Children as Co-Researchers: More than Just a Role-Play

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ABSTRACT

Co-research is a method that engages participants in contextual user research by giving them the role of researcher. This method aids to capture their input in the fuzzy front end of the design process. A previous study [5] showed that children can act as co-researchers to gather contextual knowledge. In that study 20 children aged 9-12 interviewed their peers or their grandparents. One of the findings from that study was that the professional role of the co-researcher is a motivating and influencing factor, which we want to enhance in a follow-up study. Another finding was that the way of reporting (audio-recording and notes in a research booklet) could be improved.

In the present study 28 children (aged 9/10) acted as co-researchers by interviewing their peers. The goal of this study was to enhance the professional role of the children and to experiment with different recording devices, in order to explore the methodological consequences.

Using co-research gives an opportunity to go to places that are less accessible to lead researchers, like the child's room, and looking at it through the children's perspective. Making a choice between audio recorders and video cameras depends on the research set up and topic, in this case video added a lot of context since we were interested in personal belongings and a tour through their bedroom. It was found that giving mobile phones to coresearchers in order to record their interviews is not advisable; the quality of the audio is not that good and switching between making pictures and explaining them on audio is hard for them.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User-centered design

General Terms: Design, Human Factors

Keywords: Co-research, contextual user research, design roles, children

1. INTRODUCTION

1.1 Children are experts

PD (Participatory Design) attempts to actively involve all stakeholders in the design process. Users are important stakeholders, because they are the "experts of their experience" [4]. Just as adults, children have their own wishes and needs and it is important to keep those in mind when designing technology aimed at children. Children's experiences and thoughts are valuable input in the design process to ensure the end product fits their needs. Therefore, we need to involve them from the start of the design process. Techniques for that, used in the field of Child Computer Interaction are for example: Cooperative Inquiry [1], Cultural probes [2] and Contextmapping [4]. This paper focuses on co-research, a method to give children the role of researcher to conduct research with their peers or key-persons in order to generate contextual knowledge [5].

1.2 Co-research

The model shown in Figure 1 explains the co-research principle [5]. It displays from left to right: a designer, a researcher, a collaborator (or co-researchers) and his/her participant(s). The collaborator can be from the same target group as the participants (as in figure 1), or a key-person who is not part of the intended target group but knows somebody who is (for example a child is the key-person to his/her grandparent who belongs to an elderly target group). The main difference between these situations is that the collaborators from the same target group can reflect on the other as well as on themselves, in contrast to the key-persons who only reflect on the data from the participants.

Figure 1. Co-research model [5]

Similar co-research methods are used in other fields of research, like social and political sciences, to empower people under study by giving them a voice in research that is influencing their lives [3].

The translation of co-research to the field of contextual design research can be of added value because, next to empowerment this method can be used to gather different kinds of insights and motivate and train collaborators [5]:

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- Co-researchers can use their network to get access to peers or key-persons.
- Conversations between peers generate different content than conversations between a participant and a researcher.
- By listening to others and hearing different people talk about the same subject, the co-researchers reflect on their own experiences and develop a grounded opinion of their own.

1.3 Previous study

In a previous study [5], children got the role of co-researchers to investigate intergenerational contact and opportunities to design technology that could make children and elderly become physically active together. In that study, 20 children aged 9-12 acted as co-researchers by interviewing their grandparents or peers. The project consisted of 4 meetings with groups of 4-5 children and a lead researcher. In the first meeting the children were introduced to the project and thought of questions to ask in the interviews they were going to perform. These questions were used in the development of a research booklet for the children to guide them in performing their interviews.

The second meeting was a training session in which they used the research booklet to practice interviewing on each other. After the training each child conducted interviews with 2 grandparents or peers. Subsequently, the groups of children came together for a feedback session in which they reported on their interview and made personas together. The final step was a creative session with the whole class to think of new ideas, building on the insights they gathered in the interviews.

This study showed that listening to children's conversations, without the direct interference of adults, gives an inspiring glimpse into their world. Besides that, the children developed useful skills, like asking questions, empathizing with and listening to others [5].

1.4 Recommendations

The professional role of the co-researchers turned out to be an important factor of the co-research method. The co-researchers take their role very serious, which makes them feel important and responsible. One aspect of this professional feeling is the audio recorder, a device most of the children never used before, and the fact that they can keep it for a week. It is interesting to investigate if other factors can increase the feeling of professionalism as well.

The audio recorder only captures sound, which already gives a lot of context in the form of conversations, whisperings and background noises, but video might give an even richer output since it adds image. Audio recorders are not at hand for every researcher. Therefore, experimenting with mobile phones, which researchers and participants more commonly own, is interesting. Also the combination of audio recording, photography and video, which a mobile phone can make, might give added value.

