

The first part of this chapter discusses interviews and questionnaires. As with observation, these techniques can be used in the requirements activity (as we described in Chapter 7), but in this chapter we focus on their use in evaluation. Another way of finding out how well a system is designed is by asking experts for their opinions. In the second part of the chapter, we look at the techniques of heuristic evaluation and cognitive walkthrough. These methods involve predicting how usable interfaces are (or are not). As in the previous chapter, we draw on the DECIDE framework from Chapter 11 to help structure studies that use these techniques.

The main aims of this chapter are to:

- Discuss when it is appropriate to use different types of interviews and questionnaires.
- Teach you the basics of questionnaire design.
- Describe how to do interviews, heuristic evaluation, and walkthroughs.
- Describe how to collect, analyze, and present data collected by the techniques mentioned above.
- Enable you to discuss the strengths and limitations of the techniques and select appropriate ones for your own use.

13.2 Asking users: interviews

Interviews can be thought of as a "conversation with a purpose" (Kahn and Cannell, 1957). How like an ordinary conversation the interview is depends on the questions to be answered and the type of interview method used. There are four main types of interviews: *open-ended or unstructured*, *structured*, *semi-structured*, and *group* interviews (Fontana and Frey, 1994). The first three types are named according to how much control the interviewer imposes on the conversation by following a *predetermined set of questions*. The fourth involves a small group guided by an interviewer who facilitates discussion of a specified set of topics.

The most appropriate approach to interviewing depends on the evaluation goals. The questions to be addressed, and the paradigm adopted. For example, if the goal is to gain first impressions about how users react to a new design idea, such as an interactive sign, then an informal, open-ended interview is often the best approach. But if the goal is to get feedback about a particular design feature, such as the layout of a new web browser, then a structured interview or questionnaire is often better. This is because the goals and questions are more specific in the latter case.

13.2.1 Developing questions and planning an interview

When developing interview questions, plan to keep them short, straightforward and avoid asking too many. Here are some guidelines (Robson, 1993):

- Avoid long questions because they are difficult to remember.
- Avoid compound sentences by splitting them into two separate questions. For example, instead of, "How do you like this cell phone compared with

previous ones that you have owned?" Say, "How do you like this cell phone? Have you owned other cell phones? If so, How did you like it?" This is easier for the interviewee and easier for the interviewer to record.

- Avoid using jargon and language that the interviewee may not understand but would be too embarrassed to admit.
- Avoid leading questions such as, "Why do you like this style of interaction?" If used on its own, this question assumes that the person did like it.
- Be alert to unconscious biases. Be sensitive to your own biases and strive for neutrality in your questions.

Asking colleagues to review the questions and running a pilot study will help to identify problems in advance and gain practice in interviewing.

When planning an interview, think about interviewees who may be reluctant to answer questions or who are in a hurry. They are doing you a favor, so try to make it as pleasant for them as possible and try to make the interviewee feel comfortable. Including the following steps will help you to achieve this (Robson, 1993):

1. An *Introduction* in which the interviewer introduces himself and explains why he is doing the interview, reassures interviewees about the ethical issues, and asks if they mind being recorded, if appropriate. This should be exactly the same for each interviewee.
2. A *warmup* session where easy, non-threatening questions come first. These may include questions about demographic information, such as "Where do you live?"
3. A *main* session in which the questions are presented in a logical sequence, with the more difficult ones at the end.
4. A *cool-off period* consisting of a few easy questions (to defuse tension if it has arisen).
5. A *closing* session in which the interviewer thanks the interviewee and switches off the recorder or puts her notebook away, signaling that the interview has ended.

The golden rule is to be professional. Here is some further advice about conducting interviews (Robson, 1993):

- Dress in a similar way to the interviewees if possible. If in doubt, dress neatly and avoid standing out.
- Prepare an informed consent form and ask the interviewee to sign it.
- If you are recording the interview, which is advisable, make sure your equipment works in advance and you know how to use it.
- Record answers exactly; do not make cosmetic adjustments, correct, or change answers in any way.

13.2.2 Unstructured interviews

Open-ended or unstructured interviews are at one end of a spectrum of how much control the interviewer has on the process. They are more like conversations that focus on a particular topic and may often go into considerable depth. Questions posed by the interviewer are *open*, meaning that the format and content of answers is not predetermined. The interviewee is free to answer as fully or as briefly as she wishes. Both interviewer and interviewee can steer the interview. Thus one of the skills necessary for this type of interviewing is to make sure that answers to relevant questions are obtained. It is therefore advisable to be organized and have a plan of the main things to be covered. Going in without an agenda to accomplish a goal is *not* advisable, and should not to be confused with being open to new information and ideas.

