use on a scale of 1-7 with 1 being very easy to use and 7 being very hard to use?
2. How much did you struggle while filling out this form on a scale of 1-7 with 1 being "I did not struggle at all" and 7 being "I had a lot of trouble figuring out how to use this form"
3. How understandable was the use of language on this form? On a scale of 1-7 with 1 being "I did not understand the language usage on this form at all" and 7 being "I completely understood the language used on this form".
4. How well were you able to understand what this form was asking you to do on a scale of 1-7 with 1 being "I did not understand what this form asked of me at all" and 7 being "I completely understood what this form asked of me".

Finally, after each form has been completed the participant will be asked to select which form was their favorite and which was their least favorite.

Qualitative Measurements:

Quantitative measurements will come both from the questionnaire and observing the participant's behavior.

1. One of the undergrad students present will be asked to record and keep track of thoughts the participant verbalized after being asked to speak their thoughts aloud.
2. Any repetitive behavior or 'struggle points' will also be noted by this undergrad.

The questionnaire will also include open ended questions to allow for qualitative feedback. After each form version participants will be asked to "Please provide comments as to why you selected the ratings you did". After all three forms are complete and a favorite and least favorite form versions have been chosen participants will be asked to "Please explain why the form you chose was your favorite version" and to "Please explain why the form you chose as your least favorite was your least favorite".

Bug Report Form:

The undergraduate student recording observations will also be asked to fill out the following Bug Report form, should the participant come across a bug in the programming.

Bug #	Bug Name	Bug Uniqueness	Bug Location	Bug Description
1				
2				
3				
4				
5				
6				

Results

All participants were students at Michigan Tech and self-identified as males. One participant was 18, three were 19, one was 20, and one was 26. None of the participants had heard of or used Keweenaw Time Traveler before.

Figures 1-4 show a comparison of ratings given for each form version. Version 1 refers to the carousel design with the date first. Version 2 refers to the carousel design with the title first, and Version 3 refers to the full form on one page.
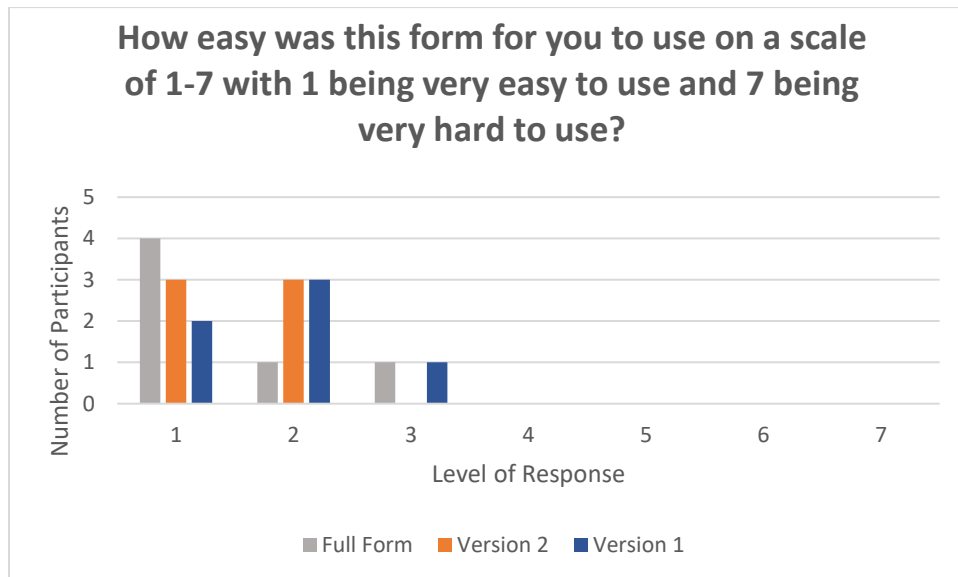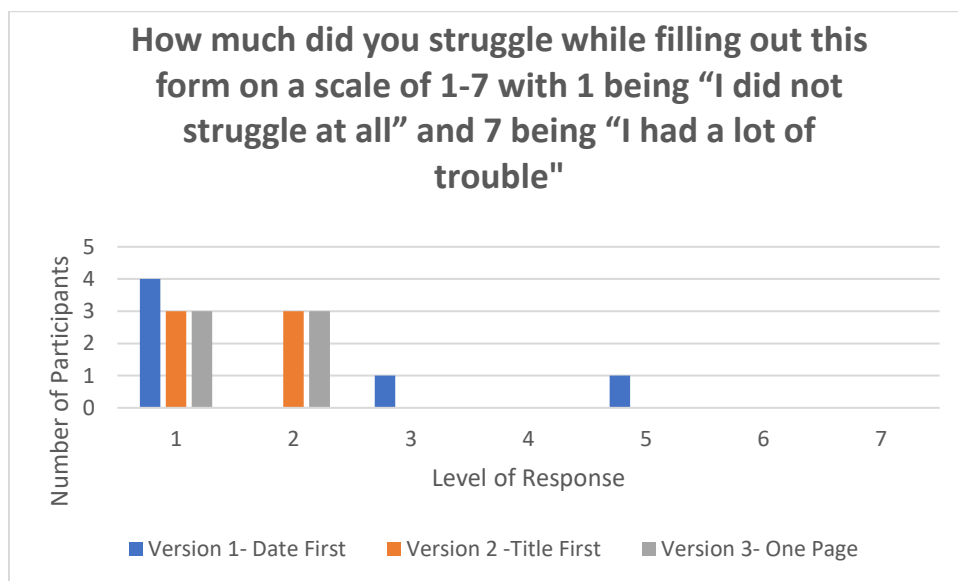

