

Researching Interaction Guidelines

- Mapping Playful Quality to Design Interactive Products

Yung-Cheng Chen

Faculty of Industrial Design Engineering
Delft University of Technology
Landbergstraat 15, 2628 CE
Delft, The Netherlands
y.chen-17@student.tudelft.nl

Wei Liu

Faculty of Industrial Design Engineering
Delft University of Technology
Landbergstraat 15, 2628 CE
Delft, The Netherlands
wei.liu@tudelft.nl

ABSTRACT

The interactions in IT supported activities in a Generation Y work context were studied and discussed, which general design guidelines have been revealed. However, further research about practical design guidelines hasn't been performed. This study aims to serve as supplement of this part based on previous research. By applying contextual interviews of mapping interaction quality and Aesthetic Experience, some phenomena of interaction in work context has been revealed. By using sensitizing toolkits, we extract participants' latent needs and expectation of future working types. In the end, practical design guidelines for designing playful interactions in work context are drawn. Designers could benefit from the result and utilize the guidelines, prototyping new interactive products. Meanwhile, researchers could apply or modify the sensitizing toolkits or sessions in order to come up with new insights for designing different interaction qualities.

Keywords

Aesthetics of Interaction, Generation Y, Interaction Quality, Design Guidelines.

1. INTRODUCTION

From reviewing the research of Wei Liu's [7], there is a discord between the home and work context when it comes to the interaction with IT supported activities. Wei Liu developed guidelines for designing interactive products for generation Y workers and identified six interaction qualities, understanding how these qualities happened in both work and home contexts [7]. However, design guidelines are always directions that lead the concept to a higher or an abstract level. There are no practical instructions of how these guidelines are implemented in reality. Moreover, how these interaction qualities are concretized into specific product qualities is still unknown. This research paper aims to map certain interaction qualities with Aesthetic Experience, finding how the behavior in certain interaction quality can be perceived, experienced and evaluated by people. In the end, practical

design guidelines for designing interactive products in different activities are concluded in terms of playful interaction quality.

2. BACKGROUND KNOWLEDGE

2.1 Generation Y Interaction

With the rapid technology development among mid-1970s to early 2000s, people born during that interval grew up in a completely different environment which older generation never experienced before. They began to contact with various electronic devices that contains abundant of human-product interaction in the early age. In these days, Generation Y started to enter the job market and they found out that the interaction in work is not as rich as they experience at home. Wei Liu stated that we could understand the friction between work and home context by identifying six interaction qualities among Generation Y workers [7].

Six qualities: Instant, Collaborative, Playful, Expressive, Responsive, and Flexible

- *Instant: The interaction is experienced as immediate, spontaneous and on the spot.*
- *Playful: The interaction is experienced as engaging, enjoyable and challenging.*
- *Collaborative: The interaction is experienced as supportive, unifying and shared.*
- *Expressive: The interaction is experienced as open, free and animated.*
- *Responsive: The interaction is experienced as alert, quick and reactive.*
- *Flexible: The interaction is experienced as adaptable, accommodating and adjustable.*

In Wei Liu's research [7], he concluded some design guidelines, which could drive the development of future office work support:

- *Any content for interacting has to be playful, expressive, and responsive.*

- *Collaborative working requires an engaging (digital) platform for gathering and exchanging information.*
- *New mobile offerings should enhance instant and context-aware communications, resulting in flexible working conditions.*

2.2 Principle of Pragmatist Aesthetics

According to the research [9], Philip R. Ross and Stephan A. G. Wensveen's developed a general idea of aesthetics based on Pragmatist philosophy. In terms of designing interactive products, they translate the conception into a design approach, coming up with four design principles:

- **Practical use next to intrinsic value:** Aesthetic Interaction benefit not only from its' intrinsic value, but also the practical use. Norman [8] claimed the phrase "attractive things work better" to indicate the practical use of beauty in design. Therefore, the aesthetic interaction should be valuable in itself and also has practical use in daily life.
- **Social and ethical dimensions:** Although social and ethical value vary in individuals, societies and cultures, designers always have to take these aspects into account when designing interactive products because interactive products have both aesthetic and practical functions, strongly influencing people's values and behaviors.
- **Satisfying dynamic form:** Since interactive product is different from static product, in terms of form, color and material, the form in interactive product should be opened, dynamic and coordinate to user's behavior.
- **Involving the whole human being:** In line with Hummels, Djajadiningrat, and Overbeeke's research [3], the involvement of whole human beings means the participation of four human skills: cognitive, perceptual-motor, emotional and social skills. Since the experience of beauty is not limited to intellectual contemplation of beauty [10], we could see that the Aesthetic Experience will be experienced in different levels within human skills, rather than restricting to one specific aspect.

