The Use of Emojis as a Tool to Measure Conceptual Design Artefacts

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Abstract. This paper describes the development of a conceptual product aiming to support social awareness among people from two different generations and a tool to evaluate the potential emotional effect that this artefact could have on its users. The study was carried out during the Conceptual Design course at the Federal University of Technology – Parana. The students taking part of the course were students from the Design course. The results show that the emojis were perceived as a modern and quick way to evaluate conceptual products.

Keywords: Design · Social awareness · Conceptual product · Emojis

1 Introduction

This paper reports an empirical study that was carried out during the Conceptual Design course at the Federal University of Technology – Parana. The students taking part of the course were students from the Design course. They had to develop a conceptual interactive product aiming to support social awareness and a tool to evaluate the emotional effect of it on its users.

For the first part of the study the students had to develop the design of an artefact aiming to connect and create the sense of awareness among people from two different generations – granddaughter or grandson with their grandfather or grandmother – that lived far apart from each other but that were emotionally attached. Therefore, they had to design an artefact that would connect them through a predetermined message delivered by it and understood by the user. This artefact would be an aesthetically beautiful and pleasing product in order to create a more interesting and engaging interaction.

For the second part of the course they had to develop a simple, friendly and modern tool to evaluate the conceptual design artefact that they have developed.

In order to develop the evaluation tool they had to study the effects of positive and negative emotions (Norman 2004) on the user during the interactive experience. They also studied the non-verbal self-report instrument called PrEmo (Desmet and Hekkert 2007). This measurement instrument was developed to measure the mixed emotions that are elicited by an artefact.

2 Literature Review

During the last 15 years there were a lot of interest in the field of emotion and design. That brought a lot of research in the area, such as the research on how the brain works, giving evidence that emotions and cognition are very close related. This motivated several researches from different areas of interest to research about the role that emotion plays on how the user perceives an interactive product.

The students started their work by studying the three levels of emotional design (Norman 2004), the basis of design and emotion (Desmet and Hekkert 2009) and the experience during the product interaction (Desmet and Hekkert 2007).

The emotional design theory (Norman 2004) presents a model of design with three levels. The visceral level is concerned with appearances and it is not culturally dependent. The behavioural level has to do with the product usability. The reflective level considers the status given by the product. These three levels of design motivated him to state that *"aesthetically beautiful objects enable you to work better"*.

Objects are able to influence the occurrence of certain emotions, influencing the process of the design. Desmet (SusaGroup 2015) claims that emotion is part of human nature and everything in the world has a constant influence on the emotions, in this way it is impossible to ignore the emotional side of product experience. It would be like denying that products are designed, bought and used by humans.

Desmet (Blythe et al. 2004) establishes that the major advantage of non-verbal instruments is because they are language independent, so it's possible to use them in different cultures. Besides they are often claimed to be, as Desmet (Blythe et al. 2004) aims, *"less subjective than self-report instruments because they do not rely on the participants' own assessment of the emotional experience"*.

In order to develop the evaluation tool the students had to study the effects that positive and negative emotions (Norman 2004) had on the user during the interactive experience. They also studied the non-verbal self-report instrument called PrEmo (Desmet and Hekkert 2007). This measurement instrument was developed to measure the mixed emotions that are elicited by an artefact. Instead of relying on the use of words, respondents can report their emotions with the use of expressive cartoon animations. In the instrument, each of the 14 measured emotions is portrayed by an animation by means of dynamic facial, bodily, and vocal expressions (Desmet 2004; Blythe et al. 2004).

3 Development of the Work

After completed the literature review the students started with the brainstorming in order to generate the first alternatives for the artefact. Apart from the main criteria – socially connect people from different generations – the students also have to observe that the artefact should not interrupt the persons from their daily tasks and there should be some sort of feedback to reassure the sender that the message was delivered with success.

It was given the same briefing to the entire class but each group was free to develop their own concept of what would be an artefact to create social awareness. The students did not have to worry with the technology used or manufacturing process because the

artefact did not have to be feasible at this point. There were some ideas like the message could be sent through a single action or event and it could have two different design so that they would suit their users preferences. One issue that was observed by all groups was that the artefact should be an object of desire, something that the user would feel proud to own and to use.

The next step of the project was to develop a tool to evaluate their artefact. The tool developed by the students to evaluate the conceptual design of the artefact for social awareness was based on emojis and used the same 14 emotions from PrEmo. PrEmo is a non-verbal self-report instrument that measures 14 emotions that are often elicited by product design. Of these 14 emotions, seven are pleasant (i.e. desire, pleasant surprise, inspiration, amusement, admiration, satisfaction and fascination), and seven are unpleasant (i.e. indignation, contempt, disgust, unpleasant surprise, dissatisfaction, disappointment and boredom). Instead of relying on the use of words, respondents would report their emotions with the use of expressive cartoon animations. In the instrument, each of the 14 measured emotions is portrayed by an animation by means of dynamic facial, bodily and vocal expressions (Desmet 2004; Blythe et al. 2004).

Emojis are well known and have a widespread use among users. It would bring a contemporary approach to the evaluation tool as well as a common language for the user providing a familiar interaction. The advantage of using emojis as a tool to evaluate a conceptual design is that they are flexible and easy to adapt.

The students started by looking at the most popular emojis in use today and then narrowing down to three of them for each emotion. They had to combine or adapt those emojis in order to design a single emoticon that would better express the emotion. Those emotions where then developed further to translate into emojis. They had to do it for each one of the 14 emotions. Figure 1 shows the emojis used for eight out of the fourteen emotions.
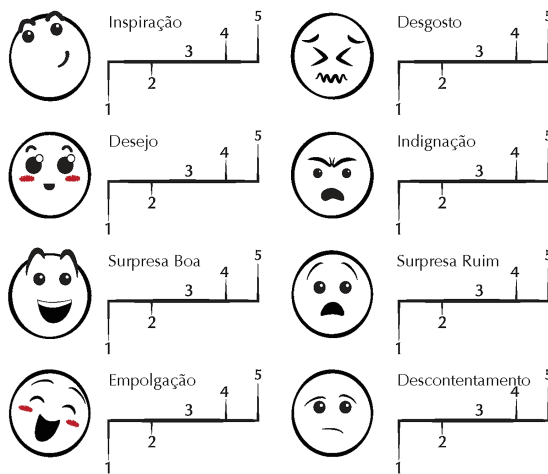

Fig. 1. Thumbnail of the emojis

The evaluation tool was then used to evaluate their conceptual artefact. The pilot evaluation of the tool took place at the university and the participants were students. The emojis were presented to them using two A4 posters, one for the artefact and the other for the emojis. The poster for the artefact was presented as a narrative of the intended usage of the product (Carroll 1999). The narrative was presented in the form of photoplay to help illustrate the interaction of the user with the conceptual product. After that the participants would see a labelled emoticon and rated their emotion towards their artefact in a scale ranging from 1 (does not evoke) to 5 (evoked a lot). The participants had to rate all the emojis in order to complete the task.

4 Considerations

The artefacts developed during the Conceptual Design classes were perceived to be aesthetically pleasing to look at and their interfaces were almost imperceptible to the user. All of them used a single message to create the sense of awareness indicating that someone was not very far away.

The preliminary results of the evaluation tool showed that the use of emojis were well understood and accepted by the public. It was seen as a modern, simple and quick way to evaluate conceptual products. However, as a novel tool to evaluate emotions it must be used in other projects and also with a larger number of participants to verify its suitability for this purpose.

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