

Appendix A: Cognitive testing of the Food Purchasing Module

1 Background

Cognitive interviewing is a technique used to study the way in which respondents interpret questions by observing how they mentally process and respond to the questions presented to them. It focuses on the cognitive processes that respondents use to answer questions, as well as observing how they complete questions. This allows us to identify and correct any misinterpretation or misunderstanding of questions, as well as the general ability of the respondent to recall the information and follow the layout of the questionnaire. This provides us with the degree of confidence we can have in the accuracy of responses in the main survey. The Food Purchasing Module (FPM) comprised two parts; a self completion questionnaire and a short interview and both parts were subject to cognitive interviewing.

2 Aim

To test the interpretation of the questions in the newly designed FPM and the ability of children to navigate the self completion questionnaire.

3 Methods

The FPM was split into two parts for the cognitive interviewing: the self completion questionnaire and the interview questions. The self completion questions were designed to be completed by children aged 8-16 years. The interview was designed to be conducted with the parent/guardian of primary school children, and with the secondary school children themselves. The cognitive interviews were carried out in March 2010.

The cognitive interviewing used a combination of 'think aloud' and probing techniques. In a face-to-face interview the child or parent, as appropriate, was asked to answer questions from the FPM and describe what they were thinking as they processed the question. The interviewer presented the questions in the way that it would be presented in the main survey. For example, for the self completion paper based questionnaire the children were asked to complete the questions themselves without help from the interviewer. For the questions in the interview, the interviewer asked the questions exactly as they would be asked in the survey interview. In addition, terms used in some of the questions were probed to determine whether the participant had the same meaning of the word as intended in the question. Observations were made to how they completed and navigated the self completion questionnaire (e.g. whether they read the instructions and if they followed the routing between questions).

The length of the interview was restricted to no longer than 30 minutes with each participant. Given the length of the self completion questionnaire it was split into two sections to limit the burden on each participant and to ensure that all questions were tested. In the case where a child completed the first part of the questionnaire sufficiently quickly they were also asked to continue with the second part of the questionnaire. Observations were recorded on their comprehension of the questions and how they actually went about filling it in as well as how they navigated the questionnaires. The interviews were audio recorded, with prior permission from the participant. The recordings were not transcribed but used to check the details of the interviews and the interviewer's observations.

Ethical approval was obtained from the University of Aberdeen's College of Life Sciences and Medicine Ethics Review Board (see Figure A1). Signed consent was obtained from all participants

before the study. In addition, permission to recruit children and their parents via schools in Aberdeen was obtained from the Head of Schools and Education Establishments for Aberdeen City Council.

Figure A1: Ethical approval granted from the College Ethics Research Board to carry out the cognitive testing of the FPM

Sent: 15 March 2010 17:53
 To: Masson, Dr Lindsey F.
 Subject: Application Cognitive Interviewing for a Questionnaire on Eating Habits on School Days (CERB/2010/2/498): Approved

Application No. CERB/2010/2/498
 Title: Cognitive Interviewing for a Questionnaire on Eating Habits on School Days Authors Lindsey Masson

Dear Lindsey Masson

Thank you for submitting the revisions to your application. These have now been considered by the administrator/myself and the reviewers, and we find them satisfactory. I am happy to grant a favourable ethical opinion for this project on behalf of the committee.

Kind regards,

Justin Williams
 Chair CERB

3.1 Participants

Five parents and 17 children completed the cognitive interview. The children were recruited predominantly through one primary school and one secondary school in Aberdeen, and a small number were recruited using a convenience sample. Due to the limited time available for completing the interviews, the parents of children in primary school were taken from a convenience sample. The numbers of participants completing the different components of the cognitive interviewing are given in Table A1.

Table A1: Cognitive interviewing sample

	Sample (n)				
	Parents of primary school children	Primary 3 (7-8y)	Primary 5-6 (9-10y)	Secondary 1-2 (12-13y)	Secondary 4 (15-16y)
Interview questions	5 mothers	-	-	2 (2 M)	1 (1 F)
Self completion questionnaire	-	6 (1 M, 5 F)	3 (2 M, 1 F)	5 (2 M, 3 F)	3 (2 F, 1 M)

M, male F, female

4 Observations from the interviews

In summary, the main outcomes from the cognitive interviews were as follows:

1. Primary and secondary school children found the routing in the self completion questions problematic.
2. Primary school children struggled to complete the self completion questionnaire and had particular problems with the attitudinal questions.
3. Answer categories for some of the attitudinal questions did not match well with the questions asked.
4. There were very few problems with the interview based questions.

