WORKSHOP "PRODUCT DESIGN FOR ELDERLY" IN CHINA: DESIGN EDUCATION AND EXPERIENCE

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ABSTRACT

The summer workshop is held in Beijing, China from 15th of July to 3rd of August 2013 with 32 participants from five different Universities in Beijing. The objectives are getting experienced and educated in product design for elderly during three weeks. Realistic design problems are presented by a Chinese white good company. They expect that the eight product teams will come up with one each product designs. The context of the product design cannot neglect the elderly with their physical fitness and mental constitution. However, a grey movement is going on over the whole world. That is the baby boomers in Europe, one child policy in China and changing family care in India. But the elderly have the money for holding the physical fitness and mental constitution.
Gathering visual design information can be established through hand sketching, photographing, filming and writing. The design teams have made effective use of this information. The abundant visual design information should be structured or ordered. The result of the structuring serves as input of the design brief. Walking design is one of the observation methods that visual design information is capturing with a camera. An aimed walk may observe the design problem or the need of comfort in the available design space. Design competence can be taught with great dedication and enthusiasm for the design profession by practicing knowledge, skill, design, experience and communication. Eight product designs are designed by eight product teams. It is a marvellous result and a tremendous design experience for all workshop participants.

Keywords: Workshop, elderly, product design, design education, design experience

1 INTRODUCTION

The workshop is held in the summer from 15th of July to 2nd of August 2013 at the Design Research Centre in Beijing, China. The organization is done by the school of Digital Media and Design Arts of the Beijing University of Posts and Telecommunications in the person of associate professor Xiaochun Wang. He has a team of students who are handling the everyday things like lunch, tea and coffee, paper, drawing materials, printer, etc.
Supervising is done by the invited design teacher from faculty Industrial Design Engineering, Delft University of technology and the organizer. The rules are not divided, but they could supervise the workshop optimal with good cooperation.
The questionnaires are held to support our educational goals and to check the experience of the product design teams by filling in the questionnaires.
The progress of the product teams come to expression in the presentation on certain moments of the workshop. Of course differences in progress are noted during the workshop by the supervisors and in the communication with the company. Communication is important part of the design because the designer need evaluation and reflection for a successful product design.
The design process of Pahl and Beitz [1] is adopted for the workshop, but the product teams have to create their own design process based on the archetype and the adopted process.
The educational objectives of the workshop are: knowledge of product design for elderly, knowledge of the design process to create the most appropriate design process, communication with the stakeholders and why walking design apply here. Walking design is implemented here as a new design method, for gathering visual design information of elderly [2].

The results are beneficial for all stakeholders: company, participants, organizers and supervisors. Eight product designs are the results of the efforts made by all the participants of this workshop. For these results, all participants have to communicate, inspire each other, take joint decisions and respecting each individual's contribution.

In the discussion of the experiences of all relevant details will be held against the light. Thus, the power relations are clearly evident, and the effects recorded. The steps have to be taken, cannot stay out of the discussion because they are essential for a successful product design for elderly.

The conclusion may be made that the workshop is ended successfully with eight product designs. Everybody is content with the achieved results, however the company would like more design in depth.

2 OBJECTIVES

With the workshop product design for the elderly is experienced for three weeks on the basis of the Pahl and Beitz design process. Product design for the elderly is also the topic of the workshop, but to develop their own design process it is permitted to start with the archetype of the design process. In short, this will indicate an input and an output with in between the design process. The product teams can define a realistic design task this is enabled by a contribution of a company with the workshop topics.

Communication would take place in two ways, first in the form of knowledge and presentation, and secondly in the form discussion and questions. This will happen between all stakeholders of this workshop. However, the hierarchical relationships between company, supervisors, workshop participants and respondent people affect the communication strongly. Communication in the product teams take place on the design contribution of each member that was based on expertise and skill.

Student participants are building on their competence like: design skills, product knowledge, knowledge about the elderly, the design of a specific design process and English skills.

3 GOALS

Eight product designs should be the final result of the three-week workshop product design for elderly in the summer of 2013 at Beijing, China. Experience has been gained with the design of Pahl and Beitz to arrive at an appropriate design process for Product Design for the Elderly, but specifically for the educational purposes.

