Universal Accessibility in Web Survey Design: Practical Guidelines for Implementation

2010 FedCASIC Conference March 18, 2010

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Presentation Overview

- Summary of existing literature
- Why make web surveys accessible?
- Programming examples and guidelines

- Testing for accessibility
- Conclusions and areas for future research



Existing Literature Summary

 Web survey design is a rapidly expanding field. Main focus to date on who responds, how, when, and differences between web and other modes.

In social sciences few publications address issues of technical design or its potential relationship to unit or item non-response.

 Gap exists in social science literature on creating and testing web surveys for accessible design.

What Is an Accessible Web Survey?

- 1. Usable by all users, regardless of ability or disability.
- 2. Has logical layout and navigation.
- 3. Takes advantage of assistive technologies:
 - Screen readers
 - Head pointers/keyboard only users

4. Accessible to all situations:

- Users with old technology or slow connection speed
- Users with a disability
- Users accessing web via hand-held devices



Why Make Web Surveys Accessible?

Reduce non-response bias:

- Technology of users
 - At high end: smart phones and PDAs
 - At low end: slow dial-up connections
- 12.1% of U.S. population ages 21-64 report a disability (ACS, 2008)
 - Persons blind or vision impaired use of assistive technology
 - Persons mobility use of keyboard only
 - Persons with intellectual disabilities cognitive load

Comply with Federal legislation

Section 508 of Rehabilitation Act of 1973 applies to "real" & virtual spaces.

Universal Design (UD) is of benefit to <u>all</u> users.

Examples: curb cuts in sidewalks, hands free access to sinks

How Is a Web Survey Made Accessible?

1. Properly crafted HTML forms

- Separate content from style using CSS
- Flash?



2. Capacity to interface with Assistive Technology

- Taking advantage of the HTML forms' UD features (labels/IDs)
- Avoids inaccessible traps

3. Adheres to governing standards

- Set by World Wide Web (W3.org) consortium
- Section 508 of the Rehabilitation Act



Design Pitfalls: What to Avoid

Avoid "conditions" such as surveys which function:

- Only with JavaScript
- Only with Internet Explorer Browser
- Only with specific formatting or font sizes
- Have a time limit for responses

Avoid media which have no alternatives:

