# Improving mobile phone instruction manuals for seniors

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*C. Bruder, H. Wandke, L. Blessing, Improving mobile phone instruction manuals for seniors. Gerontechnology 2006; 5(1):51-55.* This is a preliminary report of an interview study with 20 senior mobile phone users, focusing on how senior users of a mobile phone use and evaluate instruction manuals. Often senior users have less experience with multifunctional electronic devices. Therefore, an important issue is how they learn to handle mobile phones. The results show that nearly all participants read manuals carefully, but often do not understand the instructions. After reporting the criticisms by participants, their demands from manuals are presented. Finally, ideas for improving the process of familiarization with new multifunctional devices are introduced.

**Keywords: instruction manual, mobile phone, interview study**

Delivered in the same package, a technical product and its instruction manual form a functional unit. Instruction manuals allow systematic access to handling a multifunctional electronic device. In improving the interaction between users and multifunctional devices, both product and instruction manual have to be kept in mind.

Users without much experience with such devices tend to read the manual to obtain an insight into possible functions, and to learn how to handle their device. In general, seniors are often less experienced in handling multifunctional electronic devices, such as mobile phones[1]. Therefore, for seniors, the instruction manual is one of the most important means of access to electronic products.

There is a growing community of seniors who use mobile phones. Mastering the interaction with their mobile phone is a precondition to using the device satisfactorily and self-confidently. A descriptive study was conducted to get a first impression of why, in which situations, and when seniors read the instruction manual (*Figure 1*).

## Sample and interview

20 senior mobile phone users aged between 58 and 80 (mean 68) were interviewed. They were recruited from a test person database of the Technical University Berlin, by posters, or asked

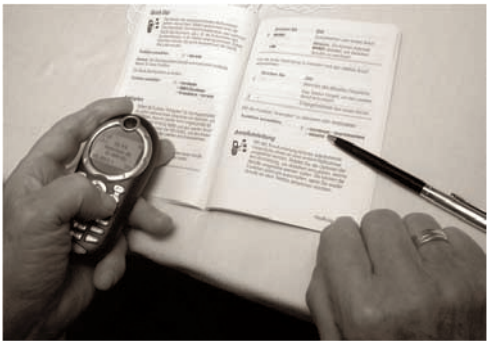

*Figure 1. A senior using a manual*

by colleagues. 9 Out of 20 participants did not have any experience in handling computer programs, such as word processors or internet browsers. The experience of the other participants varied a lot; some had only used computers a few times. The participants in average had more experience in internet and computers than the average German senior[2]. The interviewed seniors had owned mobile phones for a period varying from half a year to ten years.

At the beginning of the interview, the participants were asked where, when, and why they bought their mobile phones. Furthermore, they reported on their approach to becoming acquainted with their first, as well as their current mobile phone, and whether they had read the instruction manual. They were also asked what kind of experiences they had had with instruction manuals.

After the interview, the participants had to perform some tasks with mobile phones. The interviewed seniors were asked to solve four tasks with their own mobile phone. For example, they had to read a missed call from the record list and enter the interviewer's number in the phonebook of their mobile phone. A score was defined to quantify the performance of the participants. The score ranges from one (low performance) to five (high performance) and is calculated on the basis of performed steps and correctly performed tasks. Based on this score, interview data and user performance were correlated in order to get an impression of the participants' performance in handling mobile phones.

## Results

The results show that nearly all participants read manuals. This is different for younger adult users, who often try to use products without reading anything[3]. Before using the mobile phone, 16 out of 20 interviewed seniors read the manual. The other four users had got their mobile phones as a present, without an instruction manual, and had got personal instructions from a friend. Different purposes for reading the instruction manual exist, as presented in the next section.

### Purposes for reading manuals

The participants reported different purposes for reading their phone manual: (i) to become acquainted with the unfamiliar device (14 out of the 20 seniors), (ii) to get help with a problem or a mistake (14), (iii) to remember forgotten operations or functions (14), and (iv) to learn new functions in their free time (7).

*Table 1. Strategies becoming familiar with new phones depend on users' experience and performance (n = 20)*

| Strategies | Mentioned (n) | Computer use (n) | Performance (score) |
|---|---|---|---|
| Read manual and practice it | 9 | 5 | 5 (high) |
| First try it without help, then manual | 5 | 4 | 5 (high) |
| Briefed by friend | 4 | 2 | 3,5 (medium) |
| Shop assistant explained, then manual | 2 | 0 | 3 (medium) |

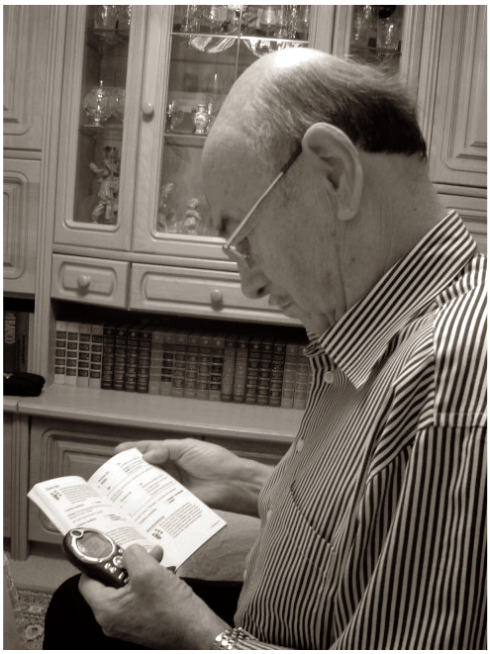

*Figure 2. Participant uses manual to remember forgotten operations*

To become acquainted with an unfamiliar device (*Table 1*), the main strategy is to read the manual (9). This is done to become familiar with handling their mobile phone and its available functions.