Figure 1: Ease of Use Graphical Comparison
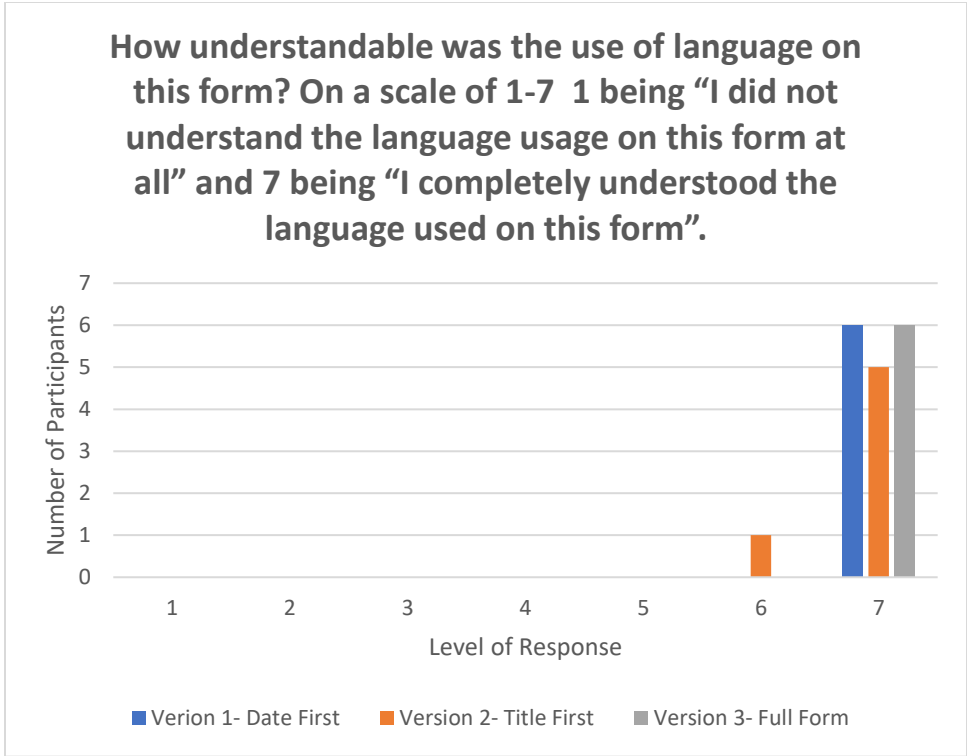

Figure 2: Struggle During Use Graphical Comparison

How understandable was the use of language on this form? On a scale of 1-7 1 being "I did not understand the language usage on this form at all" and 7 being "I completely understood the language used on this form".

