

Using Blaise 5 to Solve Multimode and Multi-Device Challenges

Kathleen O'Reagan and Nikki Brown, Westat, United States

Abstract

A concurrent-mode mail and web survey was implemented in Blaise 5. The design included a mail out of a paper survey to all respondents, who were also given the alternative to use the web if they preferred. For this study, it was important to optimize the online layouts to support multi-device use. Blaise 5 enables respondents to use iOS, Android and Windows devices with varying screen sizes, browsers and other specific controls. The challenge of designing a web interface for respondents who may also be referring to accompanying hard copy when completing a survey had to be considered in the layout design for Blaise 5. Many of the questions had been designed for larger screens and tabular presentation and required adaptation. Multiple layouts had to be created to accommodate varying screen sizes and the presentation varied between the DEP, browser, tablet and smartphone. The layout issues involved color, design, images, and interactive content as well as the presentation of the information to be usable and readable. This paper discusses how the survey was managed and design changes needed to maximize the flexibility of Blaise 5 such as allowing respondents to initiate the survey on their personal devices thru the use of a link provide by text.

Overview

This project had been in production as a paper only (PAPI) survey when it was decided to provide a WEB component, which would include the use of mobile devices. Because the respondents would be in possession of a hard copy survey while participating in the WEB survey, it was decided that the look and feel of the WEB survey should remain consistent with the paper (PAPI). This was done to the extent possible making allowances for changes due to space constraints on smaller devices and requirements for WCAG 2.0 (508 compliance). The database also had to conform to the SQL database already in existence for the paper form. This kept us from using Blaise special attributes and caused some questions to be collected as two fields instead of one. Because in paper you have no control over what data is actually captured on the form, everything in the previously collected data was allowed to be empty (unanswered) Data Cleaning rules were applied to assign missing values. In the WEB, we also did not require most questions to be answered. The client provided specifications to determine what paths to follow for skip patterns where the lead in questions were allowed to be empty. We were provided specifications that included the following:

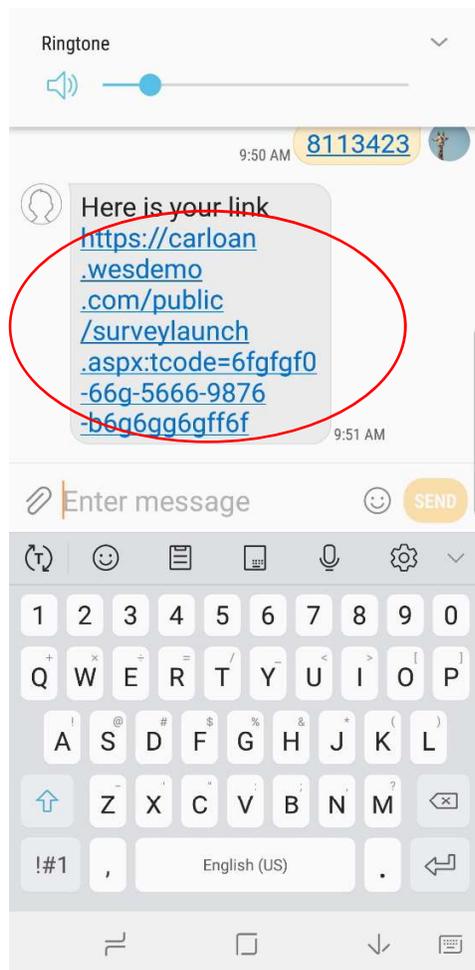
- A word.docx of the paper survey
- A file of all variables names and the allowed values for them
- An on-line flow document that contained specs for colors, fonts, skip patterns for empty values, and management screens.
- The graphic to be used in the header

Management

Management System

The management system, Multi-mode management system known as “M3” is a proprietary system used by Westat for management of multi-mode surveys. In the case of this survey, one of the modes, CAWI, is in Blaise 5 and the PAPI (paper) is in Teleform. The sample is loaded into M3 and the mailouts of paper surveys and the CAWI instrument are managed by it. The reminder letters are only sent out if there is no response either by mail or on-line. The CAWI instrument has multiple layout sets so for ease of login, an alternate way of login was provided for mobile devices. From a desktop or PC, the respondent just types the url and then has to key in an ID and a pin number that were sent in the cover letter with the survey. From a mobile device, they can text to a phone number a different key (also included in the cover letter) which will send them a link to the survey that handles the login for them. (Fig 1.)

