Designing a usability study with eyetracking

Adding eyetracking and effects research to your usability tests

Laura Ruel
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Bon dia

Ho sento, no parlo catala

Si parlo molt rapid, si us plau digueu-m’ho.
What we will do:

• Discuss successful eyetracking study methods and the benefits of eyetracking.
• Work on developing study ideas
• Understanding the data Tobii eyetracking can provide.
• Execute eyetracking tests on a Tobii machine.
• Review the data – discuss possible findings.
Background

Develop questions

Sample questions:
Please write down your own thoughts.

• What is the relationship between hyperlink density and users' attitudes?

• What is the relationship between graphic density and users' attitudes?

• What style of story carousel is most effective?

• How do people move through a news Web site?

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Background

• Design research studies
  – Effects
  – Usability
  – Eyetracking
Background

• Usability

![Graph showing usability issues found with increasing number of test users.](image)
Background

• Media Effects

Background

• Data types: gaze plot
Video of gaze replay

Background

• Eyetracking: Hotspot
When to use eyetracking

Considerations

**Strengths**
- Shows what participants really look at, and not what they say they look at
- Brings a quantitative element to a discipline traditionally dominated by only qualitative research
- Provides evidence of specific visual patterns
- Can help improve usability and usefulness of visual material
- Identifies the relative intensity of a user’s attention at various parts of a product

**Weaknesses**
- Doesn’t tell you whether users actually “see” something. Users can aim their eyes at an area for a short time without any result they are aware of
- Cannot prove that users didn’t see something, as users can acquire useful information through peripheral vision
- Cannot determine why users are looking at something
- Not everybody is able to use eyetracker technology
Considerations

- Not every study will benefit from eyetracking data.
- Before deciding to use eyetracking be CLEAR about the information you desire.

Test types

- Eyetracking browsing behaviors
  - PROS:
    - Fast set up
    - Users see REAL content
    - Only need five people
  - CONS
    - Results are not able to be generalized
    - Meaningful statistical analysis not possible
Test types

- Eyetracking with controlled variables
  - PROS
    - Scientifically valid results possible
    - Specific questions can be answered
  - CONS
    - Set up takes time
    - Content can seem forced and not realistic
    - Must have AT LEAST 15 people in each condition

With both test types

- Strict protocols must be followed
Sample of controlled variable studies

Study design- link density

Links = 22

Links = 44

Links = 58
Study design – link density

Total number of participants = 60
Mean age = about 31

<table>
<thead>
<tr>
<th></th>
<th>Number of Stories Viewed</th>
<th>Time on hp before clicking</th>
<th>Total Time on site</th>
<th>Satisfaction (1-9 scale)</th>
<th>Perceived Relevance (1-9 scale)</th>
<th>Perceived Complexity (1-9 scale)</th>
<th>Perceived Involvement (1-9 scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (32 stories)</td>
<td>2.78</td>
<td>54.5</td>
<td>4:38</td>
<td>5.86</td>
<td>6.55</td>
<td>3.57</td>
<td>3.80</td>
</tr>
<tr>
<td>B (44 stories)</td>
<td>3.00</td>
<td>34.5</td>
<td>4:18</td>
<td>5.90</td>
<td>6.57</td>
<td>4.55</td>
<td>4.28</td>
</tr>
<tr>
<td>C (58 stories)</td>
<td>4.55**</td>
<td>38.8</td>
<td>5:15</td>
<td>5.75</td>
<td>6.17</td>
<td>4.85*</td>
<td>4.95</td>
</tr>
</tbody>
</table>
Hotspots

• Above the fold stories were most viewed and clicked in both conditions, but clicks were distributed throughout multiple pages of scrolling.

Study design – slide shows
Study design – slide shows

Navigating slide shows

Total number of participants = 80
Mean age = about 29

52 women
27 men
Study design – slide shows

- Users were more attentive to the navigation and timers when both were present.
- The number of controls did not seem to affect recall.

More attention vs. Less attention

Study design – slide shows

- More navigation = users spending more time and users perceiving the site to be more interactive.
Navigating slide shows

More feedback = users feel more engaged

Study design – slide shows

<table>
<thead>
<tr>
<th></th>
<th>Memory score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer only</td>
<td>35</td>
</tr>
<tr>
<td>None</td>
<td>33</td>
</tr>
<tr>
<td>Both</td>
<td>37</td>
</tr>
<tr>
<td>Tabs only</td>
<td>34</td>
</tr>
</tbody>
</table>
Navigating slide shows

• **An observation:**
  When users encountered interruptions in the slideshow, they looked for and found the navigation aids and used them.

Other observations:
We found a relationship between the time spent with a slideshow and:

• How relevant the users perceived the site to be
• The amount of engagement they felt
• The users’ perception of a sense of community with the site and the credibility of the site.
Sample of browsing behavior studies

Study design – seeing ads?
Study design – seeing ads?
Study results- links clicked

- 14 participants – 58 stories clicked on
  - Photo / headline / blurb 19%
  - Photo / headline 12%
  - Head / blurb 13%
  - Headline only 55%

Gracies per la seva atencio.

Laura Ruel
lruel@unc.edu

http://lauraruel.com/usid08