A benefit of unstructured interviews is that they generate rich data. Interviewees often mention things that the interviewer may not have considered and can be further explored. But this benefit often comes at a cost. A lot of unstructured data is generated, which can be very time-consuming and difficult to analyze. It is also impossible to replicate the process, since each interview takes on its own format. Typically in evaluation, there is no attempt to analyze these interviews in detail. Instead, the evaluator makes notes or records the session and then goes back later to note the main issues of interest.

The main points to remember when conducting an unstructured interview are:

- Make sure you have an interview agenda that supports the study goals and questions (identified through the DECIDE framework).
- Be prepared to follow new lines of enquiry that contribute to your agenda.
- Pay attention to ethical issues, particularly the need to get informed consent.
- Work on gaining acceptance and putting the interviewees at ease. For example, dress as they do and take the time to learn about their world.
- Respond with sympathy if appropriate, but be careful not to put ideas into the heads of respondents.
- Always indicate to the interviewee the beginning and end of the interview session.
- Start to order and analyze your data as soon as possible after the interview.

ACTIVITY 13.1

Ananova is a virtual news reporter created by the British Press Association on the website www.ananova.com, which is similar to the picture in Figure 13.1. Viewers who wish to hear Ananova report the news must select from the menu beneath her picture and must have downloaded software that enables them to receive streaming video. Those who wish to read text may do so.

The idea is that Ananova is a life-like, i.e., an 'anthropomorphic' news presenter. She is designed to speak, move her lips, and blink, and she has some human facial expressions. She reads news edited from news reports. Ananova's face, her voice tone, her hair, in fact everything about her was tested with users before the site was launched so that she would appeal to as many users as possible. She is fashionable and looks as though she is in her twenties or

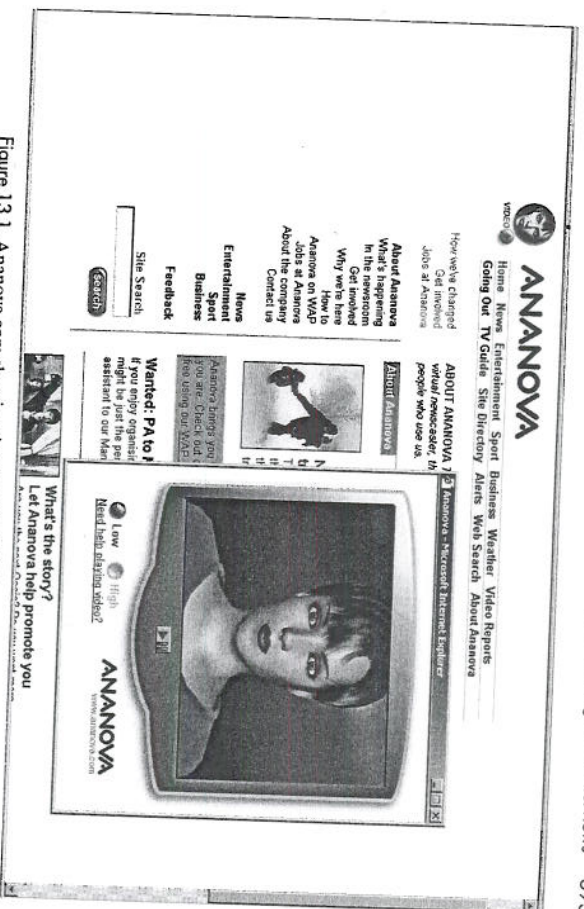


Figure 13.1 Ananova.com showing Ananova, a virtual news presenter.

early thirties—presumably the age that market researchers determined fits the profile of the majority of users—and she is also designed to appeal to older people too. To see Ananova in action, go to the website (www.ananova.com) and follow the directions for downloading the software. Alternatively you can do the activity by just looking at the figure and thinking about the questions.