Observations from the cognitive interviews are summarised in the sections below. Only the questions for which there were any problems or where any confusion was encountered have been described.

4.1 Interview questions answered by parents of primary school children

The parents were able to answer most of the interview questions and interpret them as intended. Clarification was needed for the question asking about who the child travelled to and from school with, and what section of the journey it applied to. The question was changed to focus on who the child is with when they pass places on the way to or from school that sold food or drink. Parents commented that the mode of transport to or from school could vary on different days of the week and so the question was changed to ask about the most common mode of transport, recognising that it may vary day to day depending on the activities of the parents and/or child. The testing confirmed that the question about the mode of transport on the way to and way home from school had to be kept separate.

4.2 Interview questions answered by secondary school children

There were no real problems found answering or following the questions other than minor wording issues. For example, in the question about the people with whom they travel to and from school, they described travelling with friends rather than 'other children'. No additional terms were used by the children to those on the showcard which was used for the places from which they purchased food or drink.

4.3 Self completion questionnaire answered by primary school children

Nearly all the children had problems navigating through the questionnaire and following the routing of the questions, and for some children this caused the majority of their problems with the SCQ. Only one (older) child followed the 'go to...' instructions. Some of the P3 children were not able to read some of the words in the questions or did not know what they meant. Some did not understand the instructions at the start of the questionnaire while others did not read them at all. Some children thought the instructions were a question and very few read the '*go to ...*' or the '*tick one box*' instruction. In general, the question asking about the type of food or drinks purchased outside of school created the most confusion among the children and they were unsure what food this related to in their day.

We probed the interpretation of some foods and in general they were understood. The term 'sweet pastries' was interpreted as intended, but 'packets of snacks' (which referred to savoury snacks) was interpreted by most children as a sweet snack. Most children were familiar with the terms 'diet' and 'non-diet' drinks, but were less familiar with the meaning of 'low sugar drinks'.

4.4 Self completion questionnaire answered by secondary school children

The majority of the children did not read the instructions at the start of the questionnaire and went straight to the first question. Most of them had some problems navigating through the questionnaire by following the routing of the questions. Most of them did not read or follow the 'go to...' instructions.

The majority of questions were interpreted as intended and understood, and only minor changes were required to the wording of some of the questions. They all appeared comfortable completing this type of questionnaire, as one child commented that they filled in this style of questionnaire routinely at school. Some children commented that some of the questions were repetitive.

Children in this age group understood the meaning of the food and drinks, as intended. As with the primary school children, packets of snacks tended to be interpreted as sweet foods. It was apparent that examples were required to illustrate the type of foods.

5 Changes made to the FPM

The observations from the interviews were discussed at a meeting between the researchers and Food Standards Agency Scotland on 29th March 2010. The following changes to the FPM were agreed at the meeting.

1. Primary school pupils would not be asked to complete the self completion questionnaire. The questions from the self completion questionnaire were incorporated into the CAPI and the attitudinal questions were removed altogether.
2. The questions relating to whether children pass places and buy food or drink on the way to or from school would be removed from the self completion questionnaire and incorporated in the CAPI. This would allow the interviewer to emphasise that it refers only to food or drink purchased by the child for themselves not food bought for them by other people, as well as helping the child navigate to the next appropriate question.
3. The '*go to next question*' routing instructions were removed as most children were doing this automatically, and routing that involved skipping questions was highlighted in a different colour to make it stand out. An introductory section was added for interviewers to read out to the child describing in more detail how the questionnaire should be filled out.
4. The wording of three of the food and drink categories was revised to:
 - Cereal bars, biscuits or cakes. This includes Danish pastries, doughnuts or iced buns.
 - Diet drinks, for example Diet Coke or Ribena light, or flavoured water
 - Crisps (rather than savoury snacks).