2. STUDY

The main goal of this co-research case study was to enhance the professional role of the children and to experiment with recording devices to see the methodological consequences. This study was part of the ProFit project, funded by the European Union under the Interreg IVB North West Europe program and undertaken in cooperation with the Delft City Council to improve opportunities for children's outdoor play and exercise. The topic of this case study was to investigate opportunities to use technology in order to combine children's own possessions and public playground equipment. The gathered user insights will be used as the starting

point of a design assignment for students in order to design new playground technologies and equipment for children. However, this paper will report about methodological findings and will not go into detail about the topic.

In order to test the methodological consequences of the recommendations that derived from the mentioned case study, a new study was set-up in the following manner:

- Three different conditions were created, in which the children used different kinds of recording devices: audio recorders (just as in the previous case), video cameras, and mobile phones to record audio and make pictures. Some children in the previous study complained about writing in the research booklets because this slows down the interview. By adding photos and video the emphasis is no longer on writing. However, the co-researchers still need to write down keywords in their research booklets, in order to remember the interviews and being able to reflect on their findings in the feedback session a couple of days after conducting the interviews.
- More professional tools are introduced: the video cameras, mobile phones, tripods and research bags. The project is concluded with handing out research certificates, stating that the children successfully participated as co-researchers. Next to that, the overall attitude of the lead researchers towards the children is more professional and always focused on the value of their expertise.

The creative session at the end of the project is removed from the procedure since the main goal for the children is to do the interviews and to get to know and understand their peers.

2.1 Procedure

One class from a primary school in Delft participated in this study. This class consisted of 28 children aged 9-10 years. As in the original study, this project started with a kick-off. The whole class got a presentation about the project and engaged in a discussion about what research is. The main message towards the children was that they are experts and that we need them to gather important data. We wanted them to feel important and responsible. The children asked a lot of questions and seemed interested and eager to start.

After the group discussion their teacher divided the children in 5 groups of 5 or 6 children. Two lead researchers each guided their own groups. The goal of this first meeting was to get familiar with the research subject (borrowing, lending and using personal belongings together) and to think of questions to put in the research booklet. We started with an icebreaker in which they had to guess an object the other child had written down. We wanted them to experience that by asking the right questions you can find out information that you need and we also wanted the children to understand their expertise. They know and understand their peers better; if the lead researchers would ask the questions they would need more time to figure out the object. The final step of the first meeting was to think of questions that can be incorporated in the research booklets.

The research booklets (figure 2) consisted of: interview tips and explanations, questions to ask, encouragements and a final question in which the roles were reversed and the interviewer became the participant, in order to reflect on the interview. The booklet ended with a question the co-researchers could fill in after the second interview to compare the two interviews as preparation for the feedback session.

Figure 2. Practicing with the research booklets.

The second meeting with the small groups of children, one week later, was a training session in which the children received interview instructions and practiced with the research booklets by interviewing each other. During these practice interviews the lead researchers guided the children on what follow-up questions to ask. The tips the children found most important, or personal tips that were given during the rehearsal interview, could be added in a special area in the margin of the research booklet. The inner pages are smaller than the cover of the booklet in order for the tips to be visible during each question. Another important part of the session was filling in a research plan with the children about the choice of their participants and the timing and location of the interviews. It is important that the children choose participants they now very well and that the interviews take place at the participant's house since the questions were about personal belongings and include a tour through their bedroom. At the end of this training session, each child received a bag with a recording device (video camera, audio recorder or mobile phone), two research booklets, a pen and in some cases a small tripod (figure 3). After the training the children got one week to perform 1 or 2 interviews.

Figure 3. Co-researchers explore their video recorders.

After conducting the interviews, the groups of children and lead researchers came together for a final feedback-session. At the start, the children turned in their recording device and research booklets. They reported on their interviews and combined their findings by dividing their participants into different categories and making those into personas by using specially designed templates (figure 4). The templates are filled up with insights and anecdotes from their participants but also from other people they know. The personas create distance to the real participants, making it easier to share personal insights and anecdotes [5]. At the end of the feedback session all children were rewarded with a co-researchers certificate.

Figure 4. Co-researchers show a filled-in persona template.

2.2 Analysis

All the group sessions and interviews were transcribed. From these transcriptions, interesting quotes were highlighted and turned into statement cards by adding an interpretation of their meaning. Then these statement cards were clustered into different topics.

3. FINDINGS

3.1 Experimenting with recording devices

Having three different recording devices (audio recorders, video recorders and mobile phones) caused some discussion between the groups. Almost all children wanted to use one of the mobile phones; it took some time to show the possibilities of the video and audio recorders, in order for every child to be satisfied. The children with mobile phones used the audio recording and photography options, since it did not have enough memory to make video recordings of two interviews lasting at least half an hour. It turned out that the audio recordings of the mobile phones were of least quality and that the focus of the children who used the mobile phones was on making photos, which made them forget to tell stories that belong to the photos. Therefore mobile phones are not advisable.