3.3 Sensitizing tool kits

Conventional user study techniques only discover people's current situation and the understanding of past experience. In terms of eliciting people's fear, dream and potential needs, these techniques are quite limited [11]. Traditional user study methods focus on the analysis of the past and present status, providing concrete design guidelines for designers after analyzing. However, research from Bodker [1], Hekker and van Dijk [4] shows that the contextual information from generative sessions accommodates tacit knowledge and latent needs. This qualitative information could serve as insights for designing products exist in the future. Therefore, sensitizing tool kits is a suitable media for discovering people's potential needs in order to design for the future scenario.

According to Liu's interview toolkit [6], we adopt and modify some components in order to meet our research goal. Different IT supported activity cards are still kept the same, since we can discuss particular activity back and fourth, referring to previous research result [6]. To map Aesthetic Experience, we create four boards stand for different principles. Each boards has scale from 0 to 7 and consist of 2 context: work and home context. (see Figure 1)

3. MAPPING PLAYFUL INTERACTION QUALITY WITH AESTHETIC PRINCIPLE BY APPLYING SENSITIZING TOOL KITS

3.1 General idea

The aim of the session is to interview participants and use the sensitizing toolkits, asking them to compare and remind the playful experience of different IT supported activities both in home and work context.

3.2 Tool kits

There are four boards, 8 sets of 24 IT supported activity cards, blank cards, pens and post-its (see Figure 1). Each boards stands for a particular principle of Aesthetic Experience. From the result of Wei Liu's research, we adopt all IT supported activities and take them further in this session.

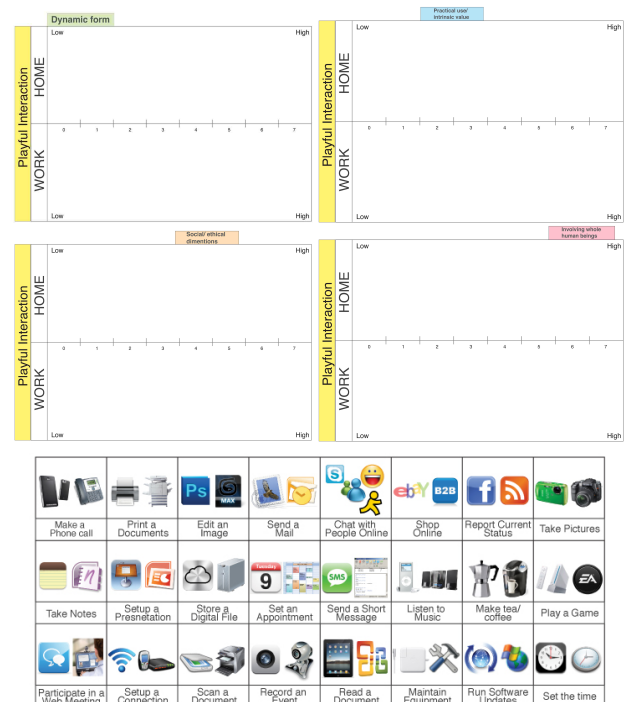


Figure 1. The boards and activity cards

3.3 Participants

In these two sessions, we choose two participants. See Figure 2. One (F.E.) was working in a design consultancy as a graphic/ web designer, having 5 years working experience. Another participant (H.W.) was working in a

design consultancy as a strategic designer, having 1 year working experience. Both participants' ages fall in the category of Generation Y and currently studying master program in Industrial Design Engineering Department in TU Delft.