Figure 3: Language Use Graphical Comparison

How well were you able to understand what this form was asking you to do on a scale of 1-7 with 1 being "I did not understand what this form asked of me at all" and 7 being "I completely understood what this form asked of me".
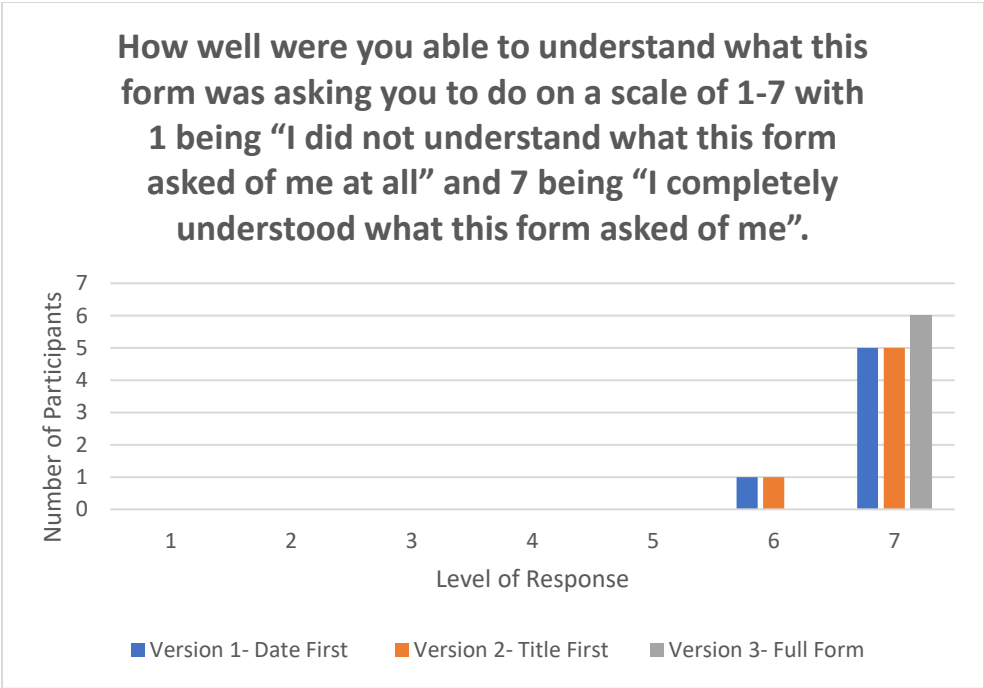
Figure 4: Understanding of Instructions Graphical Comparison

Figures 5 and 6 below compare favorite form and button design to their least favorite counterparts.
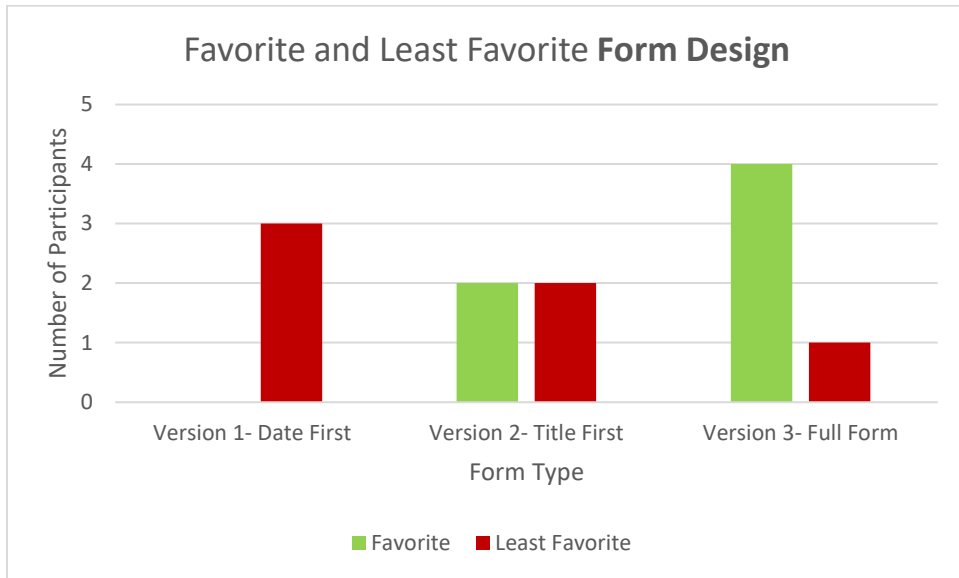

