LESA Usability Report

Foundations of HCI Usability

December 11

Lam Detzler, Joaquin Moeller, Chris Neu, Sean Robie, Erik Saulnier

Table of Contents

Introduction

The goal of this research project is to improve the LESA website so that you are better able to display the most vital information in a way that is both accessible and usable while not being overwhelming for the user.

A usability test is intended to determine the extent an interface facilitates a user's ability to complete routine tasks. Typically the test is conducted with a group of potential users either in a usability lab, remotely (using e-meeting software and telephone connection), or on-site with portable equipment. Users are asked to complete a series of routine tasks. Sessions are recorded and analyzed to identify potential areas for improvement to the website.

Executive Summary

The goal of this usability research study is to determine where the website can be improved and in which ways it should be improved. Our analysis suggested that usability testing should be focused on the LESA homepage and detail pages, with respect to general navigation, content arrangement, and web accessibility. In order to determine current usability issues with the website, we ran a participant research study where we asked participants (volunteers) to look at the website and give us feedback about different pages. We then evaluated the website as a whole with a variety of website accessibility/usability standards set forth by the W3C Consortium. Once we have collected and analyzed the data, we are going to provide our findings and suggestions to you so that you can make changes you feel are appropriate. Our task is to evaluate and formulate improvement suggestions, not alter the website ourselves.

Methodology

Since the purpose of the project is to test the accessibility of the LESA website, it is appropriate

to ensure that we test in accordance with the current W3C Accessibility Guidelines.[1] We have

collected user opinions using a short series of questions in the form of a survey, asking users

what they view as the main functionality of the LESA website. In addition, they were asked more

specific questions about how well the website presents different information, whether there is too

much information on the main page, how easy it is to read the text, how easy it is to use on a

smartphone, if the color contrasts are viewable, and if there are any other overlooked major

issues not addressed in the survey. Other analysis methods include color blindness testing with

the COBLIS website analytic tool, accessibility testing using WAVE, and interactive usability

testing with five participants.

Participants

Participant	Background information
Brian	Student Fr.
Tripp	Student Jr.
Dan	Student Fr.
Raphaela	Professional
Mauricio	Professional

---

[1] Accessibility guidelines can be found here: https://www.w3.org/standards/webdesign/accessibility

Results

Task Completion Success Rate

Task	Brian	Dan	Tripp	Raphaela	Mauricio
Identify owner	5	1	3	1	4
Find agriculture info	3	6	1	3	4
Recent college graduate	2	2	2	2	2
Find lighting info	8	2	2	1	1
Find contact info	6	8	7	3	2
(Post-Test) What is this website about?	2	3	2	1	2

Task Ratings

1-10 scale 1 being found easily and 10 not being found at all. For example, an 8 means the task was completed but with significant time or difficulty.

Errors

A recurring error was participants not being able to find the top right contact links. All five testers encountered an issue where the top navigation menu did not collapse properly when the homepage first loaded. Refreshing or navigating to another tab on the site fixed this, however all testers complained immediately about the size of the menu when it did not collapse. Two testers attempted to use the search functionality of the website and encountered numerous formatting errors. Text sections were laid on top of each other or justified/spaced improperly.

Accessibility Evaluation

After completing several accessibility tests it was found that the LESA website was very accessible, probably due to the fact that they had recently consulted a third party firm which specializes in conforming websites to the most up to date accessibility guidelines of the W3C Consortium. However, even after the upgrade to the website in terms of accessibility there were still several errors which need to be addressed.

The first problem was that not all of the photos on the website had text explanations attached to them which would be problematic for those who are visually impaired. Additionally when the website was put through a monochromatic/achromatopsia visualization engine it was found that words were blending with the color of the background which would be detrimental to

Participant Navigation Experience

Liked Most

"Images in the main menu are nice"

"Video is very helpful"

"The drop-down menu is very helpful"

Liked Least

- "Main menu is too springy/ sudden jump when scrolling down, can be very annoying"

- "Some of the images that change on the main menu appear cheap/ out of place"

- "On the bottom of the About Us page, the profile images for the given contacts seem to be unprofessional due to the differences between photos. -some are taken outdoors and look like selfies-"

- "Way too much text under the main menu."

- "Text is too small, I couldn't read this without my reading glasses."

Participant Recommendations

Four out of five testers suggested having a separate "Contact Us" tab on the top navigation menu - one user commented that it could be added as a dropdown on the "About" page. Two testers suggested the homepage should only show the first sentence of each news article instead of the whole content, in order to declutter the space and reduce the amount of text on the page overall.

