Enhancing Blaise 4 Surveys for JAWS Screen Reader Compatibility

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Introduction

• Diverse workforce
• Reasonable Accommodation
• Job Access With Speech (JAWS)
  • Text-to-speech or Braille output
  • JAWS Cursor
• Current Screen Standards
• Request to update
Current Process

• Review three CATI Instruments
  • Telephone Point of Purchase (TPOPS)
  • Medical Expenditures Panel Survey (MEPS)
    • Pre-Screener
    • Telephone Follow-Up (TFU)

• Observe JAWS Users

• Prototype Development

• Research and Implement Solutions
Proposed Issues and Resolutions
1. JAWS User Flag and Parameter

- **Goal:** Design JAWS-friendly screens that will seamlessly integrate with our current screen standards
- **Multiple Interviewers**
- **JAWS Screens or Non-JAWS Screens**

- **Resolution:** Standard flag passed as a parameter
2. Interviewer Instructions

• **Issue**: Current Interviewer Instructions
• Visual display vs JAWS output
  • ♦
    • Wingdings 61555
• Adjust JAWS or the Instrument?

• **Resolution**: JAWS-friendly interviewer instructions
  • Use { } instead of ♦
• Multiple instructions
• Fills to display JAWS or Non-JAWS instructions
2a. Interviewer Instructions

What is the correct name and physical address for this establishment?

♦ Press [Insert] key to add to/edit field contents.
♦ Press [Esc] key to recall original field contents.

What is the correct name and physical address for this establishment?

{ Enter company name or press Enter key to accept field contents.
Press Esc key to recall original field contents. }
3. Multi-Column Answer Lists

• Users typically use CTRL + Home to set the JAWS cursor at the top and the arrow keys to move through each line

• **Issue:** JAWS reads everything on a single line. No column differentiation.

• **Resolution:** Where possible, modify layout so answer lists are one column
  • Avoid scrolling
3a. Multi-Column Answer Lists

- Are you 1’s biological son or daughter, adopted son or daughter, stepson or stepdaughter, OR foster son or daughter?
  - 1. Biological son or daughter
  - 2. Adopted son or daughter
  - 3. Stepson or stepdaughter
  - 4. Foster son or daughter

- Are you person’s biological son or daughter, adopted son or daughter, stepson or stepdaughter, OR foster son or daughter?
  - 1. Biological son or daughter
  - 2. Adopted son or daughter
  - 3. Stepson or stepdaughter
  - 4. Foster son or daughter
4. Multi-Column Form Panes

<table>
<thead>
<tr>
<th>Name1</th>
<th>ANYTOWN COUNTY NURSING HOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street1</td>
<td>877 CEDAR BLUFF RD</td>
</tr>
<tr>
<td>Name2</td>
<td></td>
</tr>
<tr>
<td>Street2</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>ANYTOWN</td>
</tr>
<tr>
<td>State</td>
<td>AL</td>
</tr>
<tr>
<td>Zip5</td>
<td>99997</td>
</tr>
<tr>
<td>Zip4</td>
<td>0000</td>
</tr>
</tbody>
</table>

[Diagram of multi-column form panes]
5. Multiple Answer Questions

• **Issue**: One question asking for multiple answers
  • “May I have your name and title please?”
  • Not clear there are two input boxes

• **Resolution**: Add clarifying instructions
  • Get sponsor buy-in
5a. Multiple Answer Questions

May I have your name and title please?

- Press [Insert] key to add to/edit field contents.
- Press [Esc] key to recall original field contents.

Respondent Name: Mary Citizen Supervisor
Respondent Title: 

May I have your name and title please?

{ Enter name or press Enter key to accept field contents. }

Press Esc key to recall original field contents.

Respondent Name: Mary Citizen
Respondent Title: 
6. Hard Returns in Question Text

• Adds spacing to questions and interviewer instructions
• Split long questions into multiple lines
• **Issue:** Creates extra pauses in JAWS

• **Resolution:** Remove extra hard returns
  • Must identify affected screens
6a. Hard Returns in Question Text

That completes the last regularly scheduled interview for this household for the Point of Purchase Survey. If you have any comments regarding the burden estimate or any other aspect of this survey, including suggestions for reducing the time needed to respond, you may contact the Bureau of Labor Statistics. Additional information can be found on the BLS TPOPS website.

