

Training and Learning Opportunities using Blaise

Colin Setchfield (Office for National Statistics, UK)

1. Introduction

Though the option of providing a WinHelp-based Question-by-Question Help (Q-by-Q) is not new to Blaise, ONS has only recently introduced such a system, as one of the developments for its proposed Integrated Household Survey (IHS), formerly known as the Continuous Population Survey. The IHS is currently in its pilot stage, and due to be launched in 2008. This paper gives details both of this development, and of ONS's use of a Blaise questionnaire to test interviewers' learning as part of their pre-fieldwork training. Other international organisations have developed similar systems in the past, however, particularly with the Q-by-Q, ONS developed its versions independent of what had already then currently existed elsewhere.

1.1. Background to Integrated Household Survey

The IHS will bring together, into one Blaise instrument, four existing UK surveys: the Labour Force Survey (LFS), the Expenditure and Food Survey (EFS), the General Household Survey (GHS), and the National Statistics' Omnibus Survey. Fieldwork trials began in 2005 (Bumpstead, 2004).

Prior to this development work, ONS employed three mutually-exclusive field forces of interviewers: two of which each worked wholly on a single survey – one group working on the LFS, the other working on the International Passenger Survey. All other surveys (including the EFS, the GHS and the Omnibus Survey) were administered by the third group: the largest of the three – the General Field Force (GFF).

Each of these field forces had their own distinctive training and working practices; the combination of surveys forming the IHS involved two of these field forces: LFS and GFF. The IHS project therefore was not simply creating one questionnaire out of four, but rather extended to the whole of the survey and interviewing process. ONS's previous use of Blaise was reconsidered; this paper details how the use of Blaise was extended to meet the needs and challenges of creating a new model for training interviewers, assisting their learning, and providing an interactive reference resource both for briefings and within the interview situation. The paper looks both at the processes and some of the standards beginning to be developed before the systems are rolled out wider within ONS.

1.2. Existing training: pre IHS

Pre 2005, the initial training of interviewers at ONS generally followed the same principles as set out in the paper presented at the 3rd International Blaise Users Conference in 1998,¹ though with modifications in its detail².

LFS interviewers – only working on the one survey – received their survey briefing at the same time as undergoing their initial training following recruitment. GFF

¹ Goodger, Chris (1998): Training Interviewers in the Use of Blaise, Office of Population Censuses and Surveys, London, UK. Paper presented at 3rd International Blaise Users Conference 1995, Helsinki.

² Details of these were presented (by Chris Ash, Office for National Statistics, UK) in a training session at the 7th International Blaise Users Conference 2001, Washington D.C.

interviewers – working on a range of continuous, repeating and once-off ad hoc surveys – received separate survey briefings subsequent to their initial training but prior to first working on the specific survey. Most survey briefings were conducted on a face-to-face basis, though owing to its short timetable Omnibus received a postal briefing.

In addition to initial training and these face-to-face briefings, during the field period itself reference material was provided by extensive paper survey manuals supplemented by more targeted interviewer instructions within the Blaise instrument. These instructions were divided between (1) those displayed on screen below the question text (for brief information that needed to be readily available at the time of asking the question) and (2) those contained in a separate language specified in Blaise and called up by using a hotkey.

The first feasibility test of the IHS, in February 2005, adapted the existing training/learning systems to the requirements of the survey. The team developing the new survey, however, was keen to explore more interactive approaches and requested that these be developed in readiness for its second feasibility test in September 2005. The result was a Q-by-Q utilising a WinHelp facility, able to be activated both outside of and within Blaise, and a Blaise questionnaire designed to test the effectiveness of the interviewers' learning.

2. Q-by-Q: a Searchable Help facility

2.1. WinHelp and Authoring Tools

In 2000, Couper et al recommended that, ideally, on-line help should be provided for interviewers by using WinHelp. Their argument was mainly drawn from system operational considerations. The benefits of using this option, however, for many organisations, were outweighed by the complicated preparation of such files with its dependency on software not used or tested within the organisation. Some organisations, such as Statistics Canada, however, have successfully introduced a WinHelp on its surveys.

