Designing and Conducting Usability Research on Social Media Misinformation with users who are Low Vision or Blind

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Misinformation Moderation on Social Media

Moderation on Social Media → Misinformation warnings as visual frictions

Covers → pre-exposure deterrence

Labels → post-exposure assistance

Source: https://blog.twitter.com/en_us/topics/product/2020/updating-our-approach-to-misleading-information
Social Media Users who are Low Vision or Blind

A11y → Warnings do not take into consideration users with visual impairments or people who utilize assistive technology

Covers → a confusing text blurb (*Some or all of the content... Learn More. View.*)

Labels → an out-of-nowhere suggestion (*Get the facts about COVID-19*)
Research Questions

**RQ1** → What are the accessibility experiences of users who are low vision or blind with misinformation interventions on social media?

**RQ2** → How misinformation interventions on social media help users who are low vision or blind with truth discernment?

**RQ3** → What design recommendations do users who are low vision or blind have for inclusively accessible misinformation interventions?
Recruitment

**IRB Approval** → 18+, US social media users who are legally blind or low vision

**Sampling** → Snowballing → LinkedIn post (spammed by bots) → participant pool

**Sample** → Demographic distribution:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Female</th>
<th>Male</th>
<th>Non-Binary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16 (56%)</td>
<td>12 (41%)</td>
<td>1 (3%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Racial/Ethnic Self Identification</th>
<th>White</th>
<th>Hispanic/latinx</th>
<th>Asian</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14 (48%)</td>
<td>7 (24%)</td>
<td>5 (17%)</td>
<td>3 (10%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Political Self-identification</th>
<th>Apolitical</th>
<th>Left-leaning</th>
<th>Moderate</th>
<th>Right-leaning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 (17%)</td>
<td>12 (41%)</td>
<td>7 (24%)</td>
<td>5 (17%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>[18-29]</th>
<th>[30-39]</th>
<th>[40-49]</th>
<th>[50-59]</th>
<th>[60+]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11 (38%)</td>
<td>8 (28%)</td>
<td>4 (14%)</td>
<td>2 (7%)</td>
<td>4 (14%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>High-school</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Doctorate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 (10%)</td>
<td>12 (41%)</td>
<td>11 (38%)</td>
<td>3 (10%)</td>
</tr>
</tbody>
</table>
Recruitment (cont’d)

Sample → Visual disability profile:

<table>
<thead>
<tr>
<th>Visual Self Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Totally Blind</strong></td>
</tr>
<tr>
<td>4 (14%)</td>
</tr>
<tr>
<td><strong>Light Perception</strong></td>
</tr>
<tr>
<td>11 (38%)</td>
</tr>
<tr>
<td><strong>Legally Blind</strong></td>
</tr>
<tr>
<td>11 (38%)</td>
</tr>
<tr>
<td><strong>Low Vision</strong></td>
</tr>
<tr>
<td>3 (10%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iPhone</strong></td>
</tr>
<tr>
<td>24 (83%)</td>
</tr>
<tr>
<td><strong>Android</strong></td>
</tr>
<tr>
<td>1 (3%)</td>
</tr>
<tr>
<td><strong>Windows PC</strong></td>
</tr>
<tr>
<td>4 (14%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assistive Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screen Reader</strong></td>
</tr>
<tr>
<td>23 (79%)</td>
</tr>
<tr>
<td><strong>Magnifier</strong></td>
</tr>
<tr>
<td>4 (14%)</td>
</tr>
<tr>
<td><strong>Large Text</strong></td>
</tr>
<tr>
<td>2 (7%)</td>
</tr>
<tr>
<td><strong>Color filters</strong></td>
</tr>
<tr>
<td>2 (7%)</td>
</tr>
</tbody>
</table>

Sample → Social media platform of choice:

<table>
<thead>
<tr>
<th>Social Media Platform of Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YouTube</strong></td>
</tr>
<tr>
<td>14 (48%)</td>
</tr>
<tr>
<td><strong>Facebook</strong></td>
</tr>
<tr>
<td>9 (31%)</td>
</tr>
<tr>
<td><strong>TikTok</strong></td>
</tr>
<tr>
<td>6 (21%)</td>
</tr>
</tbody>
</table>
**Interview Setup & Compensation** → Zoom (no video), verbal consent, [interview], debriefing; $25 Amazon gift card, duration: 40-60 minutes

**Stimuli** → Used for answering RQ2 and RQ3:
Research Execution

**Accessibility experiences** → 62% of the participants did not notice nor nor have paid attention to their screen reader verbalizing the text of the labels

**Truth discernment** → Only 28% of the participants used the labels to assess the reliability and accuracy of the posts

**Objections:**

YouTube’s implementations with several links and confusing text was not helpful

Facebook’s does not specify who the “fact checkers” are and what is their credibility in establishing truth

TikTok’s label obscurity makes it impossible to notice it

Intrusion of free speech (supported by the researchers (!?))
A11y redesign recommendations

Make the labels *designated interaction elements*

Make the labels *verbose covers* instead, akin to the system notifications

Place the labels *before* the content

Substantiate the warnings with a *before-content audio signal* or vibration in addition to a cover or a label

Enable *stark contrast, bold/large font, or standout colors* that are different from the platform’s aesthetics

Entirely *remove the labels* from the platforms
Guidelines: UX Research with Participants who are Low Vision or Blind

**Stimuli Material** → Link to public post/video on the target platform (no screenshots, no alternative text, no compromises)

**Eligibility** → Legally blind with acuity of 20/200 or field-of-view of 20 degrees or less in the better eye with correction; low vision with acuity up to 20/70 and field-of-view larger than 20 degrees in the better eye with correction

**Recruitment Tools** → Recruitment script distributed via email, interview scheduling via Calendly

**Recruitment Script** → Plain-text email, no graphics, include multiple means of contacting researcher for any questions or for scheduling assistance

**Remote Interview** → Conducted over Zoom Meetings, participants use their own device and assistive technology in a familiar environment
Guidelines: UX Research with Participants who are Low Vision or Blind (cont’d)

**Be Mindful** → Participants will have varying levels of visual perception ranging from low vision with high visual acuity to total blindness with no perception of lights, shadows and shapes

**Stay Flexible** → Personal preference will vary from one participant to another based on accessibility needs

**Ask Questions** → UX concerns all users, so don’t be afraid to ask direct and respectful questions about their experience as a user with a disability

**Listen and help** → users might complain about other usability aspects of the same or other apps, let the speak as there is quite a lot to learn and help with
Research Agenda

**TikTok** → Ongoing work to investigate the accessibility of content labels on TikTok

**TTS Data Collection** → An investigation to develop a privacy-centered and easy to deploy protocol for capturing synthesized speech from a participant’s text-to-speech implementation

**A Comparative study** → Ongoing work to compare the perception of misinformation moderation, experiences, and attitudes between low vision or blind users and visually able users
Thank you!

Questions, Comments, Concerns

Twitter: @ACALaboratory