Video cameras were used to give the children an increased feeling of professionalism and to get images accompanying the audio. In this case this worked well because they were showing personal belongings to the camera. A side effect of using video camera was that some children appointed a cameraman, an extra person who was sometimes distractive.

Girl: "Our cameraman is using your dolphin as a wrecking ball"

Friend: "Nooooo!"

Girl: "He is very annoying"

When the co-researchers operated the camera themselves or placed it on the tripod it worked well. You can actually see the children, their facial expression, their (sometimes messy) rooms, what's hanging on their walls and how they interact with each other. It also gave the children the opportunity to emphasize certain objects or aspects by zooming in on them.

When using video you don't rely solely on the children's stories. Seeing their room also forces them to be honest, for example in the quote below from a brother with a very messy room:

Boy: "Some children don't take good care of their things, do you have an example of that?"

Brother: "Euh... yes... If you are going to film my room later, you will see that I'm not that careful with my things."

Some of the video interviews are more formal than the audio recordings because the children are more conscious of being filmed. In the end the choice to use a video or audio recorder depends on the subject of the research. In this case it was about objects within children's private spaces and within their family homes, so video added a lot of context that would be hard to enter and observe as an adult researcher.

A few co-researchers recorded extra material, for example videos of playing a computer game and the way home from school and audio recordings of breakfast in the morning and beatboxing. These additional recordings raise the level of empathy. They give a glimpse of the children's lives in an unguided way, which makes it new and surprising for the lead researcher. In this respect, the recorders functioned as collectors of more or less random probes into their lives.

3.2 Professional role of the co-researcher

Through the emphasis laid upon their expertise in every step of the process, the co-researchers come to feel they make an important contribution. Using their input for the research booklets and designing detailed and good looking booklets, templates and forms is appreciated by the children. The recording devices, tripods and research bags also emphasize their professional role. Most of the children appreciated the research certificate they received at the end of the project.

However, most important is to incorporate the children's expert role in the attitude of the lead researcher. It should not be deployed as a procedural gimmick for motivational purposes, but truly be at the core of the lead researcher's interest. Only then does it get naturally woven into the set-up and execution of all the interaction between researcher and co-researchers. By believing in it, the lead researcher mentions it more and uses it to motivate and compliment the children. This is also a good way to bring back focus when they tend to get off track. An indirect example of the finding that the children felt like experts is that one of the mothers told us that her son came home after the kick-off session telling her that he was the expert and that he therefore needed to do the interviews.

3.3 Other findings

Next to testing the improvements, we found out other striking differences between the sessions, of which two will be mentioned:

Switching roles

The final page in the research booklet included an assignment to switch roles, giving the participant the opportunity to ask some reflecting questions to the co-researcher. For some children it did not have the effect that we intended with this assignment: reflecting on the interview together, in order to prepare the co-researcher for the feedback session.

A couple of duos skipped some of the other questions, but all children did this particular assignment. They liked switching roles for a minute. The goal of this assignment was to let the co-researcher reflect on the interview and on his/her skills, about what went well and what could be improved. An unforeseen and unwanted side effect was that switching roles gave the original interviewer the opportunity to evaluate the participant instead of his own performance.

Co-researcher: "You did not understand some of the things, that is a big difference with the previous interview I did, that person did understand."

Next to that, even though some children gave some beautiful reflections and conclusions, the "similarities" and "differences", that were asked to reflect upon, were taken very literally, like "he is a boy and I am a girl" or "we have the same parents".

Group size

Another difference between the two studies was the group size. Groups of 4-5 worked well in the previous study, this time we used groups of 5-6. It turned out that a group of 6 is too big. It is hard to divide attention between all the group members, to listen to all their stories, to react adequately and to keep them focused.

4. DISCUSSION AND CONCLUSIONS

This paper focuses on contextual design research, getting informed and inspired by children in order to design for them.

Three different recording devices were used in order to record the individual interviews the co-researchers conducted with peers. It turned out that mobile phones are not advisable; the quality of the audio is not as good as when using audio recorders and switching between making pictures and explaining them on audio is hard.

Making a choice between audio recorders and video cameras depends on the research set up and topic, in this case video added a lot of context since we were interested in personal belongings and a tour through the children's rooms.

Using co-research gives an opportunity to go to places that are less accessible to lead researchers, like the child's room and looking at it through the children's perspective. Giving co-researchers control over a recording device that they find interesting, over a period of a week, yielded extra recordings of their daily life situations and play. These slices of life added to the broader empathic understanding of these children beyond the scope of the interviews they held.

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