As alternatives to reading the manual, participants tried to use the phone without any help (5), were briefed by friends (4) or got help from the shop assistant (2). The preferred strategy is correlated with experience with computers, and performance in handling them. Probably, only experienced senior users read the manual. The inexperienced seem to refuse the manual because they expect that they would not understand it.

Furthermore, participants use different strategies when problems or mistakes occur: 13 of the participants try to find hints in the manual, four try to solve the problem without help, and three ask friends or call the service centre. Some participants (8) are used to keeping the manual near the mobile phone. These participants consult the manual if they forget how to deal with a function (*Figure 2*). Some of the participants take notes as a memory-aid, which helps them to remember.

**Deficits of instruction manuals**

Nearly all participants read the instruction manual (16). They use it for different purposes and with different strategies. But, what do they think about these manuals? Four of the participants are satisfied with manuals, 16 criticized them. As presented in Table 2, there is an evident correlation between participants' satisfaction with mobile phone manuals, their computer experience, and their performance in handling their mobile phone. Probably, only experienced users are satisfied with manuals whereas less experienced users are not, because manuals do not address their needs.

Many participants said that it is exhausting and time-consuming to understand the manuals of multifunctional devices. They criticized the following aspects: (i) unknown technical terms, such as WAP, menu, connectivity (9), (ii) incomplete and incomprehensible explanations of what to do (9), (iii) too many technical details (5), (iv) insufficient orientation to

*Table 2: Participants' satisfaction with manuals depends on their experience and performance (n = 20)*

| Satisfaction | Frequency (n) | Computer use (n) | Performance (score) |
|---|---|---|---|
| Satisfied | 4 | 4 | 4,8 (vey high) |
| Unsatisfied at first, later satisfied | 5 | 4 | 4,2 (high) |
| Unsatisfied | 11 | 3 | 2,3 (low) |

users' perspective (4), (v) unstructured, because basic and special functions are explained together (4), and (vi) long and complicated sentences (3).

As seen above, the participants criticized many aspects. The next section provides an insight into senior users' ideas for better manuals.

**Seniors' demands for manuals**

Many participants mentioned their demands for good manuals. They made the following statements for improving them: (i) complete and step-by-step description on what to do for every basic function (12), (ii) short introduction for novice users (6), (iii) pictures and diagrams (4), (iv) explanation of every action with corresponding changes in display (4), (v) explanation of basic and special functions separately (4), (vi) use of the same starting point for all explanations (3), and (vii) explanations of displayed symbols (2).

It is important to note that the interviewer did not ask the participants for their demands and ideas on manuals. The participants mentioned all these statements without being asked.

## Discussion and conclusions

Summarizing the participants' statements about instruction manuals, a complete step-by-step explanation of required actions is needed. Explanations of special functions and technical details are confusing to them. Therefore, a chapter providing an easy introduction to basic functions is necessary. This is in line with Morell et al.[4], who found that simple step-by-step instruction facilitated seniors' skill acquisition better than expanded instructions. While reading manuals, many senior users practise every function extensively. In doing so, they prefer task-oriented descriptions augmented by feedback from the display.

The participants suggest that pictures like comics, illustrating buttons that have to be pushed and are associated with changes in the display, might help. Ogozalek[5] suggests that video-based training is a better way to help senior users while practising than written instruction manuals. Video-based training offers environmental support for the learner by explicitly demonstrating the task sequence and visualizing actions[6]. Another way is e-learning as interactive training; feedback is given to guide the attention to important aspects, and to support understanding the link between actions, changes in display, and aimed functions.

There seems to be a gap between the senior users' needs and the intention of the manuals' developers. Senior users need introductions to the components and task orientated instructions about how to use them. Manual developers have to protect manufacturers against insurance and law claims and furthermore, write from a technical point of view. Today's mobile phone manuals presume a lot of user's previous knowledge and are not written to support inexperienced users.

Seniors can help to define basic functions and make the explanations in the manuals more understandable[7]. The interview results and the participants' suggestions should be integrated in the design process, as done in the research project SENTHA (Everyday Technology for Senior Households) where seniors participated in various steps of the development process[8].

The aim of further research is to develop and evaluate design principles for senior friendly instructions. This is done to support manufactures to design usable manuals. Furthermore, research is intended to give users an interactive e-learning application which users can use

hand-in-hand with manuals to enhance their understanding of the device.

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