- Suggest unstructured interview questions that seek opinions about whether Ananova improves the quality of the news service.
 - Suggest ways of collecting the interview data.
 - Identify practical and ethical issues that need to be considered.
- Possible questions include: Do you think Ananova reading the news is good? Is it better than having to read it yourself from a news bulletin? In what ways does having Ananova read the news influence your satisfaction with the service?
 - Taking notes might be cumbersome and distracting to the interviewee, and it would be easy to miss important points. An alternative is to audio record the session. Video recording is not needed as it isn't necessary to see the interviewee. However, it would be useful to have a camera at hand to take shots of the interface in case the interviewee wanted to refer to aspects of Ananova.
 - The obvious practical issues are obtaining a cassette recorder, finding participants, scheduling times for the interviews and finding a quiet place to conduct them. Having

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a computer available for the interviewee to refer to is important. The ethical issues include telling the interviewees why you are doing the interviews and what you will do with the information, and guaranteeing them anonymity. An informed consent form may be needed.

13.2.3 Structured interviews

Structured interviews pose predetermined questions similar to those in a questionnaire (see Section 13.3). Structured interviews are useful when the study's goals are clearly understood and specific questions can be identified. To work best, the questions need to be short and clearly worded. Responses may involve selecting from a set of options that are read aloud or presented on paper. The questions should be refined by asking another evaluator to review them and by running a small pilot study. Typically the questions are *closed*, which means that they require a precise answer. The same questions are used with each participant so the study is standardized.

13.2.4 Semi-structured interviews

Semi-structured interviews combine features of structured and unstructured interviews and use both closed and open questions. For consistency the interviewer has a basic script for guidance, so that the same topics are covered with each interviewee. The interviewer starts with preplanned questions and then probes the interviewee to say more until no new relevant information is forthcoming. For example:

Which websites do you visit most frequently? <Answer> Why? <Answer mentions several but stresses that she prefers hottestmusic.com> And why do you like it?
<Answer> Tell me more about x? <Silence, followed by an answer> Anything else?
<Answer> Thanks. Are there any other reasons that you haven't mentioned?

It is important not to preempt an answer by phrasing a question to suggest that a particular answer is expected. For example, "You seemed to like this use of color..." assumes that this is the case and will probably encourage the interviewee to answer that this is true so as not to offend the interviewer. Children are particularly prone to behave in this way. The body language of the interviewer, for example, whether she is smiling, scowling, looking disapproving, etc., can have a strong influence.

Also the interviewer needs to accommodate silences and not to move on too quickly. Give the person time to speak. *Probes* are a device for getting more information, especially neutral probes such as, "Do you want to tell me anything else?" You may also *prompt* the person to help her along. For example, if the interviewee is talking about a computer interface but has forgotten the name of a key menu item, you might want to remind her so that the interview can proceed productively. However, semi-structured interviews are intended to be broadly replicable, so probing and prompting should aim to help the interview along without introducing bias.

ACTIVITY 13.2

Write a semi-structured interview script to evaluate whether receiving news from Ananova is appealing and whether Ananova's presentation is realistic. Show two of your peers the

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Ananova.com website or Figure 13.1. Then ask them to comment on your interview script. Refine the questions based on their comments.

You can use questions that have a predetermined set of answer choices. These work well for fast interviews when the range of answers is known, as in the airport studies where people explore the range of opinions.

Some questions that you might ask include:

- Have you seen Ananova before?
- Would you like to receive news from Ananova?
- Why?
- In your opinion, does Ananova look like a real person?

Some of the questions in Exercise 13.2 have a predetermined range of answers, such as "yes," "no," "maybe." Others, such as the one about interviewees' attitudes, do not have an easily predicted range of responses. But it would help us in collecting answers if we list possible responses together with boxes that can just be checked (i.e., ticked). Here's how we could convert the questions from Activity 13.2.

- Have you seen Ananova before? (Explore previous knowledge)
Interviewer checks box ☐ Yes ☐ No ☐ Don't remember/know
- Would you like to receive news from Ananova? (Explore initial reaction, then explore the response)
Interviewer checks box ☐ Yes ☐ No ☐ Don't know
- Why?
If response is "Yes" or "No," interviewer says, "Which of the following statements represents your feelings best?"
For "Yes," Interviewer checks the box
☐ I don't like typing
☐ This is fun/cool
☐ I've never seen a system like this before
☐ It's going to be the way of the future
☐ Another reason (Interviewer notes the reason)
For "No," Interviewer checks the box
☐ I don't like speech systems
☐ I don't like systems that pretend to be people
☐ It's faster to read
☐ I can't control the pace of presentation
☐ I can't be bothered to download the software
☐ Another reason (Interviewer notes the reason)
- In your opinion, does Ananova look like a real person?
Interviewer checks box
☐ Yes, she looks like a real person
☐ No, she doesn't look like a real person

As you can probably guess, there are problems deciding on the range of possible answers. Maybe you thought of other ones. In order to get a good range of answers for the second question, a large number of people would have to be interviewed before the questionnaire is constructed to identify all the possible answers and then those could be used to determine what should be offered.