Would you like either address?
7. Scrolling

• JAWS does not auto-scroll or ID that a screen may have a scroll bar
  • Affects hearing all text on screen

• Different users may have different screen resolutions

• Best Practice: Design to avoid scrolling at lowest possible resolution
8. Exiting Rosters or Tables

- Standard exit for rosters and tables is typing 999
- Some users accidentally enter 9 or 99 or 9999.
  - Brings additional line on path
  - Sometimes difficult to back up

- Solution: Edit Check looking for 999 to exit
Challenges Encountered
1. Lookup Tables

- **Issue**: Not obvious a lookup table has appeared
- When table first appears, the first line is immediately read by JAWS
- JAWS reads text typed into the search bar, but not highlighted entry
  - Did the interviewer select the right entry?
- Interviewers must switch between JAWS Cursor and PC Cursor
1a. Lookup Tables

• **Solution**: Maniplus Approach
  - Custom dialog box with similar lookup display
  - Updated title bar with extra instruction
  - Show only necessary fields

• **Issue**: First key press to activate Maniplus lookup isn’t brought into search bar or spoken/displayed by JAWS
1b. Lookup Tables

• **Solution:** Create a Blaise Data View (BDV)
  • Allows title bar customization
    • From “**State**” to “**State Lookup, JAWS Users switch to PC Cursor**”
  • Change displayed columns
  • Change displayed column names
  • Reusable for different instruments using the same lookups
    • Update required if lookup database structure changes
1c. From Default to BDV

Original Lookup

<table>
<thead>
<tr>
<th>State Name</th>
<th>STATEcode</th>
<th>STATEAbbrev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>10</td>
<td>DE</td>
</tr>
<tr>
<td>Dist. of Columbia</td>
<td>11</td>
<td>DC</td>
</tr>
<tr>
<td>Florida</td>
<td>12</td>
<td>FL</td>
</tr>
<tr>
<td>Georgia</td>
<td>13</td>
<td>GA</td>
</tr>
<tr>
<td>Hawaii</td>
<td>15</td>
<td>HI</td>
</tr>
<tr>
<td>Idaho</td>
<td>16</td>
<td>ID</td>
</tr>
<tr>
<td>Illinois</td>
<td>17</td>
<td>IL</td>
</tr>
<tr>
<td>Indiana</td>
<td>18</td>
<td>IN</td>
</tr>
<tr>
<td>Iowa</td>
<td>19</td>
<td>IA</td>
</tr>
<tr>
<td>Kansas</td>
<td>20</td>
<td>KS</td>
</tr>
<tr>
<td>Kentucky</td>
<td>21</td>
<td>KY</td>
</tr>
<tr>
<td>Louisiana</td>
<td>22</td>
<td>LA</td>
</tr>
<tr>
<td>Maine</td>
<td>23</td>
<td>ME</td>
</tr>
<tr>
<td>Maryland</td>
<td>24</td>
<td>MD</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>25</td>
<td>MA</td>
</tr>
</tbody>
</table>

Search: md
22:52

Select  Cancel

Lookup with JAWS Changes

<table>
<thead>
<tr>
<th>State Name</th>
<th>STATE Abbrev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>DE</td>
</tr>
<tr>
<td>Dist. of Columbia</td>
<td>DC</td>
</tr>
<tr>
<td>Florida</td>
<td>FL</td>
</tr>
<tr>
<td>Georgia</td>
<td>GA</td>
</tr>
<tr>
<td>Hawaii</td>
<td>HI</td>
</tr>
<tr>
<td>Idaho</td>
<td>ID</td>
</tr>
<tr>
<td>Illinois</td>
<td>IL</td>
</tr>
<tr>
<td>Indiana</td>
<td>IN</td>
</tr>
<tr>
<td>Iowa</td>
<td>IA</td>
</tr>
<tr>
<td>Kansas</td>
<td>KS</td>
</tr>
<tr>
<td>Kentucky</td>
<td>KY</td>
</tr>
<tr>
<td>Louisiana</td>
<td>LA</td>
</tr>
<tr>
<td>Maine</td>
<td>ME</td>
</tr>
<tr>
<td>Maryland</td>
<td>MD</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>MA</td>
</tr>
</tbody>
</table>

Search: md
22:52

Select  Cancel
2. Large Response Lists

• Not all screens can accommodate a single column of possible answer responses

• Two proposed solutions
  • Fill for JAWS users that reads the entire list in order
  • Lookup Table instead of an answer list
3. Customizing JAWS Settings

• JAWS Dictionary
  • Change the way JAWS speaks or displays a certain character or phrase
    • { - “Begin Interviewing Instruction”
    • } – “End Interviewing Instruction”
    • ? [F1] – “Press F1 for help”
    • Active Signal – “Soft Error, JAWS Users Switch to PC Cursor”
4. Centralizing JAWS Settings

• Central repository for JAWS Dictionary and settings
  • Consistent presentation to users
  • Better Maintenance
  • Easier Troubleshooting

• Under refinement as other standards for JAWS users are developed
Next Steps
Future Plans

• Instrument layouts and clarifying instructions already added
• 2019: Interviewer instructions, lookup tables, other approved changes
• Continue research into JAWS and instrument enhancements
• Blaise 5
  • New display, new standards
  • Write in JAWS friendly screens from the beginning
Conclusion

• Blaise 4 works well with JAWS with some changes to its defaults

• Get feedback from users to create the best solutions for their needs

• Many changes for JAWS do not impact non-JAWS users

• Design with accommodations in mind
Questions and Contact

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