4 CONTEXT

Product design for the elderly means: discover where the elderly are capable of. The physical fitness opportunities and mental constitution of the elderly [3] appear miraculously to the young people, who are the participants of the workshop. The question is, "How do you come behind the needs of the elderly in conjunction with their potential." There are two options available: 1) interviewing elderly that has been arranged by the organizers, 2) Walking design, the essential design information gathering is established by observing elderly using a camera for making a movie or pictures.

Product design for the elderly should [4, 5] be searched in several areas: entertainment, household white goods, living room, bathroom, keeping in condition. Entertainment will be used to hold the mentality at the same level, but also in order to achieve improvement of mentality. Improvements will be reached only by a mental activity such as: gaming, brain training, thinking, playing, etc. Household, white goods should be designed in such a way that the decline of physical bending will not influence the design anymore for example: loading and unloading washing machines on the front and at the needed height. Living room appliances are often designed with traditional assumptions that for several years have changed into more comfortable support needs for instance: remote control for lighting, television, audio etc. The bathroom in China will have a big change with aesthetical bathroom design and designing of the appliances, for instance introducing a new way of showering with more comfort and support appliances.

The elderly problem has great attention all over the world [6], because people are getting older and less labour is available. The baby boomers [7] demand special study because they have helped to build their country and their efforts would be rewarded in a good pension facility. In China, the leaders have introduced the one child policy [8] so that the percentage of elderly in the coming years are rising much faster in comparing with the rich western countries. The elderly has good money, but the

financial crises have shrunk it strongly. In China, the children have to take care of the well-being of their parents by a governmental law. Health care will not affordable anymore, because our lifestyle hasn't prevent us from the big diseases in the world such as: cancer, diabetes, obesity and cardiovascular diseases

5 GATHERING VISUAL DESIGN INFORMATION

Product design information can be established in a visual way through hand sketching, photographing, filming and writing. This information should be called visual design information. However, the question occurs how to gather visual information design as input for the design process. That should be resolved first. The input determines what will be gathered; this is the first design task in our case, product design for the elderly and the methods of gathering information [9]. The design task includes the gathering of visual design information of the elderly, seeking physical capability and mental constitution of the elderly.   The behaviour of elderly people depends strongly on the physical and the mental capabilities. It is almost impossible to realize for all elderly people a vitality description with the corresponding motivation, because each person is unique. Actually, this gathered visual design information should be stored in a database for elderly data.

The design teams of the workshop make effective use of visual design information registration by using a digital camera. The use of a movie camera has not been considered out of piety for the residents of the visited elderly home. Staying close to the topics of the workshop, for instance the topic entertainment may be explored, which delivered a great number of interactions. Just the interaction between a human being and the appliance gives visual design information about the design opportunities.

The output of the visual design information gathering process can be very abundant, but this should be structured and ordered such that the resulting information may be selected for the input of the design problem definition. The design brief, that describes briefly: what, where, how, who, which, etc., follows after the problem definition. The gathered visual design information is also used for writing the design brief.

Figure 1. Visual Design Information ordered with behaviour pattern, facts and problems

6 WALKING DESIGN

During Walking Design, you observe situations that will be the input for a design problem definition. The observation takes place mostly during a walk that is an input of the designer. It will be transformed directly to visual design information by perception or creative action in the mind. This visual design information can be captured with a camera in the form of pictures or a short movie during a walk. The designer stores also this design information plus all conditions in his memory

under which they have been established. This will be a great assistance for the designer at the interpreting of the pictures and short videos to order and structure the visual design information. An interview is another technique of observing, but the main difference with walking design is determining of the strategy and the preparing for an interview. The direction of the interview is established before it starts and the interviewee belongs to the user group. The wondering will certainly not occur in the interview, but it can be happen with the designer while walking. People may observe during a walk, but they also have moments of inspiration and / or amazement. Visual design information gathering will be applied at walking design, because one picture tells more than thousand words and a movie tells more than thousand pictures. This information is dynamically established; therefore the product design proposal should be researched during the orientation phase of the design process. Walking design will be used in the orientation phase of the workshop. However the workshop is organized such as: first week, analysis; second week, synthesis, and third week, realizing product design for public presentation. The orientation phase belongs to the analysis.