- Images with no alt text
- Audio with no transcript
- Video without captioning

Form v. Function

Applying Lessons Learned: Case Example - M.I.T. Strata Center

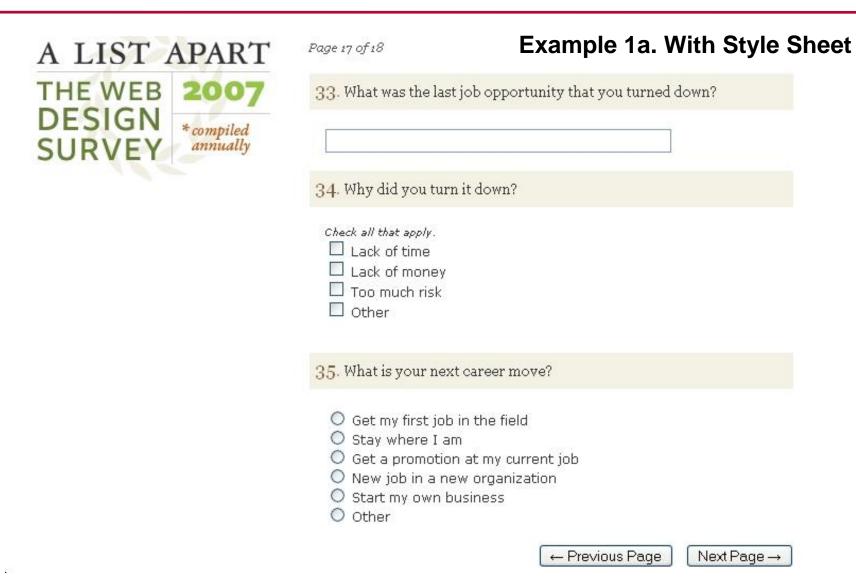
NEWS IN PHOTOS

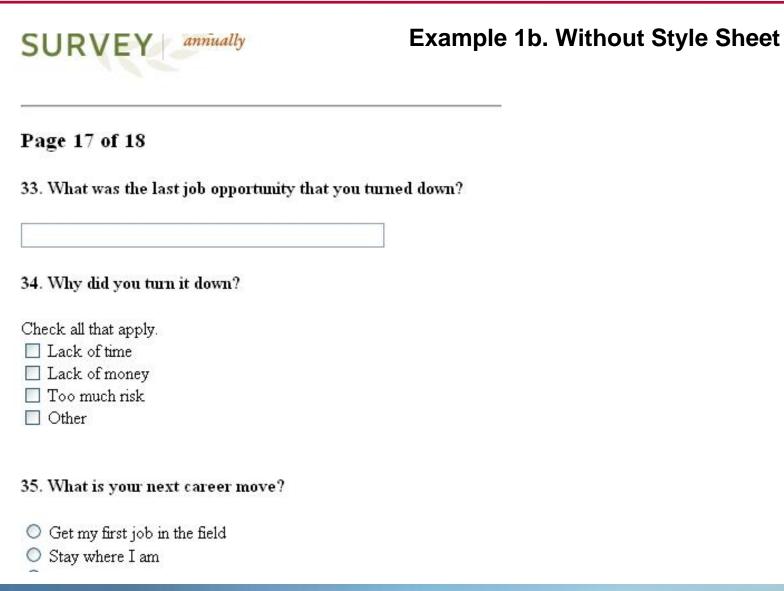




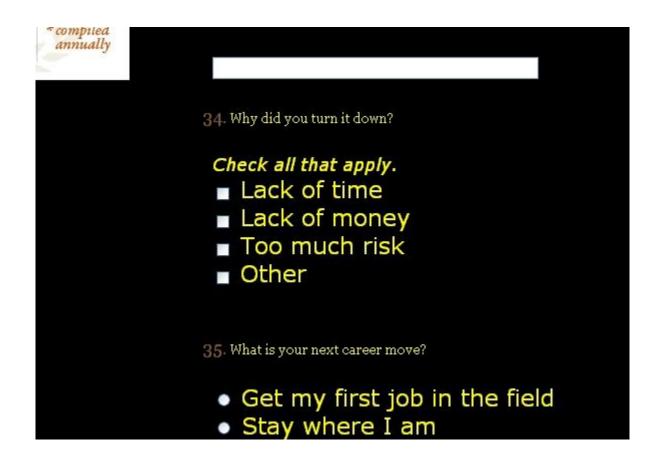


Frank Gehry No Longer Allowed To Make Sandwiches For Grandkids





Example 1c. High Contrast Style Sheet



Example 2a. With Style Sheet

	Disagree- This would not be helpful	Somewhat Disagree	Neutral	Somewhat Agree	Agree- This would be helpful
ns in an accessible place for	0	0	0	0	0
esses (is there enough -downs & maintenance,	0	0	0	0	0
many computers /users for 1	0	0	0	0	0
g/space scheduler	0	0	0	0	0
neet needs (with web/email we any more demands for quick	0	0	0	0	0

Example 2b. Without Style Sheet

	Disagree- This would not be helpful	Somewhat Disagree	Neutral	Somewhat Agree	Agree- This would be helpful
ns in an accessible place for	0	0	0	0	0
esses (is there enough -downs & maintenance,	٥	0	0	0	0
o many computers /users for 1	0	0	0	0	0
g/space scheduler	0	0	0	0	0
neet needs (with web/email we any more demands for quick	0	0	0	0	0

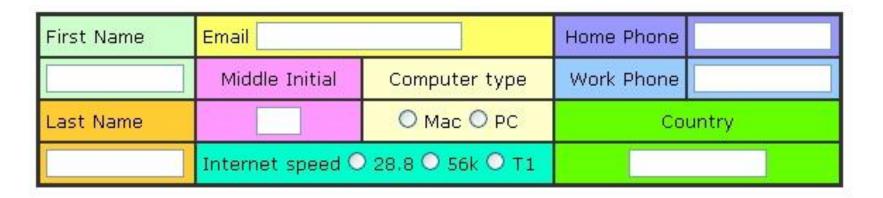
Note: this is a different slide from the last.