Fig. 1. Login text



Management of Testing

Three layout sets were used for the CAWI instrument so testing needed to be done on multiple platforms. The contract called for usability in the five main browsers, IE, Chrome, Firefox, Opera and Safari.

Spreadsheets were made listing devices and browsers so that testing could be checked off for each. All of this then had to be repeated in Spanish to assure that none of the layouts needed to be modified for the sometimes longer Spanish text. When all layouts have been applied, the survey is opened for 508/WCAG2.0 testing and database testing.

- Desktop Windows (layout large browser – IE, Chrome, Firefox, Opera)
- Desktop MAC (layout large browser – Safari, Chrome, Firefox, Opera Mini)
- Samsung tablet (layout medium browser – Web Explorer, Chrome, Firefox, Opera Mini)
- IPAD (layout medium browser – Safari, Chrome, Firefox, Opera)
- Samsung phone (layout small browser – Web Explorer, Chrome, Firefox, Opera Mini)
- iPhone (layout small browser – Safari, Chrome, Firefox, Opera Mini)

Safari was only tested on the IOS devices and IE was tested on the Windows and Android devices.

Layout

Layout Design

The master page of each layout set was designed to the client’s specifications. Due to a lack of space on phones they chose to leave the header off the small layout set. Also, the left margin on the small layout master page was decreased to reduce the wrapping of text needed to display question and answer text on the screen without scrolling.

In the hardcopy many questions were displayed in a table like layout. These stem/leaf questions fit on both PC’s and tablets but not on phones without scrolling. We applied the FlatButton table template for both the large and medium layouts sets. (Figs. 2 & 3) Note that although the Large and medium layouts set use the same layout, the text wraps differently.

Fig. 2. Large Layout Set

Car Loans

For assistance with the survey, call 1-800-555-1212.

When you began the process of applying for the loan, how familiar were you (and any co-signers) with each of the following:

	Very	Somewhat	Not At All
The interest rates available at that time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The different types of loans available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The loan application process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The down payment that may be required	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Income requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your credit history or credit score	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Money needed for loan re-payment insurance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Previous Next

Fig. 3. Medium Layout Set

Car Loans

For assistance with the survey, call 1-800-555-1212.

When you began the process of applying for the loan, how familiar were you (and any co-signers) with each of the following:

	Very	Somewhat	Not At All
The interest rates available at that time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The different types of loans available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The loan application process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The down payment that may be required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Income requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your credit history or credit score	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Money needed for loan re-payment insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Previous Next

SAMSUNG

For the small layout set, we asked each line of the “table” individually. Because the stem question was not included in the field text for the individual lines, we used a role. (Fig. 4.)

Fig. 4. Stem question role

```
Q4_01 ("Q4_01")
  "When you began the process of applying for the loan, how familiar were you (and any co-signers) with each of the following:"
  "Cuando usted comenzó el proceso de solicitar el préstamo, qué tan familiar era usted (y cualquier co-firmante) con cada uno de
  los siguientes:\n"
  :TContinue
GROUP Grp_Q4
  FIELDS
    Q4A_01 ("Q4a_01")
      "The interest rates available at that time"
      "Las tasas de interés disponibles en ese momento"
      StemQuestionText "When you began the process of applying for the loan, how familiar were you (and any co-signers) with each of the
      following:"
      "Cuando usted comenzó el proceso de solicitar el préstamo, qué tan familiar era usted (y cualquier co-firmante) con cada uno de
      los siguientes:\n"
      :TVerySomeNot1

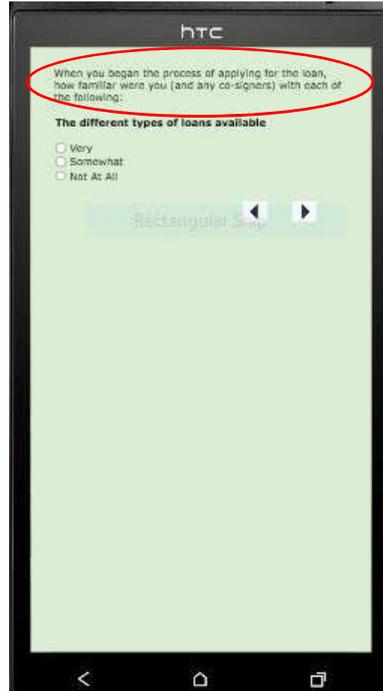
    Q4B_01 ("Q4b_01")
      "The different types of loans available"
      "Los diferentes tipos de préstamos disponibles"
      StemQuestionText "<FONT Bold=FALSE>When you began the process of applying for the loan, how familiar were you (and any co-signers)
      with each of the following:</FONT>"
      "<FONT Bold=FALSE>Cuando usted comenzó el proceso de solicitar el préstamo, qué tan familiar era usted (y cualquier co-firmante)
      con cada uno de los siguientes:\n</FONT>"
      :TVerySomeNot1
```