To ONS, the WinHelp option seemed best suited to meet the complex on-line help requirements of the IHS. Its main benefit was in reducing the learning burden for interviewers, particularly for those who were recently-appointed and had little or no exposure to the individual surveys that IHS comprised. By utilising it, help could be provided at the point when it was immediately required by the interviewer without having to carry around hefty paper documents for reference and without as much interruption to the interview situation. It provided not only immediate answers to issues raised while interviewing but also could be used as a stand-alone document acting as a detailed reference manual for study and at home. Additionally, there were also cost benefits in the reduction of printing and postage.

ONS, however, faced many of the same issues as experienced by other organisations, such as the Australian Bureau of Statistics (Wensing et al (2003)). ONS had explored WinHelp in the past but never used on any of its social surveys. On these previous occasions, the software RoboHelp from Macromedia had been used for the creation of HLP files. Though it was no longer actively used within the office, RoboHelp had become part of its standard software suite from these previous occasions. RoboHelp, therefore, became the preferred software to use, simply on the basis that it had been used in the past. Despite this, previous uses of the software were not recent. With no past users being available, the developers of the new on-line help consequently found themselves having to learn how to use the software unaided.

As it was part of the office's software suite, no comparative work between the functionality and usability of RoboHelp and other similar packages was undertaken. Nevertheless, without much experience in producing WinHelp files, a single source authoring tool (such as RoboHelp, Doc-To-Help or Microsoft Help Workshop: which was initially considered) would have been selected in any case, as these are better suited for importing existing interviewer instructions written in Microsoft Word and for producing printed copies should these be required.

2.2. Creating a House Style

Help document

The most straightforward approach would have been to take the existing paper instructions and simply to have processed the document as it existed, creating topics at all major chapters and sections within the document. This would have, however, simply created an on-screen version of what had previously been available in a paper format, without taking into account the different layout considerations of these two formats.

In order to provide comprehensible help screens, the following general rules were agreed.

- Where possible, help on screen should be contained within the display window, so that scroll bars are not necessary to view the full text.
- Help should be presented plainly and limited only to information that the interviewer would immediately need while conducting the interview.
- Additional detailed information (if required) should be provided in linked pages within the Help

Few of the existing instructions for individual questions within the questionnaire met the first two rules, and therefore work was required on how to divide them meaningfully for presentation in the Q-by-Q. The schema selected was that each question in the questionnaire could have up to a maximum of four associated help screens; these were named as follows (listed in order of priority/use).

- **Summary:** Advice most likely to be required by an interviewer in the live interview situation. Normally, this would relate to the help that interviewers previously saw on screen immediately below the question text. The text needs to be brief and to the point.
- **Question:** Providing details of the Field Text and types was felt useful if Help was being used outside of Blaise, such as in briefing or study. This screen is used currently also for linking to other definition and question screens, by creating jumps/hyperlinks to those screens using corresponding word(s) in the question text or answer categories. (This information might in the future be usefully extracted direct from the Blaise questionnaire, such as by using Delta.)
- **Instruction:** More detailed instruction directly related to the question to enable the interviewer to understand how to administer the question depending on the circumstances of the respondent(s). Normally, this would relate to the help previously contained in a separate language within Blaise.
- **Background:** This provides more general background to why the question is asked. It is not intended for information required to be known to answer the question itself, but rather should address the answer to an inquiry from the respondent such as "Why is this question being asked?" or "How will this

question be used by you?" or "What results have been shown by this question in the past?"

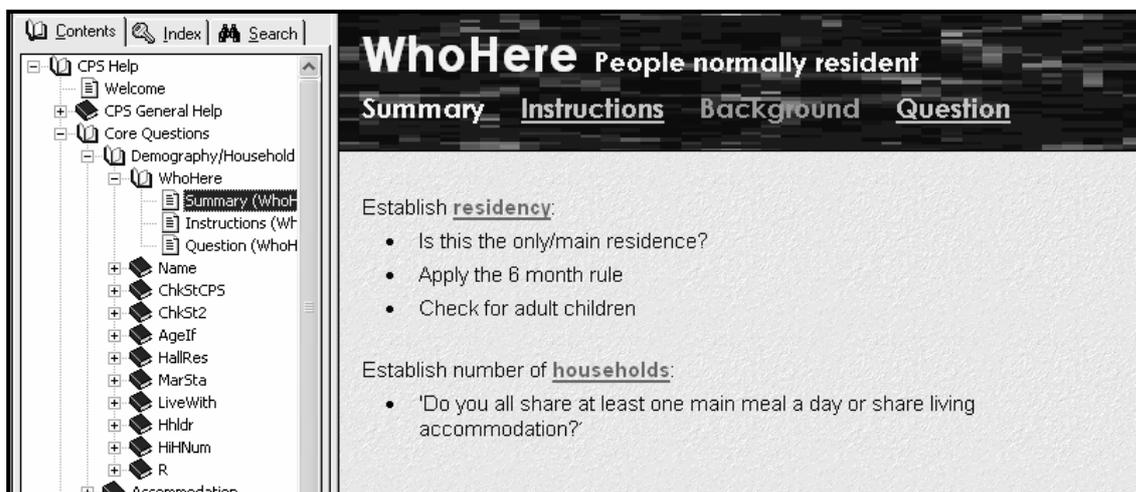
Within the Help project, each page was named first according to its Field Identifier followed by the relevant page type (e.g. the summary screen for the question on legal marital status was designated as 'MarSta summary').