Figure 2. Two participants

3.4 Procedure

Each session lasts 65 minutes and the sequence as follows

- Informing participants about the procedure of the session - 5 minutes
- Explain the topic and the task - 5 minutes
- Start utilizing the sensitizing toolkits - 30 minutes
- Discussion of the results - 20 minutes
- Close of the session - 5 minutes

4.5 Result

Two participants successfully completed the sessions and managed to provide experimenter the contextual information via using sensitizing toolkits. During the session, participants were active and willing to share their experience. The results are 4 sets of boards for each participant. See Figure 3 and Figure 4.

Qualitative analysis:

Since the raw data are quotes, transcripts and statements, qualitative analysis is an efficient way of refining these contextual information into meaningful level. The sensitizing toolkit serves as a mean to induce the participant's experience. During the session, experimenter and participants together made the transcript, which includes notes and statements. After the session, the interpretations were made by the experimenter who brings the data to knowledge level [2], finding patterns in order to discover target group's latent needs and tacit knowledge [5].

Participants F.E.

Participant F. E. emphasizes that various activities regarded as daily routines are associated with Playful Interaction in work context and highly valued in social aspect as well. Particularly, he mentioned that "setting up a presentation" is related to "Dynamic Form", "Social aspect" and "Practical/ Intrinsic values". However, participant FE experiences less in "Involving whole human beings" of every activities he claims that involving too much human

perceptual skills will cause distraction either in home or work context.

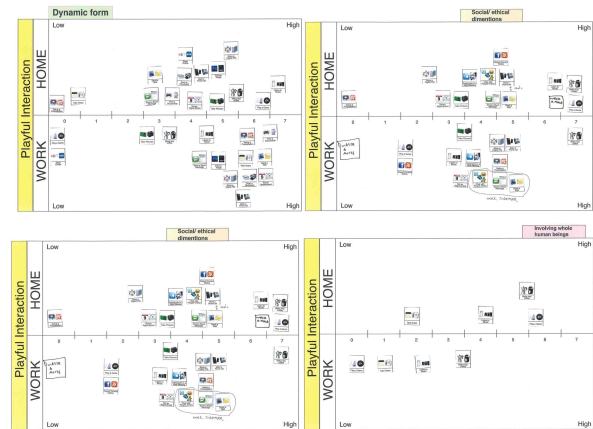


Figure 3. Result from participant F.E.

Participant H.W.

Participant H.W highlights the importance of functionality side in every activity, especially in communication tools. Participant appreciates the interactions that help workers increase the efficiency in working. Participant valued "Dynamic Form", "Social aspect" and "Involving whole human beings" in "chatting with friends", looking forward new interaction which help the way of communicating with clients. However, The subject didn't put much emphasis on "Practical/ Intrinsic value" in work context because she considered that routine works need to be done efficiently and quickly. Sometimes these activities are provided by the company so participant regarded these activities be practical but not beneficial in intrinsic value.

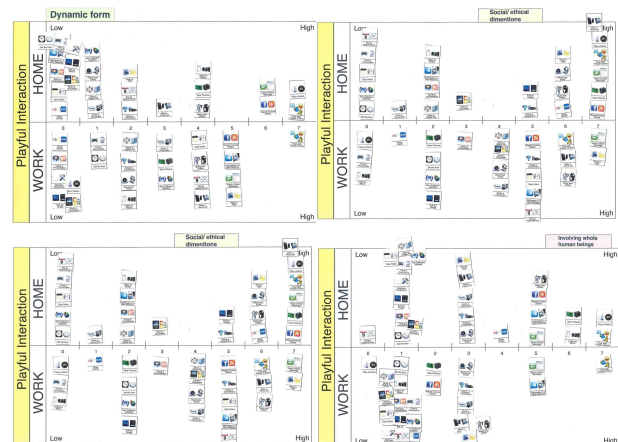


Figure 4. Result from participant H.W.

4. DISCUSSION

From the transcript and interpretation, the results indicate that "Dynamic Form" and "Social Dimension" are crucial principles of designing Playful Interaction in work context. Daily routine activities in usual work context could be redesigned as a more playful interaction that involves social

aspect and dynamic forms. For example, the communicative activities could be designed in a way that involve other workers and be “dynamic” according to users’ behavior and emotions.