This role was filled with the stem question for each line. For the first question in the table the role text was in the same font as the field text (Fig. 5). For the subsequent lines the role text was not bolded. This ensured that the respondent always had the stem question available if needed. (Important when many lines in a table) (Fig. 6).

Fig. 5. Bold text

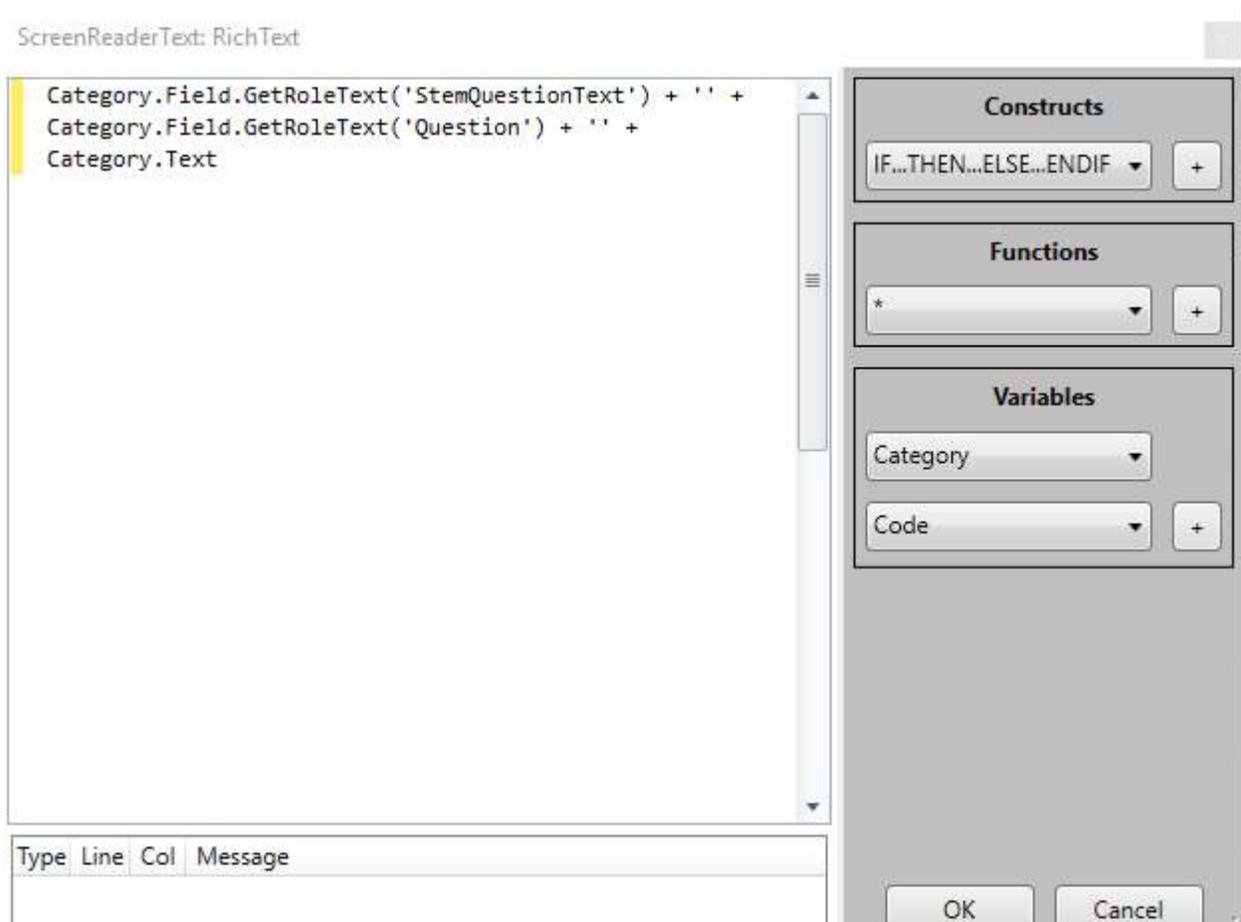


Fig. 6. Not bold text



This role text had another job. It was also used to make sure the stem question text was read by screen readers for 508/WCAG 2.0 compliance. (Fig. 7.)

Fig. 7. Expression for screen reader text



Some of the stem leaf questions had other specify fields as well. For these we just put two fields on the screen, the option Buttons table and a vertical template for the Other specify field.

In the original iteration of the WEB survey to match the database that was already in existence, any questions using a numeric field that had a check box on the form for DK had to be asked as two questions on the WEB instead of using a numeric type with a DK attribute. This meant that we also had to implement a hard edit saying that only one of the questions could be answered. Due to the more stringent requirements of 508/WCAG 2.0 we returned to collecting it as one field making use of the attributes and removing the need for an edit. However, this entails a back end modification to the database. To achieve the checkbox instead of the default radio button for the DK attribute we applied a layout other than the default for the special answer category template. (Fig 8.)

Fig. 8. Numeric with special attribute checkbox

Car Loans

For assistance with the survey, call 1-800-555-1212.

Your Loan

What was the dollar amount of your most recent car loan?
(Please enter numbers only, no commas or spaces.)

\$.00

Don't know

Previous Next