It was acknowledged that some questions did not require all four options and others required no help screen at all. Additionally, this schema was not applied to pages for definitions of concepts and terms used within the questionnaire or for general help screens not directly related to individual questions. In both of these cases, each instance was given its own individual screen.

A template was created for authors of the new instructions, which set the following layout standards.

- Each screen was to be headed by a non-scrolling region comprising three lines. The first line displayed the Field Identifier and Field Description; the second line, listed the names of the four associated screens, coloured-coded according to their availability (light turquoise for the live screen, light blue – and underlined – for an available screen accessible using a jump, and 40% grey to indicate screens not available for the specified question), and the third line remaining blank for aesthetic effect.
- Fonts without serifs were preferred as being more suitable for people with visual impairment. The non-scrolling header was formatted in Century Gothic with the main body of the text in Arial. Standards were also defined for font sizes, with the main body of text set at Arial size 11 (Gatward, 2004).
- Font colours were selected to provide contrast to the screen background colour: with light colours used against the dark non-scrolling header, and dark colours against the light background used for the remainder of the screen.
- Jumps to help screens other than those specified in the header were linked to a word or combination of words within the body of the text. These were underlined (following the usual convention for hyperlinks) and formatted in bold text of a different colour to the rest of the text.

Figure 2.2.1: Example Q-by-Q Screen, showing the hierarchical structure of the Table of Contents, and the formatting of the non-scrolling header [dark pane] and the provision of jumps [underlined text].



Initially, icons were considered for indicating the four associated screens in the header, as the limited use of icons had proved successful within Blaise Screen and Layout Standards introduced at ONS in April 2004. Ultimately, however, these were dispensed with in favour of text, as the icons selected proved not to be intuitive, as there had not been any pre-existing text to provide a reference against.

Table of Contents

The Table of Contents was similarly structured to the actual help document, following the flow of questions throughout the questionnaire. All pages directly relating to a question were placed within a book with the name of that question, and these books were categorised first by topic, and then these topics by whether they formed part of the core questions of the IHS or part of one of the modules formed from the component questionnaires. All help screens not directly related to the questions asked were placed together in the contents in a general help category. Similarly, all definitions were also placed together into their own book.

2.3. Problems with approach

Though they addressed the needs of users, both the house style and the choice of authoring tool created a very labour-intensive production. The process was divided into two parts: (1) composing and collating of instructions into a single Word document, undertaken by the survey team, and (2) processing of the file through RoboHelp, undertaken by the team holding the product licence: in this case, this was the ONS Blaise Development Standards & Support Team.

Creating the files for the IHS took two months to produce. Much of this time was invested in the first part of the process, getting the document correctly formatted both by division of information and also layout. Some of this, particularly in reformatting and rewriting long-standing documents, can be seen in terms of short-term initial start-up costs. Similarly, the maintenance of the Word document containing the reformatted instructions for processing through RoboHelp should prove to be minimal.

There were disadvantages, however, in using a single-source authoring tool, such as RoboHelp, in that it is particularly demanding of system resources. With just under 1,400 pages in the IHS help Word document, the processing time increased with each page processed. Though it was possible to split the Word file so that each part could be processed concurrently by more than one person, the final project file with its contents could only be processed as a single document.

Since the successful introduction of Q-by-Q on IHS, it has begun to be rolled out on the individual surveys ahead of their incorporation into the IHS. Some of the work in preparing Q-by-Qs for these surveys has been reduced as relevant sections from within the IHS version have used or adapted. Despite this, however, the initial setting up of these Q-by-Qs, even with some of the work being already untaken, is still intensive. As previous papers have shown, this is one drawn-back of producing WinHelp Q-by-Qs, and cannot be mitigated without limiting the functionality and design of the finished product.