Figure 5: Favorite and Least Favorite Form Comparison

Note that no one voted form version 1 as their favorite, and it got half the votes for least favorite.
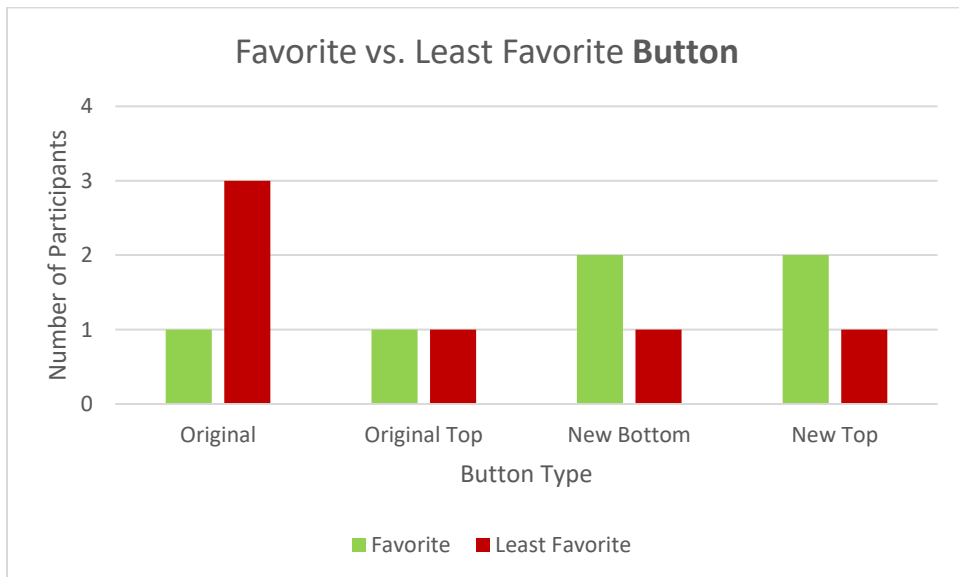

Figure 6: Favorite and Least Favorite Button Comparison

Note that the original button received half the votes for least favorite button. Note that the new button design received two thirds of the favorite button vote when both positioning options are combined.

Reaction times were also recorded in relation to how fast participants were able to locate the button. In general, participants showed evidence of learning as they were introduced to additional versions of the button design and their scores became faster with each trial, even though the buttons shown were different. As we only had 6 participants, there was not enough data to be able to draw conclusions using various orders of button introduction and reaction time. Thus, I have omitted reaction time data from this report.

However, it should be noted that when asked to find the "Share your Story" button, on two occasions participants located the incorrect button. One participant referred to the side bar on the left and said that was used to share their story when the actual button they should have found was the original design in the upper position. Another participant located the blue "Explore the Map" button in the upper right corner and said that button could be used to share their story when they should have located the new button design in the lower position. Specifics on button design and position can be found in Appendix D.

Conclusions

Since there were only six participants, I feel that more testing would need to be done before any strong conclusions can be pulled from the data. Preliminary results above can only suggest areas of further interest that could be studied further.

That being said, most participants rated language use as easy to understand. There had been a concern that switching between the words "story" and "point" may confuse participants. Since this study was done with a population ranging 18-26, I would recommend this be revisited with an older population, but it may not affect younger users.

Some users did struggle to use the form. They gave lower ease of use ratings based on bugs such as when they hit enter and the form disappeared, and they returned to the map screen. Users expected to hit enter and move to the next questions. Users who preferred Version 2 over Version 1 of the carousel said that the flow of questions made more sense to them, they liked starting with a title. Users also noted they like the feature of being able to preview their media upload. If it is decided to use the full form version, I recommend adding the media upload preview feature to this version. Further user observations made by the undergraduate developer team can be found in Appendix C.

The preliminary results suggest the new button design may be preferred. Half of participants rated the old design in the original position as their least favorite and 2/3 of participants rated the new button as their favorite design when combining both positions. I recommend further testing be done to determine which positioning works best for a variety of users. I would also recommend the new button design with a more contrasting color scheme be explored, psychology tells us that contrasting colors help a feature to stand out and grab attention. Based on this principle, though the newer design is preferred it may be most effective in the bottom corner of the map due to the contrast in color the grey provides against the multi colored map. If positioned at the top of the map in the tool bar area, a brighter color may help the button to contrast with the darker grey and black scheme of the tool bar.