5. PRACTICAL DESIGN GUIDELINES

From the data in the contextual session, we conclude four practical design guidelines as follows:

- **The Dynamic Form in interactive products should support the communication activities in work context** – playful interaction greatly involves in “Dynamic Form” which shows the behavior of interactive products. This behavior should support users to express themselves in a more elaborated way other than text, sounds and images, especially under the condition of distant communication.
- **Interaction of social/ ethical dimension supports routine works** – the interaction in routine works should focus on the collaboration and the co-creation in the same task among workers, which increase not only the playful interaction but also the willingness of conducting routine works in the office.
- **The interaction of involving human sensor motor skills raise the playfulness in work context** – especially in the communication activities, the interaction involves various human sensor motor skills which increase the playfulness in work context. However, the mean should not be over emphasized due to the distraction of normal working flow in the office.
- **Interaction involving aesthetic value and practical use is relevant to activities for dealing with images** – for example, the interaction in “editing images”, “setting up a presentation” or “taking pictures” has to be aesthetic to some extent since the results will be presented to clients or colleagues in the office.

6. CONCLUSION

Several literatures have been reviewed and two contextual interviews have been conducted with sensitizing tool kits. The literature reviews were focused on the Generation Y Interaction, Aesthetic Experience and Contextmapping Method. By mapping playful interaction qualities with four principles of Aesthetic Experience during the session, four design guidelines have been drawn. Though playful interaction is richer in home context rather than work context [6], the essence of playfulness still can be put into the work environment via utilizing “dynamic form” and “social aspects”, which seals the interaction friction between home and work. On the other hand, involving the whole human sensor skills also raises the playfulness in various activities. However, the distraction from current tasks in work context should be avoided while applying several senses in the interactive activity. Aesthetic and

practical value are crucial as well. However, these aspects raise attentions in certain activities, for example editing images.

According to the results from sensitizing sessions, two directions of future research have been notified, which could either focus on mapping different interaction qualities with four Aesthetic Principles, coming up with more practical design guidelines, or concentrate on how to prototype the interaction by using the design guidelines that presented in this paper. Both ways have the values in understanding the discord between work and home context and optimizing the working experience by introducing novel interaction.

7. REFERENCES

1. Bodker, S. (2000). *Scenarios in user-centered design – setting the stage for reflection and action*. Interacting with computers, (13, 61 - 75).
2. Elizabeth B. –N. Sanders & Uday Dandavate. (1999). *Design for Experiencing: New Tools*. First International Conference on Design and Emotion, TU Delft.
3. Hummels, C.C.M., Djajadiningrat, J. P., & Overbeek, C. J. (2001). *Knowing, doing and feeling; Communicating with your digital products*.
4. Hekker, P. & van Dijk, M. (2001). *Designing from context: Foundations and applications of the ViP approach*. Proceedings of DTRS 5, edited by P. Loyd, and H. Christiaans, Delft Press.
5. Liz Sanders & Pieter Jan Stappers. (2011). *Analysis – What to do with what you got*. Context and Conceptualization Reader, TU Delft.
6. Liu, W. & Stappers, P. J. (2011). *Making the Office Catch Up: Comparing Generation Y Interactions at Home and Work*.
7. Liu, W., Stappers, P. J., Pasman, G., & Taal-Fokker, J. (2011). *Supporting Generation Y Interactions: Challenges in Office Work*. Proceedings of the 13th ACM conference on Computer Supported Collaborative Work (CSCW), New York: ACM Press.
8. Norman, D. A. (2002). *Emotion and design: Attractive things work better*.
9. Ross, P. R. & Wensveen, S. A. G. (2010). *Designing aesthetic of behavior in interaction: Using aesthetic experience as a mechanism for design*. International Journal of Design 4, 2, 3-13.
10. Shusterman, R. (2000). *Pragmatist aesthetics: Living beauty, rethinking art*. Oxford: Blackwell.
11. Sleeswijk Visser, F. (2005). *Contextmapping: experiences from practice*. International Journal of CoCreation in Design and the arts 1. 2, 119-149.