2.4. Functionality and Usability

Keystroke versus Mouse navigation

Until recently, at ONS, interviewer laptops had not been provided with an external mouse, and where a mouse panel was incorporated on the laptop model this was deactivated, as keystroke navigation was seen as giving greater control when interviewing within respondents' homes. Since 2005, such mouse panels have been

activated, allowing interviewers the option of navigating by keystroke or by mouse click.

WinHelp Q-by-Qs lend themselves more easily to mouse navigation. Keystrokes can navigate the user around the panes of the WinHelp screen, though these are less obvious, particularly in the order of rotation on the Index tab. ONS found it was, therefore, important that both methods of navigation – particularly that by keystroke – were clearly explained in supporting documents for the Q-by-Q.

Annotation and Bookmarks

Some consideration was given to the desirability of allowing interviewers to bookmark useful pages and to annotate pages within the Q-by-Q with their own notes and aide-memoires. There had been a concern that bookmarks might lead interviewers to an over-reliance on these pages and possibly may lead to them overlooking relevant information on other pages that may be circumvented. Similarly, there were concerns of an over-reliance on the shorthand annotations rather than the full instruction on the page.

Both, however, proved popular with interviewers, as they replicated the option of making notes on the previous paper documents, and also those training and monitoring the interviewers supported their use. The influence of annotation and bookmarks on adaptation of instructions still needs further investigation.

Contents, Index and Search tabs

When Q-by-Q was first looked at by ONS, it was simply in order to provide a quick searchable help facility within the questionnaire. As it developed, so the potential of it also being used as a manual or pre-fieldwork learning document came to be seen. Whereas the Search tab was originally seen as the main way interviewers would access and use the Q-by-Q, the Contents tab (in which the full document was listed categorised in logical order) came to be recognised as the interviewers' preferred way of using the Q-by-Q at home.

The Index tab (listing all pages in alphabetical order) seemed at first to have the least useful purpose. Though as pages were named by Field Identifier, this tab proved useful for interviewers using the Q-by-Q as a reference manual at home.

Jumps and mid-topic IDs

Jumps provided in the Q-by-Q only referenced other pages within the document. Jumps primarily existed within the headers to link the four associated pages relating to a single question. Other jumps were kept to a minimum, and were only provided when referencing another page not directly related to that question (such as a definition).

The option of using mid-topic IDs (jumps to a specific place on a given page) was investigated early on, though were not incorporated within the final version as overly-complex and potentially confusing for interviewers.

2.5. Feedback and success

Interviewers were specifically asked to provide feedback on the Q-by-Q, in order to evaluate its success. The overwhelming majority of comments from interviewers were positive and welcoming of the innovation. Typical comments included those listed below.

- “I was unsure whether this [an apprenticeship for ground working] would be strictly accurate but [the] help screen clarified this for me very easily.”
- “I used the help screens twice to check qualifications: very straightforward and easy to use.”
- “It was good to be able to confirm topics [on which] I had only partial/incomplete knowledge.”
- “Looked up definition of annualised hours contract: very useful. Respondent now aware of its meaning.”
- “Felt a little alien at first, but soon got used to its use.”
- “New [interviewer] recruits would benefit from this.”

The only negative comments highlighted limitations in the written instructions and miscoded jumps, enabling them to be amended for the subsequent pilot. Two interviewers also highlighted a limitation in using any help document in the interview situation – no matter how refined – as it could interrupt the flow of the interview. One summarised the concern as “Generally, anything which slows the interview down, even by seconds, is bad news as far as I’m concerned, unless the respondent is really relaxed about their time being interviewed.”

3. Electronic Learning Questionnaires

At the 2003 IBUC, Statistics Norway presented its work in using Blaise to create interactive training instruments. Some of these principles were incorporated into ONS’s work on Electronic Learning Questionnaires, which also designated a separate language within the Blaise Datamodel, in order to display images on screen and to play audio-recordings. The method for incorporating these features is detailed in Hilde Degerdal’s paper (2003) and was used by ONS.

The first version of the ELQ was produced for the second IHS feasibility test in August 2005. Sets of questions were prepared for each questionnaire combination within the IHS.