Our Recommendations

There are not enough issues to require a 3rd party source to fix the site, but there are a few things from the participant recommendations that should be addressed. First, the contact information should be moved to the homepage next to all the other categories, such as Research and Education. This would land at around a 3.5 out of 5 on the severity spectrum. Although the professionals had no problems with finding out contact info for various LESA members and affiliates, the students seemed to struggle. Adding the contact info into an easy to recognise section on the homepage would make it much easier for undergrads and recent graduates to get involved. The another recommendation is to make the text on the website bigger. I would rate this issue a 2.5 out of 5 on the severity spectrum. It is a simple fix for a problem that many of the testers and survey takers pointed out during their time with us, which would not have any significant drawbacks. Finally, the search results need to be addressed. There wasn't any real consistent formatting on the results page, and because some of the articles were 2 or 3 column formatted on their own page, when put in a results page that is also 2 or 3 column, there would

be some articles that were virtually unreadable. This is a 3 on the severity spectrum, because it can be fixed easily. We suggest making the search results page a list of clickable headlines that jump to the article on a separate page. Having the article display on the results page is an interesting idea, but the lack of formatting and frequent overlapping of text makes this less feasible.

Conclusion

Overall, there were not too many serious issues found with the LESA website. Although there were some minor issues, the fixes are easy enough that no 3rd party is necessary to fix the website.

Appendices

<u>Appendix A</u>: Usability Test Interview Notes

Interview 1:
- Visual inspection
  - Navigates slideshow
  - Homepage scrolls weird - "slow at first and then speeds up"
  - Menu at top is too large
  - "Latest News" is a little bit busy
- Whose website?
  - Based on homepage and title cannot tell
  - URL indicates RPI affiliation
  - Seems like it belongs to the National Science Foundation Engineering Research Center
- About Page
  - Good
- Agricultural Company Role
  - Navigates to industry
  - "Would make more sense to organize the research based on industry"
- Lighting Company Role
  - "I can't really tell what they do"
  - If I wanted a lighting system installed, these aren't the people I'd go to"
- College Grad Role
  - "Education"
    - Gets lost in undergraduate section
  - Unsure where to find a section for post-college or grad
- Contacting people
  - Navigates to "About"
    - "Maybe there's a contact tab?"
  - Finds the contact us
    - "It would be easier if there was a Contact Us or a form fill"
- Can you read the text?
  - Body text is too small and too much content
- Imagery
  - All works well and makes sense
- Calendar is empty
  - "Read more is the same shit - it doesn't explain what the event is"

- Couldn't find Contact Us favicon in the upper right
- "Boring to read that much text"
- Has all the information but is organized weirdly
- Has not seen the website before the test
- Thinks the website is about lighting applications for industry and scientific research about lighting

Interview 2:
- Visual inspection
  - Likes the graphics and colors
  - Latest news/accolades
    - Font gets too small to read well
- Whose website
  - LESA
- About
  - Font is small *again*
  - Not broken up properly - everything is condensed to the left side
- Agricultural Company Role
  - Homepage slideshow slide
  - Navigates to industry -> current members
    - Says he could probably recognize agricultural companies if he knew what to look for
  - Then Research -> Horticulture
- Lighting Company Role
  - Research tab
- College Grad role
  - Education -> college
- How to Contact Us
  - Navigates to About
  - Says he can't find the contact page
  - Eventually finds the contact us section at bottom
  - Says he would expect them to have a separate contact us page
- Images
  - Says they make sense
- Membership page just has a chart, no description of what a membership is
- Has not seen the webpage before
- Doesn't like that all the information is the same size

Interview 3:

- Visual inspection
  - Likes the graphics, slideshow
    - Says some of the slide photos "light enabled communication" look cheap
    - Low quality photographs, dislikes the arrows
    - Other pictures look more professional
  - Info on homepage looks too compressed
    - Should be blurbs that lead to full text
- About
  - Finds everything easily
  - Contact us with mail icons
  - Address at top is good
- Agriculture company role
  - Finds subsection easily
- Lighting company role
  - "Site reads much better for a lighting company"
- College grad role
  - Education -> college -> research experience for undergraduates
- How to Contact
  - Finds the icons in the upper right for emailing them
  - Remembers contact info from the about page and navigates there
- Images
  - Doesn't think the Contact Us images are good - should have consistent BGs
- Unresponsive top banner buttons
- After viewing page, accurately summarizes LESA

Interview 4:

