Common Usability Issues with Web Surveys: Results from Usability Testing of the American Community Survey/Puerto Rico Community Survey and Census Quality Survey Online Instruments

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FedCASIC@ BLS
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Census Bureau
Demographic Surveys Online

- Census Quality Survey (live summer 2010)
- National Survey of College Graduates (live)
- American Community Survey (ACS) - goes live Spring 2011
- Puerto Rico Community Survey (PRCS) – also goes live Spring 2010
- More coming soon!
Small Sampler of Findings

• ACS, PRCS, and CQS- commonalities, similarities, and differences
• Benefits of Iterative Testing
• Advantages of Iterative Testing
  1. Login Screen- Improvements through iterative testing
  2. Roster & Residence Rules
  3. Progress Indicator
  4. Use (or lack thereof) of “Help” Links
  5. Grid formatted yes/no question (ACS/PRCS Facilities & Insurance)
ACS Round 2

TO THE RESIDENT OF:
198 Young Rd
Anytown, MD 03612
1. Login-Screens

ACS Login Screen Round 2 – 9s

Household ID

ACS 999 999 999 01 111 1234 50
SEQ004-49315

PIN

TO THE RESIDENT OF:
101 Main St
Anytown, MD 00043

** WARNING **
You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for purposes for which authorization has not been extended is a violation of federal law and can be punished by fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.
Round 2 Login Screen

- Participant enters the example numbers

![Login Screen]

Participant 34
Participant enters the spaces with the Household ID (HHID)

Do not include any spaces.

Household ID: 946 839 215
PIN: 1103 08

Participant 32
Round 2 Login Screen - Xs

The example numbers were replaced with Xs.

**WARNING**
You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for the purposes for which authorization has not been extended is a violation of federal law and can be punished with fines or imprisonment (PUBLIC LAW 99-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.
Round 2 LoginScreen

3 of the 4 of the participants who saw this option put in the Xs from the example image (and spaces)

![Login Screen Image]

Participant 41
Round 2 Login Screen

The image was changed again to include #s

Example
Household ID

Example
PIN

ACS #### #### 01 111 ######
SEQ004-49315

TO THE RESIDENT OF:
101 Main St
Anytown, MD 00043

The word “example” was also added to the image

** WARNING **
You have accessed a UNITED STATES GOVERNMENT computer. Use of this computer without authorization or for the purposes for which it has been programmed is a violation of federal law and can be punished with fines or imprisonment (PUBLIC LAW 89-474). System usage may be monitored, recorded, and subject to audit. Use of this system indicates consent to monitoring and recording.
Round 2 LoginScreen

Participant entered it correctly

Participant 45
The last participant entered both the ACS and SEQ lines \textit{and} included the spaces.
Login Screen

- No one entered #s for the following rounds of ACS testing
- The image was also changed for CQS before the fully programmed instrument was tested
  - Also no #s entered
- Perhaps this is the best method (so far) of presenting an example user ID
2. Roster & Residence Rules

• In general, Ps have some difficulty with deciding whom to include on their list of household residents
  – Esp. in complex household (e.g., commuters, shared custody, boarding school students, roomers and boarders, etc.)
2. Roster & Residence Rules

Please list the names of each person who was living and sleeping at 123 Any Street on January 1, 2010. (Help)

Enter names until you have listed everyone who lives or stays there, then click Next.

First Name    MI    Last Name
__________________________
__________________________
__________________________
__________________________
__________________________
__________________________
__________________________

Click here to add more people

<< Previous    Next >>
The following questions are about everyone who is living or staying at 198 Young Rd.

First, create a list of people. Enter one person on each line. Leave any extra lines blank. Enter names until you have listed everyone who lives or stays there, then click Next. (Help)

Click here to add more people
Las siguientes preguntas son acerca de todas las personas que viven o se quedan en URB LAGO DE PLATA, 253 CALLE HIBISCUS.

Primero, cree una lista de personas. Entre una persona en cada línea. Deje en blanco cualquier línea extra. Entre los nombres hasta que haya listado a todas las personas que viven o se quedan allí, y entonces oprima en Siguiente. [Ayuda]

<table>
<thead>
<tr>
<th>Nombre</th>
<th>Inicial</th>
<th>Apellidos</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oprima aquí para añadir a más personas

<< Anterior  Siguiente >>
2. Roster & Residence Rules

Rounds 3 & 4A: ACS ROSTER B Duplication – name added to Roster A and then again at Roster B

Heatmap Round 3 - n=30
2. Roster & Residence Rules

The following questions are to make sure this list is as complete as possible.