Figure 3.1: Example first version of ELQ: first showing the first loop in the array in which the interviewer would insert her answers; secondly showing the second loop of the array in which the score and the correct answers were automatically displayed.

ELQ1_Int	1	Cont	ELQ1_Int
SCORE1			SCORE1
E1_Q1	6		E1_Q1
E1_Q2	1	Jan06	E1_Q2
E1_Q3			E1_Q3
E1_Q4			E1_Q4
E1_Q5			E1_Q5
E1_Q6			E1_Q6

ELQ1_Int	1	Cont	ELQ1_Int	1	Cont
SCORE1			SCORE1	2	
E1_Q1	2		E1_Q1	8-2-6-5-3	
E1_Q2	1	Jan06	E1_Q2	5	Jan08
E1_Q3	3-5		E1_Q3	5-4	
E1_Q4	1		E1_Q4	3	
E1_Q5	1		E1_Q5	5-2-3-4-1	
E1_Q6	2	RepQtr	E1_Q6	2	RepQtr

The questionnaire was programmed to take the interviewer through the questions, once the question was answered the Field was changed from ASK to SHOW, each answer was scored, and then the interviewer was taken through the question a second time and provided with the correct answers. A similar method was used at the first IHS pilot in November 2005.

Multimedia functions were introduced at the second IHS pilot in February 2006. Doorstep scenarios were audio-recorded for playing at particular questions in the ELQ in order to test how interviewers would respond to situations, and images (such as excerpts from food diaries) were displayed on screen in order to test whether interviewers could correctly recognise errors contained on them. Problems were experienced with the size of the image (*.BMP) and sound (*.WAV) files, resulting in extended transmission times for downloading files to interviewers' laptops; alternative methods of transmission (electronic and postal) still need investigating.

Figure 3: Example of a Bitmap image file used in the ELQ

This is an extract from a respondent's diary. What information is missing?
Please enter your response in the text box below

3	Meals, snacks and drinks CONSUMED AWAY FROM HOME	Where bought
	Include canned drinks, crisps, sweets etc.	e.g. restaurant, c shop, workplac of study, cirt
	FULL ENGLISH BREAKFAST	CAFÉ

Additionally, the method of sealing an interviewer's answers on entry and displaying the correct answers once all the questions in a series were answered was replaced. This method had proved frustrating to interviewers who found that an accidental miskeying of an answer could not be changed or who had to wait till all questions were answered before learning why an early answer given was incorrect.

The revised method allowed the interviewer two attempts at the question. If the first attempt was incorrect, a 'hint' of how to locate the correct answer was displayed on screen by means of variable text and a second attempt was allowed. If the second attempt also proved incorrect, the correct answer would then also be displayed on screen by means of variable text.

4. Summary

Extending the previous use of Blaise within ONS beyond basic questionnaire provision has proved successful. Q-by-Q has been demonstrated as not only an effective way of providing help within the interview but also has been used as part of the training material prior to fieldwork and as a reference manual for use at home during the field period.

ONS's experience of producing a WinHelp Q-by-Q highlighted the same issues of complicated and time-exhausting production highlighted by other organisations. In ONS's experience, though, the benefits of providing a more interactive and searchable help facility as well as the comparative reduction in effort to maintain the Q-by-Q has outweighed the initial start-up costs. On the basis of its success on the IHS, other surveys within Blaise have begun to move towards similar Q-by-Qs for their questionnaires.

Similar to recent work on screen layouts, ONS found that it was important that certain standards should be agreed in order to maximise the usefulness of the Q-by-Q. Key considerations were packaging instructions into smaller less wordy divisions, and group instructions into common categories for easier and quicker reference by interviewers.

Pages within the Q-by-Q should be given useful names within the authoring tool in order to aid quick navigation to pertinent when it is needed. Each of the Contents, Index and Search tabs within the Q-by-Q proved useful depending on how the system was being used (at home or in the field, as training or for reference), and therefore it was important that naming conventions for information in each tab reflected that use.

Further work is needed on some aspects to ensure that familiar use of bookmarks and annotations does not limit the correct reliance on the full instructions.

Finally, ELQs proved a useful tool for evaluating the success of an interviewer's learning, though there continue to be outstanding technical issues on how to best transport the larger files to interviewers.

5. References

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Session 1.2: History of Blaise

Blaise – Alive and Kicking for 20 Years

Jelke Bethlehem & Lon Hofman

(Statistics Netherlands)