One question in the hardcopy was displayed in a table like layout but is actually a regular enumeration type question. This layout entailed the use of roles as well as multiple slightly modified templates. (Fig. 9.)

Fig. 9. Enumeration responses appearing as a table

Car Loans

For assistance with the survey, call 1-800-555-1212.

Suppose you were offered several possible lotteries, but you could choose only one. In each lottery, outcomes A and B are equally likely. Which one of these five lotteries would you prefer?

	Outcome A 50% chance	Outcome B 50% chance
<input type="radio"/> Lottery 1	Get \$42	Lose \$ 6
<input checked="" type="radio"/> Lottery 2	Get \$34	Lose \$ 2
<input type="radio"/> Lottery 3	Get \$26	Get \$ 2
<input type="radio"/> Lottery 4	Get \$18	Get \$ 6
<input type="radio"/> Lottery 5	Get \$10	Get \$10

Previous Next

The Demographic section of the questionnaire included many questions that were asked of both the respondent and/or their spouse/partner. For these we used a modified version of the abreast template. (Fig. 10.)

Fig. 10. Gender with spouse/partner



Car Loans

For assistance with the survey, call 1-800-555-1212.

Gender:

You	Spouse/ Partner
<input type="radio"/> Male <input type="radio"/> Female	<input type="radio"/> Male <input type="radio"/> Female

[Previous](#) [Next](#)

If the respondent stated that they were never married and had no partner, the screen only showed the question for the respondent. (Fig. 11.)

Fig. 11. Gender without spouse/partner



Car Loans

For assistance with the survey, call 1-800-555-1212.

Gender:

Male
 Female

[Previous](#) [Next](#)

Conclusion

Blaise 5 has a robust set of COTS templates that can be used as default layouts. However, there are circumstances where customized layouts are requested. In these cases, we can modify the Blaise layouts to achieve the desired results. When making modifications you should always be aware of 508/WCAG 2.0 requirements. In addition, thorough testing is recommended to avoid unintended consequences when changing templates.