- Visual inspection
  - "Seems like it's a lighting business"
- About
  - Looks at quantifiable outputs section "I don't know what this means"
  - "Our mission is nice and clear"
  - Scrolls down to Contact Us
- Agricultural company role

10

- First impression is that she can't find anything relevant
- Tries going to industry, then finds research -> horticultural
  - Lighting company role
    - Research -> lighting and health
    - Says there's a lot of info there that looks relevant
  - College grad role
    - Education -> college -> experience for undergrad
    - "Doesn't seem that there is much for graduate school"
  - How to Contact
    - Finds the top right contact icons
  - Images
    - Gets confused about some of the slideshow images
  - Clicks on the video on the about page and really enjoys it
    - This should be on the homepage
  - Has not seen this webpage before
  - Has to scroll to read everything she wants to
   - Can't find "a big picture about what the business is offering"

<u>Appendix B</u>: Initial Survey Results

What do you think the main purpose of this site is?

1. To provide information about a group/org researching lighting systems and tech

2. To showcase LESA

3. To provide information about different lighting systems and their scientific applications

4. Information/Full website

5. talk about LESA achievements, news, everything related to it

6. to let other people know about a research center at rpi

7. Something to do with farming and light art

8. Something to do with farming and light art

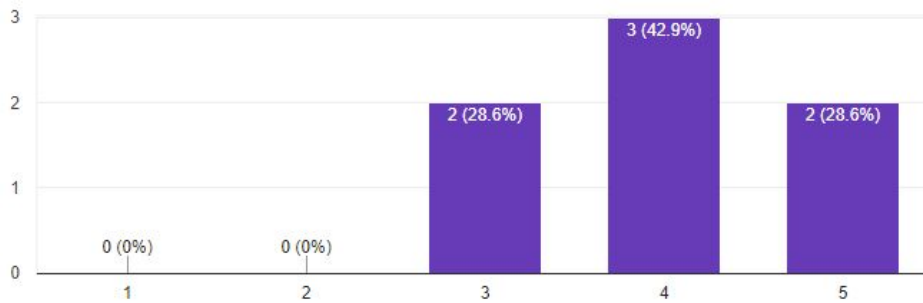On the homepage, do you feel there is (select all that apply):

7 responses
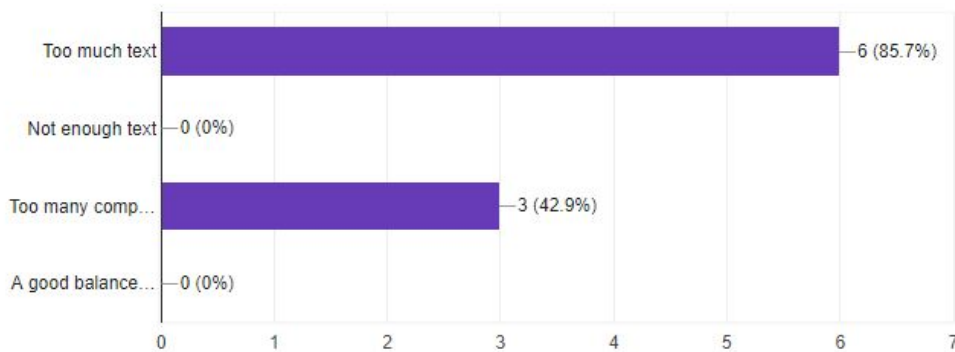
How easy is the website to use on your smartphone? (If on desktop, resize your browser window and try navigating.)
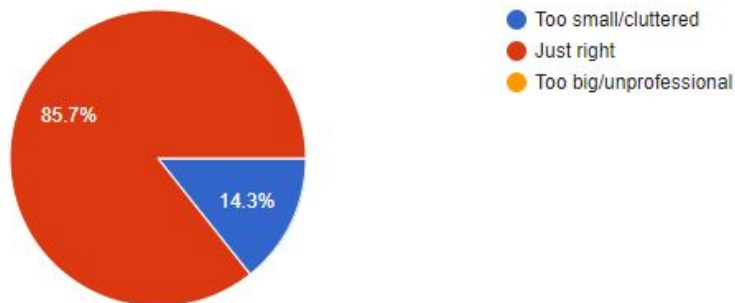
7 responses
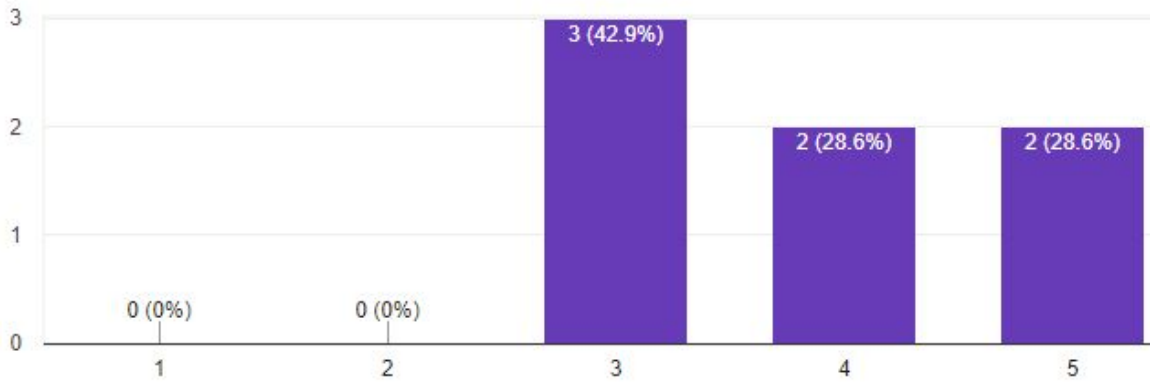
How well does the homepage present its information to you?
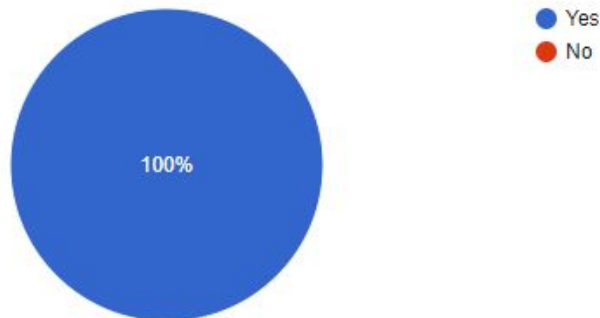
7 responses