Appendix A: *Undergraduate Attendance*

	Monday April 16th				Friday April 20th			
	List Names Below, 1 per box				List Names Below, 1 per box			
				9:00 AM	Riley Mulford	Jeremy Barker		
				10:00 AM	~~Gary Spikberg***~~	~~Riley Mulford***~~	~~Josh Fosdick***~~	****This Test slot was combined with the 11am due to participant error- undergraduates were excused
				11:00 AM	Gary Spikberg	Josh Fosdick		
6:00 PM	Nic Fosdick	Josh Fosdick	Tony Powell	12:00 PM	Gary Spikberg	Josh Fosdick		
7:00 PM	Nic Fosdick	Jeremy Barker	Tony Powell					
	Absences are Highlighted in Green. No highlighting means they were present.							

Appendix B: *Completed Bug Report Form*

Bug #	Bug Name	Bug Uniqueness	Bug Location	Bug Description
1	Unable to submit	5	Form 1	The submit button has been disabled for testing. Database not yet setup for submissions. This confuses the testers.
2	Unable to submit	5	Form 2	The submit button has been disabled for testing. Database not yet setup for submissions. This confuses the testers.
3	Unable to submit	5	Form 3	The submit button has been disabled for testing. Database not yet setup for submissions. This confuses the testers.
4	Enter pressed		Form 1	Pressed enter on form which closed the form, after entering year in text field
5	Enter pressed	2	Form 2	Pressed enter on form which closed the form, after entering year in text field
6	Unable to submit	1	Form 3	The submit button has been disabled for testing. Database not yet setup for submissions. This confuses the testers.
7	trouble clicking point		form 3	

Appendix C: *Undergraduate Test Notes*

Tester #1 - Monday 6pm

Buttons
- Liked new button top most but thought old button top caught attention best

Date first
- Quick understanding of file system
- Can't submit
- Said he didn't struggle but did in trying to submit, understood where the button was but the button wouldn't work

Title first
- Quick understanding again
- Can't submit on this form either
- Tries changing fields to submit again
- Didn't notice a difference between the two orderings of the carousel forms

Full form
- Very easily goes through the form, understands all parts
- Can't submit again, but understands that part of the testing now
- Likes this one more, since everything is all there together and he has a complete understanding of what goes into this form and can easily see what he wrote before

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Tester #2 - Monday 7pm

Buttons
- Found new designed button on map after several seconds
- Found new designed button on top quicker than the previous
- Found old button on map fairly quickly too
- The quickest to find seemed to be the old design on the top
- Like contrasting colors of old design against black bar on top
- Button was easy to find on top
- Least favorite was the black designed button on map

Date first
- Thought this form was easier than the Title first form in his rating
- Understood language and thought form was easy to use

Title first
- Pressed enter on form which closed the form
- Navigation of carousel seemed easy but not very intuitive since enter closed the form rather than going to the next page
- Stated he didn't struggle and understood the language
- Liked going through the slides rather than seeing it all at once on the full form
- Thought enter would go to next page
- Liked order of this one more than the date first

Full form
- Filled out form easily
- He said he felt limited on how much he could type
- He said the language was easy to understand
- The dates were confusing because they listed the year ranges before the standard date format (MM/DD/YYYY)
- Least favorite, "aggressive" by making him type everything at once

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Tester #3 - Friday 9am

Buttons
- Found each share button very quickly
- Finding bottom button took a few seconds longer
- Favorite was the original design (psychedelic bottom button)
  - Easy to notice and it's on the map
- Least favorite is the top button with extra spacing
  - Mixed in with top elements; hard to notice

Date first
- Starting typing and clicking through immediately. Seemingly intuitive.
- The questions seemed out of order.
  - Didn't like the flow on this form.
  - Confusing to fill out.
- Submit failed.
- Said this was his least favorite.
  - Because the flow of questions was bad.

Title first
- Starting typing and clicking through immediate. Seemingly intuitive.
- Though the language and navigability was very understandable.
- Like the attachments page more because of the preview.
- Submit failed.
- Stated that this was his favorite form.