Other than the person listed below, does ANYONE ELSE live or stay there? (Help)

For example, roommates, foster children, boarders, or live-in employees.

Name Here
Name Here

☐ Yes
☐ No
2. Roster & Residence Rules

Names listed:
Name Here
Name Here
Name Here

We do not want to miss any people who might have been staying at 123 Any Street on January 1, 2010. Were there any additional people that you did not already list?

For Example:
- Children, such as newborn babies and foster children
- Relatives, such as adult children, cousins, or in-laws
- Nonrelatives, such as roommates or live-in babysitters
- Any other people with no permanent place to live

○ Yes
○ No

CQS Miss Screen
2. Roster & Residence Rules

- Important to make the point of Roster B/MISS type screens clear
- To include additional people NOT already listed.
- When possible, ask the question first before giving a list of names.
3. Progress Indicator

• Although a non-clickable progress indicator was added to each of the 3 surveys, no participants reliably used it.

• Eye-tracking shows little interest in the feature in its current form:
  – Ps only really glanced at it when something changed.

• CQS is much shorter than ACS.
3. Progress Indicator
3. Progress Indicator

2010 Census Quality Survey

Instructions:
We need to record each person's relationship to the household.

Options:
- Husband or wife
- Biological son or daughter
- Adopted son or daughter
- Stepson or stepdaughter
- Brother or sister
- Father or mother
- Grandchild
- Parent-in-law
- Son-in-law or daughter-in-law
- Other relative
- Roomer or boarder
- Housemate or roommate
- Unmarried partner
- Other nonrelative

CQS Relationship 1
3. Progress Indicator
3. Progress Indicator
3. Progress Indicator

ACS PSELECT Screen
3. Progress Indicator
3. Progress Indicator
3. Progress Indicator

PRCS PSELECT Screen
3. Progress Indicator

- Should consider clickable content in the future for progress indicator
- Possibly examine and test other locations and designs for static design
- Did not seem to have negative impact. How can positive impact be improved?
4. Use of “Help” Links

• Across all 3 surveys, Ps did not tend to use the help links
• For each link that was used, only 1-2 Ps used it
  – Some people tended to click on help links more than others – inflated help link usage rates
• Possibly not prominent enough and/or Ps possibly won’t click help no matter how prominent it is
4. Use of “Help” Links
4. Use of “Help” Links

ACS Relationship 1
4. Use of “Help” Links
5. Grid-Formatted Questions

• For complex questions with multiple sub-questions, two questions on the ACS were formatted as grids
  – Consistent with other modes
  – Facilities and Insurance questions
5. Grid-Formatted Questions

### ACS Facilities

**Image Description:**
- A grid-formatted survey question on the American Community Survey (ACS) platform.
- The question asks about various amenities in a rental housing unit, such as a bath/tub, shower, stove, range, air conditioner, and phone service.
- Heatmap visualization showing user interaction trends.

**Table Format:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does this apartment have:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Hot and cold running water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. A sink with hot water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. A bath tub or shower?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. A sink with a faucet?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. A stove or range?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. An air conditioner?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Voice service from which you can both make and receive calls?</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
5. Grid-Formatted Questions

ACS Insurance (Round 1)
5. Grid-Formatted Questions

ACS Insurance (Round 5)
5. Grid-Formatted Question
5. Grid-Formatted Question

• Some questions are better asked as a grid format, like the facilities question.

• Consider asking questions like the insurance Q as separate questions, unless there is a mechanism on the back end to easily handle this pattern of response.
Conclusions/Discussion

- Iterative usability testing can catch unanticipated issues with Web surveys before they go live.
- Respondents do not necessarily recognize an example user ID, so explicit labels and blurry #s are a good way to go.
- When rostering, ask questions, then provide lists of names if possible.
  - Ps tend not to be good at interp. & applying rules.
Conclusions/Discussion

- Future work should investigate progress indicators that are helpful for long surveys with complex skip patterns.
- If there is information that a P needs to answer a question, put it on the screen and not behind a help link – it won’t be seen much!
- Grid-formatted questions can work for some questions that are intuitively either-or in nature, but be careful when it seems like a “select one” type of question.
- Leave time in the design schedule for usability testing! It works!
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Questions?

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