How is the text sizing?

7 responses

- ● Too small/cluttered
- ● Just right
- ● Too big/unprofessional

85.7%

14.3%

Are the color contrasts on the page easy to read?

7 responses

Legend:
- Yes
- No

100%

Are there any immediate issues you have with using the website?

1. It's a little weird that you can't click on the slideshow items/headlines at the top to learn more. Also, the lower sections (news, accolades) are too text-dense. These could be collapsed, and show more when hovered over, expanded, or clicked.

2. No

3. Top bar resizing with scrolling is a bit jumpy; one faculty member's photo rotated 90 degrees on mobile on the "Faculty and Staff" page; "+" button in top right opens a menu that has titles (i.e. "Lead Institution") that are unreadable (close to same color as the menu that opens)

4. when scrolling up or down on the home page the website is very jumpy. Also, I don't understand why some pictures are used. that isn't that bad though

5. When on phone, some titles get distorted. (shrink in the x-axis but not in the y)

6. I don't why some of the information is stated. (like regarding dates)

7. N/A

Appendix C: Accessibility Results Summary

LESA footer (normal view)

LESA footer (monochromacy/achromatopsia view)

Appendix D: SEO Report Summary

SEO Report for http://lesa.rpi.edu

51 / 100	27 / 49	18 / 49	4 / 49
SEO SCORE	PASSED CHECKS	FAILED CHECKS	WARNINGS

https://seositecheckup.com/seo-audit/lesa.rpi.edu

<u>Appendix E</u>: Usability Testing Script

Thank you for participating in the LESA website Usability Test. We will be asking you a series of brief questions and giving simple instructions as you navigate a website. It is most beneficial to us if you speak aloud during the test as much as possible, so we can better understand how people interpret the website and its functionality. You can stop at any point in the test if you feel uncomfortable or unwilling to proceed.

---Instruct the user to go to lesa.rpi.edu--

Please explore the homepage visually. Do not click on anything yet. Focus on its layout, content, and graphics.

Whose website is this? (Ask the user to find the about page)

---Subject can now explore further than visual-only observation---

Pretend you work for an agricultural company interested in lighting applications for your business. Does it appear this website has information for you? Can you find it? How easily?

Pretend you work for a lighting company. Does it appear to you that these people offer a wide variety of services, a specific set of services, etc.?

Pretend you are a recent college graduate and you want to see if you can further your education. Where to go to find this information?

Now let's say you want to contact these people. How would you do that?

Can you read all the text on the page easily?

Do the images used make sense?

Try clicking around on some of the links, stories, etc. Do they lead where you expected them to?

Post-Test Questions:

Have you seen this webpage before the test?

What does the website appear to be about?

How do you feel about its layout?