Full form
- Started typing right away; no confusion. Seemingly intuitive.
- Navigated with clicks between each element
- Chose to upload a file after filing out all other information
- Submit failed

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Tester #4 - Friday 11am

Buttons
- Looked at submit feedback button first before finding overly large button, thought it was a popup and ignored it. Exclamation point made it seem more like a popup. This was his least favorite design.
- Found lower multicolored button fast, no other comments.
- Found lower share story button fast as well, no other comments
- Found top share story button fast, no comments
- Liked lower plain share story button better. Good position and simple design, does not look like a popup.

Date first
- Navigating quickly, paused initially at the date field
- Continued navigating quickly over all forms

Title first
- Moved through form pretty quickly after learning from error with hitting enter
- Made a noise at preview slide for files liked this part

Full form
- Immediately filled in information,
- Seemed a little confused at the date format
- Date is not autofilled

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Tester #5 - Friday 11:20pm

Buttons
- Was confused and did not know what he was looking for, found it when reminded (simple top button)
- Found top large multicolored button very fast
- Found incorrect button to share stories, confused by its movement (lower simple button)
- Still confused by buttons being on the bottom, thought it was odd for buttons to be on the bottom. (large multicolored)
- Still confused by scrollbar and lack of logo on previous ones
- Liked simpler button in the lower portion of map. Still confused about the logo.
- Least favorite was the large multicolored button at the top.

Date first
- Concerned about not having a story,
- Navigated intuitively
- Content was hard for them to fill in, paused for over a minute
- Ran into file size limit had to remove an attachment, did that intuitively
- Looked at the map to figure out where he was!
- Noticed he could not submit
- "Like any other form, simple and easy to follow"

Title first
- Navigated intuitively seemed annoyed at having to repeat the process
- Went through form very quickly
- "Standard thing, not very difficult at all to understand or do"
- Least favorite "story should come before title"

Full form
- "This one's probably my favorite"
- Rapidly filled out form
- Liked it the best, easy to understand simple form.
- Efficient use of time, not wasted scrolling through

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Tester #6 - Friday 12pm

Buttons
- Simple bottom: found it relatively quickly, no other comments so far
- Simple top: found it quicker, no other comments
- Drunk bottom: about the same amount of time, no other comments
- Drunk top: found it quickest, no other comments
- Favorite:
    - Simple top, better location
- Least favorite:
    - Multicolored button on bottom, too busy

Date first
- Navigates seemingly intuitively, jumped right in no questions or anything
- "Fairly simple"
- Least favorite, "unsorted"

Title first
- Still navigating intuitively, only adds one attachment
- Got through it quicker than date first form
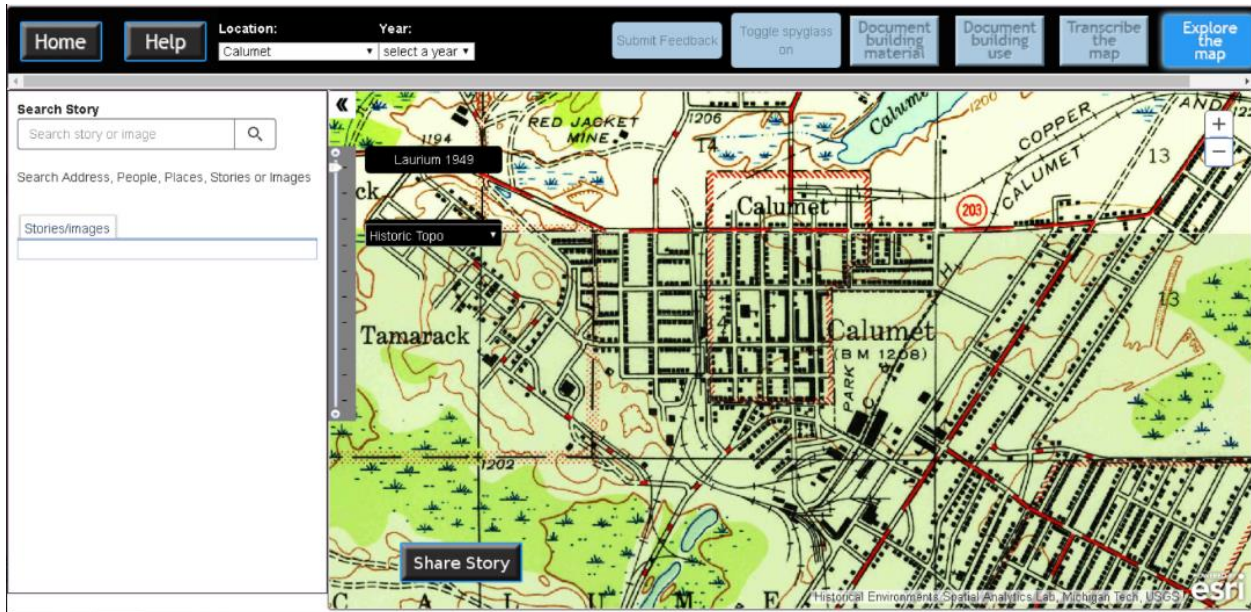- "Easier than the first, it followed a more chronological kind of thing"