Sound walking is an excursion through an environment, while listening is the main goal. The walk may be: at home, downtown, park, nature, factory, workshop, atelier, etc. The similarity between sound walking and walking design is the environment and the walking activity with two different methods of observation. Walking design observes design situations that are established with the mentioned methods above. Sound walking observes the sound situation in an actual place of the environment that is recorded.
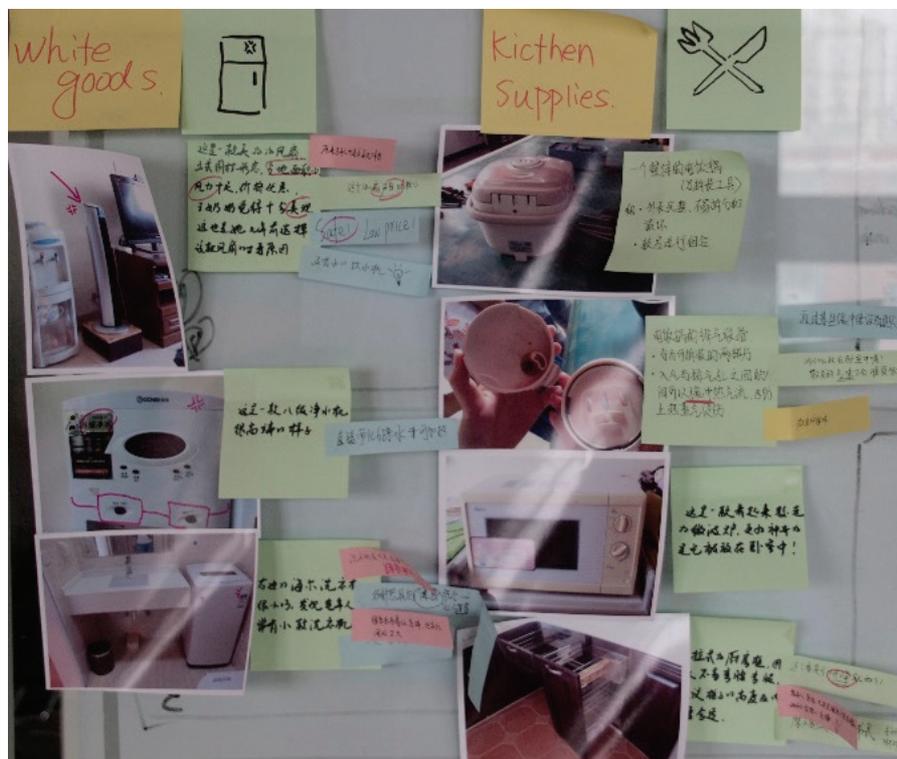
Figure 2. Ordering and structuring

An example of the ordering and structuring is shown in figure 2, white goods and kitchen supplies are the ordering parameters. The structuring takes place by activity, place, problem and designer preferences and those are presented with coloured post-its. The visual design information may be established in a huge number of pictures. After that ordering and structuring is a necessity. If the designer ignores this fact, he loses his grip on the design and blocks after some time. The ordering and structuring is an activity that cannot be neglected as a method for interpreting and evaluation of the gathered pictures during walking design.

All pictures should actually be saved with the annotations in a database for product design for elderly that is available to all interested parties. The used and unused visual design information has so much value that storing in a database has sense. This database should be created special for product design for elderly very soon. However the database should be maintained so that the information stays up to date.

