#### « Writing an interview guide or questionnaire »

This manual presents the main principles for writing an interview guide or questionnaire. The major difference in the writing of these two tools is in the formulation of the questions. For interview guides, the questions are open-ended so as to favour the user's expression. For the questionnaires, the questions are closed; the modalities of answers are known. We first present the interview guide and then the questionnaire.

#### Interview guide

Writing an interview guide is important to ensure the traceability of the questions asked during the interview. This writing work is necessary to ensure that the object of the study and the questions asked are appropriate. In other words, this writing allows the research questions to be refined before going to meet the user and to check if all the dimensions of the problem have been taken into account in the interview guide. If the interviews are conducted by different interviewers, the interview guide guarantees a certain 'reproducibility' of the interviews. During the interview, the user can sometimes approach the different elements of the guide without necessarily respecting the order. As the interview is semi-directive, it is up to the interviewer to conduct the interview without being a leader. It is important to let the subject express his or her ideas even if they are not in the order of the interview guide. However, the interviewer will ensure that all the points in the guide are covered.

Before starting to write an interview guide, it is necessary to have worked on the research questions. They will help to identify the points for action to be taken with users. (e.g. satisfaction, level of sport practice, etc.). These measures are qualitative measures in the way that users will express their representations in a specific time and context. We don’t use the term subjective measures, which from our point of view brings a negative judgement on what our users say. When they express themselves, their opinion is objective in a specific context.

To build the guide, a list of actions to be taken must be made (e.g. practices, satisfactions, expectations, needs, usability, efficiency, ... ) to ensure that no dimension is omitted.

In general, an interview guide begins with an introduction. Afterwards, a general question on the topic of the study is used to put the user comfortable with the subject. This allows the user to express himself/herself without constraint on the subject. Questions related to the core of the study are then asked. The interview guide may end with an opening question to gather new ideas.

In the introduction, the investigator introduces himself ou herself. He or she quickly explains the subject of the study, for whom and why the study is being done. In order to not influence the user, it’s necessary not to reveal all the points that will be measured. This introduction also contains the request for permission to record or film the interview.

The questions in an interview guide will favour the **spontaneous**. For this reason, the questions will allow for broad and open answers. If the user doesn’t bring up the subject spontaneously, more precise questions are asked, so as to **suggest** the problem (but not the answers).

* What technological devices do you use ? *(open-ended question that favours spontaneous answers)*.
* Why do you have an electronic diary? *(Open-ended question that suggests a priori the use of an electronic diary)*
* Do you have an electronic agenda? *(Closed-ended question wording not to be used)*

Never suggest answers in questions

* + How can this device be **useful** to you? *(do not use this wording: the user will find the device useful)*
  + What do you think of this device? *(preferred wording)*

During the writing process ask yourself the questions to identify how you would answer them.

The interview guide ends with socio-demographic questions. General questions about age, gender, occupation should be asked in order to qualify the panel of users interviewed. It can also be interesting to add socio-demographic questions related to the subject of study. (For example: place of residence, number of children, etc.).

The interview guide provides for all cases.

For example, in the case of a study on electronic diaries. The maintenance guide will mention the following remarks:

* INVESTIGATOR: If in the previous questions, the user spontaneously talks about his electronic diary
* You told me you use an electronic agenda. Can you tell me exactly what features you use?
* INVESTIGATOR: If in the previous questions, the user does not spontaneously talk about his electronic agenda
* Can you tell me if you're used to using an electronic agenda? And why?

The guide contains remarks that guide the investigator

* INVESTIGATOR: Write down all the objects mentioned by the person
* INVESTIGATOR: Ask the person to draw a diagram to represent the organisation of their home-work journeys.
* The interview guide can introduce the problem with findings. This is important when the subject matter is difficult or not well known to users.
  + For example, for a study on corporate information systems: "In the information systems (IS) of large organizations, a majority of the actors are not satisfied, especially the direct users who often notice a gap between their daily work and the computer applications they use. The successive evolutions of the IS don’t allow to meet the demand, which is rarely coherent and very changing. As a result, some people install applications for private use that end up forming a parallel IS that contains a considerable percentage of the information vital to the organization. »
* The interview guide may introduce definitions to remove ambiguities in the understanding of certain terms.
* For example, for a study on the use of social networks: "Today, we hear a lot about social networks. In our study, we're talking about networks like Facebook where everyone is free to post information about themselves and share it with others. Facebook users can also create groups of people to whom they will reserve certain types of information. »

#### Questionnaire

The organization of a questionnaire is identical to an interview guide. It begins with an introduction that quickly introduces the topic and objectives of the study. Then, the questions are organized from the most general to the most precise according to the subjects of the study. It ends with socio-demographic questions. These questions can be placed at the beginning of the questionnaire to filter the respondents (for example: if the study concerns people under 25 years of age the question is asked at the beginning of the questionnaire, only people in this age category will answer following).

Here we give a brief description of the different types of questions used to write a questionnaire (many books explain these points in detail).

* **Close-ended questions**: the answers to the questions are determined, it’s not possible to add any additional answer modalities.
* **Numerical questions**:e.g. How many cars do you have?
* **Semi-open questions**: these are pre-coded questions, with the other option that allows you to add response modalities. For example: What are your favourite sports: 1) Running, 2) Skiing, 3) Swimming, 4) Biking, 5) Other specify.
* **Open-ended questions**: the respondent answers freely, no a priori proposed answers. The treatment of these questions requires recoding or treatment by textual analysis of the data. The analysis of this type of answers is rich but requires a lot of work if the number of answers is high.
* **Single answer on a response scale**:
  + Likert scale. The respondent expresses his or her degree of agreement or disagreement with a statement. The scale usually contains five or seven answer choices that allow the degree of agreement to be nuanced. For example: Strongly disagree, Disagree, Neither disagree nor agree, Agree, Strongly agree. For odd scales, the central level allows no opinion to be expressed, while even scales (e.g., four modalities) are said to be "forced choice".
* **Multiple-choice questions:** 
  + Choice of several response modalities. For example, I use my mobile phone to 1- Call 2 - Send SMS 3- To keep my diary, 4- To wake up, 5- Other)
* **Reply with a request for filing:**
  + responses are ordered by preference or importance. For example: For the product XYZ you will rank the following 3 characteristics from what you consider its strongest to its weakest point: 1) Ease of use, 2) Reliability of use, 3) Its price.

#### What questions to ask when writing an interview or questionnaire

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| What are the research questions or hypotheses? | Write the research questions or hypotheses in order to identify measurement points to be taken during the interviews or questionnaires. |
| What are the measures to be taken? | List the various measures to be taken during interviews or questionnaires. (e.g. satisfaction, practices, expectations, agreement, etc.). |
| How can these measures be grouped in a logical order? | Make groups of measures to see how logically they will follow each other in the guide or questionnaire. |
| How to introduce the topic of the study? | Write the introduction that presents you, presents the topic of the study |
| What is the starting point for initiating the interview or questionnaire? | Identify the starting point for the study and write one or two situational questions. |
| What are the study questions? | Write the questions in groups of measures and order them to keep a logical and comprehensible sequence for the user. |
| What socio-demographic information is useful for your research question? | List the socio-demographic variables to qualify the participating users and socio-demographic variables **useful** for the study. |