ACTIVITY 13.3

Write three or four semi-structured interview questions to find out if Ananova is popular with your friends. Make the questions general.

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Here are some suggestions:

- (a) Would you listen to the news using Ananova?
If yes, then ask, why?
If no, then ask, why not?
- (b) Is Ananova's appearance attractive to you?
If yes, then say, Tell me more, what did you like?
If no, then say, What don't you find attractive?
- (c) Is there anything else you want to say about Ananova?

ACTIVITY 13.4

Prepare the full interview script to evaluate Ananova, including a description of why you are doing the interview, and an informed consent form, and the exact questions. Use the DE-CIDE framework for guidance. Practice the interview on your own, audiotape yourself, and then listen to it and review your performance. Then interview two peers and be reflective. What did you learn from the experience?

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You probably found it harder than you thought to interview smoothly and consistently. Did you notice an improvement when you did the second interview? Were some of the questions poorly worded. Piloting your interview often reveals poor or ambiguous questions that you then have a chance to refine before holding the first proper interview.

13.2.5 Group interviews

One form of group interview is the focus group that is frequently used in marketing, political campaigning, and social sciences research. Normally three to 10 people are involved. Participants are selected to provide a representative sample of typical users, they normally share certain characteristics. For example, in an evaluation of a university website, a group of administrators, faculty, and students may be called to form three separate focus groups because they use the web for different purposes.

The benefit of a focus group is that it allows diverse or sensitive issues to be raised that would otherwise be missed. The method assumes that individuals develop opinions within a social context by talking with others. Often questions posed to focus groups seem deceptively simple but the idea is to enable people to put forward their own opinions in a supportive environment. A preset agenda is developed to guide the discussion but there is sufficient flexibility for a facilitator to

follow unanticipated issues as they are raised. The facilitator guides and prompts discussion and skillfully encourages quiet people to participate and stops verbose ones from dominating the discussion. The discussion is usually recorded for later analysis in which participants may be invited to explain their comments more fully. Focus groups appear to have high validity because the method is readily understood and findings appear believable (Marshall and Rossman, 1999). Focus groups are also attractive because they are low-cost, provide quick results, and can easily be scaled to gather more data. Disadvantages are that the facilitator needs to be skilful so that time is not wasted on irrelevant issues. It can also be difficult to get people together in a suitable location. Getting time with any interviewees can be difficult, but the problem is compounded with focus groups because of the number of people involved. For example, in a study to evaluate a university website the evaluators did not expect that getting participants would be a problem. However, the study was scheduled near the end of a semester when students had to hand in their work, so strong incentives were needed to entice the students to participate in the study. It took an increase in the participation fee and a good lunch to convince students to participate.

13.2.6 Other sources of interview-like feedback

Telephone interviews are a good way of interviewing people with whom you cannot meet. You cannot see body language, but apart from this telephone interviews have much in common with face-to-face interviews.

Online interviews, using either asynchronous communication as in email or synchronous communication as in chat, can also be used. For interviews that involve sensitive issues, answering questions anonymously may be preferable to because of geographical distance, video-conferencing systems can be used (but remember the drawbacks discussed in Chapter 4). Feedback about a product can also be obtained from customer help lines, consumer groups, and online customer communities that provide help and support.

At various stages of design, it is useful to get quick feedback from a few users. These short interviews are often more like conversations in which users are asked their opinions. Retrospective interviews can be done when doing field studies to check with participants that the interviewer has correctly understood what was happening.

DILEMMA

What They Say and What They Do!

What users say isn't always what they do. People sometimes give the answers that they think show them in the best light, or they may just forget what happened or how long they spent on a particular activity.

So, can evaluators believe all the responses they get? Are the respondents giving "the truth" or are they simply giving the answers that they think the evaluator wants to hear?

It isn't possible to avoid this behavior, but it is important to be aware of it and to reduce such biases by getting a large number of participants or by using a combination of techniques. Questions that suggest particular responses should also be avoided.

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