Full form
- Uploaded multiple attachments
- Filled out form quickly and efficiently
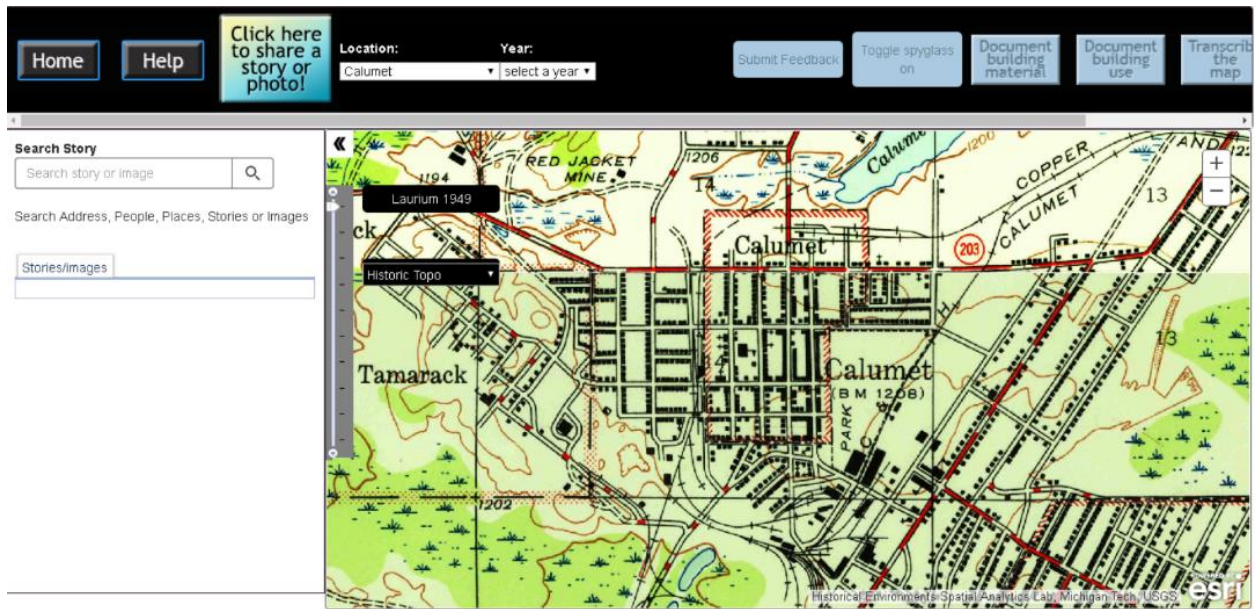- Easiest because he could see all of it, also his favorite