7   DESIGN COMPETENCE

Design competence covers: design, communication, experience, skills and developing a designer identity. This gives the design its gestalt from the designer who the design task transforms by many creative actions. The design gets its ultimate shape after many product design actions. The product teams have been worked intensively at designing during the workshop depending on the potential: knowledge, skills and motivation. All the product teams have a different potential that will be found back in the completeness of the product design. Designing is communication, it is a statement which should be considered closer. Communication is very broad term that has many points of view of which only some are used in the context of the workshop. Communication in the product teams need to be good but also a high quality has to take place in such a way that everyone encourages each other to a successful design. The background of the product team members can be completely different namely; engineering, art or industrial design, this delivers mostly communication struggles. But the communication with all stakeholders is very complex, everyone has his one interest and significance and show up as student product team, company, education, supervising and organisation. This requires a model of communication that is available for design education projects in cooperation with companies [10]. During the workshop, the communication does not go completely according to the model, there are also the hierarchical relations that play a major role in China. Design experience will be gained in training by participating in design courses, design workshops and design contests. The workshop product design for elderly has many design aspects with which experience may be gained like: elderly in general and in particular mental ability and physical possibilities, identifying needs of the elderly, dealing with a company, design process of Pahl and Beitz, process design out of archetype of the design process, visual design information gathering, walking design, product design, etc. All workshop participants are able to gain their experiences in order to work on their identity through: design skill, knowledge and performance. These properties are for all team members different depending on everyone's personality.

The skills are important for powering the creativity that are transformed into ideas by the product teams, further into product ideas, product concepts, and finally into a product design. Powering creativity also encourages the skills of team members such as hand sketching, generating ideas, developing of concepts, embodiment design, prototyping, testing and evaluating. This can only lead to a successful product design through good communication, presentation and reporting. If a product team comes in a design flow than the design competence grows the fastest in all its aspects. It is always a beautiful experience for a supervisor that his efforts bear fruit for all the participants.

8   RESULTS

The results of the workshop will be distinguished in four major contributions such as: product design, questionnaire, education, product design for elderly. Each contribution has its appropriate content for design education which in its totality grows to a mature course in the education of Industrial Design Engineering.

Each product team has submitted a product design report and presented the product design at public workshop presentation. The report provides insight into how the design overall is expired, which has led to some starting points for designing of the design process, "the product design for elderly". The quality of the product designs vary considerably, these differences emerge as content, justification, opportunities, and advantages and disadvantages during the performance.

Three questionnaires are mailed to the workshop participants at the end of each week. The participants were able to complete this digital survey on a voluntary basis. The questions are to gauge the experiences of the participants of the workshop and the content. In this way, product teams will be followed in the progress of the design process. Besides the participants have the challenge to express their experiences. In the first week the analysis aspects perceived as excellent, walking design is a new design methodology that is well suited to the Chinese way of thinking. However, the participants have experienced the method of disassembling and assembling domestic appliances as. It is an eye opener for all participants, due to the fact that all product components show all design aspects such as function, material, manufacturing and geometry. But they also show their interconnections and relationships for their function as a complete product.

Actually said, it is a product discovery journey. The communication runs with difficulty between the participants and supervisors in the second week. Clear agreements are made to solve the problems, this has put the design process under pressure, but this is good for the quality and progress.

A workshop fits well in an education program of industrial design engineering. An assessment and study credits have to be achieved. It can fit nicely into the electives of the curriculum for the Bachelor and/or Master's program.

Education requires a special design method for Product Design for Elderly, because the product teams should experience the method as efficient and functional in their education. The method is explained in a paper "Product Design for Elderly - Visual design information inspired a new perspective in design education" [2].

9 DISCUSSION AND CONCLUSION

The method of walking design will give the abstract thinkers a large number of efforts. On the other hand visual thinkers are attracted to walking design. The design information is easily processed into visual design information that serves as input for the problem definition. Many Chinese people, but also industrial designers are visual thinkers, they all have a great advantage with this method. However, product design for the elderly will require strong commitment from the abstract thinkers to bridge the gap with visual design information.

The cultural differences are clearly reflected in a workshop like this. The place, country, design background of participants, university organization and the company as product organisation, these are the parameters that influence the cultural circumstances of the workshop.

The conclusion can be drawn that eight product designs are a good result of a well-organized and successfully completed workshop. The participants are the biggest winners who have accumulated a positive design experience with product design for the elderly. They have worked hard on their design competence and design identity, of course one is more successfully than the other. The model of product design for the elderly has arisen from various contributions of the participants of the workshop: the eight product design reports one of each design team, the company with their critical comments and opinions, the three surveys and the supervisors with their input on the design process.

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