Example 2c. High Contrast Style Sheet

	Disagree- This would not be helpful	Somewhat Disagree	Neutral	Somewhat Agree	Agree- This would be helpful
accessible place for					
(is there enough s & maintenance,					
computers /users for 1					
e scheduler eds (with web/email we					

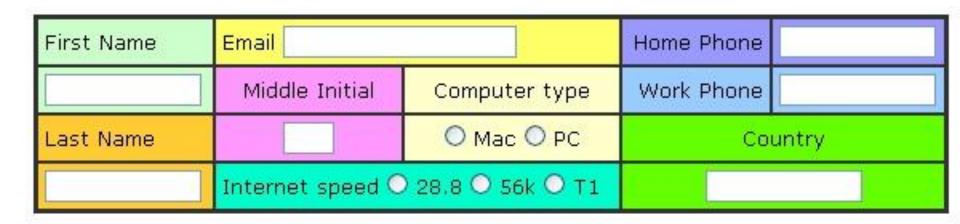
Applying A Logical Layout

Example 4a. Application in a Form



Courtesy of: WebAIM.org

Logical Layout



Example 4b. Application in this form

1		2	3
4	5	6	7
8	. 9	10	11
12	13		14

Logical Layout

Example 4c. Applying the logical layout

First Name	
Last Name	
Middle Initial	
Home Phone	
Work Phone	
Country	
Computer Type O Mac O PC O Linux	Internet Speed O 28.8 O 56k O T1

Applying UD to Common Web Survey Features

Feature	Challenge to UD	UD Applied
Sophisticated layout / Navigation Process	 Looks "pretty" but underneath "broken." High volume of content on each form. Tasks not clearly delineated to user. 	 Use headers to indicate new page. Split survey into manageable forms. Clearly indicate tasks. Tasks use fewest steps possible.
Grid layout / Likert scales	Difficult to locate response options with response categories.	Uses logical layout.Has identifiers and labels.
Color / Graphics & Pop-Ups	 Can't be sole means of communication. Without description of content – graphic useless. Can confuse focus of users and breaks down navigation. 	 Keep color within CSS Don't convey ideas using color alone (add bold or other ways for emphasis). Announce pop-ups.

Testing for Accessibility

- Replicate actual environment of possible respondents
 - Smartphones, PDAs
 - Slow dialup connections
 - Assistive technology
- Testing with use of online tools such as:
 - Cynthia Says, LIFT, WAVE, WebXact.
- Ask for VPAT
 - If using vendors and service providers

- Additional testing can include: (Firefox WebDeveloper toolbar)
 - Style sheets and images are disabled
 - Without javascript
 - Without use of mouse (keyboard only)
 - Use of alternate style sheet (high contrast/large text)
 - With screen reader JAWS (demo version available, or try FANGS)

Conclusions

- Creating accessible environments in virtual spaces is less complex than you think:
 - Learn the tools and use them
 - Follow guidelines for best practice and test against them
- Creating accessible web surveys:
 - Reduces non-response bias
 - Potential for increasing data quality
- Learn from past mistakes (now in web 2.0). Technology is advancing rapidly – as new techniques emerge – we must decide <u>whether</u> and <u>how</u> to use them.
- Great opportunity for research & publication on accessible design and how/whether it impacts response.

For More Information

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Publication:

 Matulewicz, Holly H. and Jeff Coburn. "Universal Design for Web Surveys: Practical Guidelines." <u>Survey Practice</u>, November 2008.