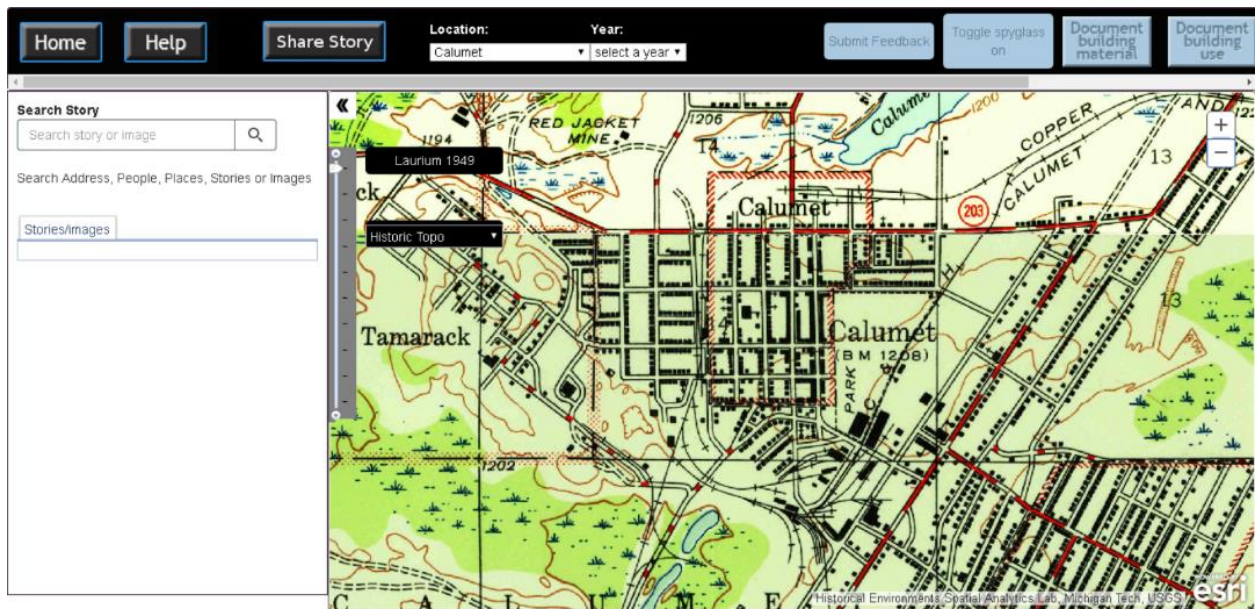## **Appendix D:** *Button Positions Reference Sheet*
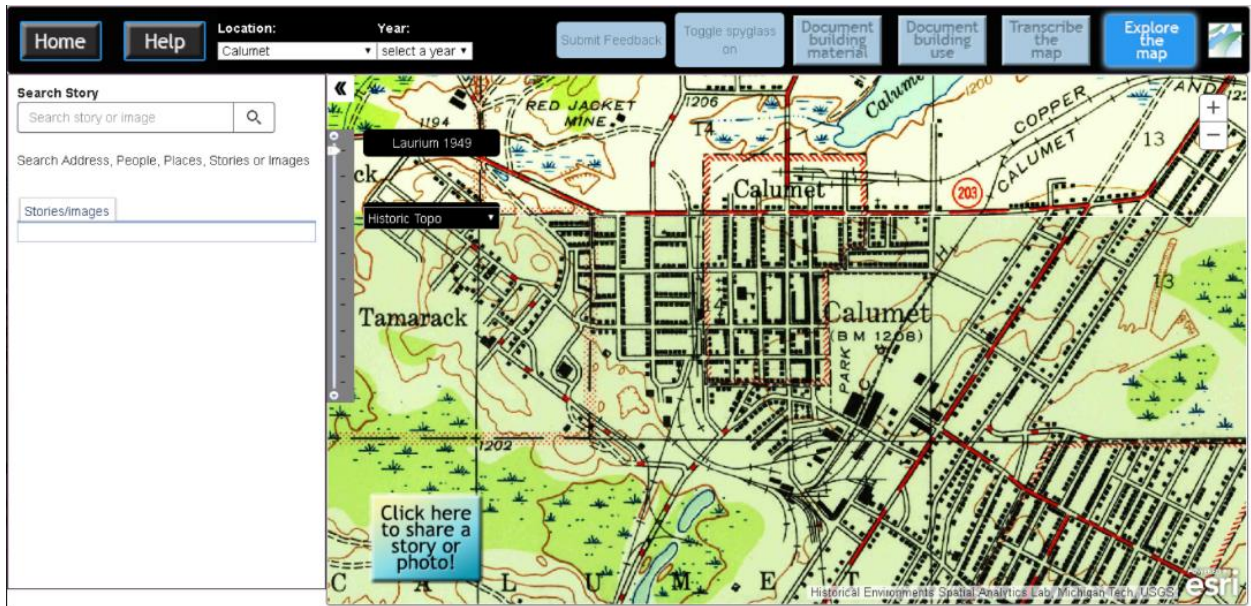
Original Button

New Button- lower position

Original Button- new, upper position

New Button- new, upper position