RESEARCH FOR DESIGN USING A CONFERENCE PRINCIPLE AS EDUCATIONAL METHOD

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ABSTRACT

Industrial Design Engineering is a very interesting working field to perform in-depth research. To students, unfortunately, these possibilities are not always known. Therefore, a course set up was developed which implemented a research approach in a design & styling master course. The attention to research is actively attracted by imitating a conference set up. It is combined with design by incorporating an exhibition at the conference. All students have to restyle the same existing product, using the product architecture as starting point. Their restyling is done based on literature research in different fields. At the end of the course, students present their design process in a visual report, a mock up and a paper at the conference with exhibition.
Interesting to see is that due to course set up, very interesting designs are made. With the compact information gathering of consumer values and design approaches, and due to different students studying varied approaches simultaneously, the students get to adapt models and combine information to match to their specific value groups of people. Course evaluation shows that students appreciate and value this course set up very much.

Keywords: Design education, value centred styling, product design, industrial design

1   INTRODUCTION

The research situation when graduating in the Masters degree in Industrial Design Engineering, motivated the author for combining a design and styling course with a research approach. The limited motivation for research in the field of Industrial Design Engineering (IDE) was extraordinary compared to a study such as Chemistry. Where about 20 students start their Chemistry education, more than 30 PhD positions could be fulfilled by the time those students graduated. In Industrial Design Engineering, about 300 students start their education and less than 10 PhD positions were fulfilled per year and only partly with former IDE students. Therefore, a Master course set up was developed in which students had to re-style a current consumer product and could get acquainted with in-depth research in a motivated way.

The course Design & Emotion is part of the Master track Design & Styling, which has a sequence of courses related to each other and following a line throughout history and the product phase theory of Eger [3]. In the first course, Past Futures, the history of style is the main theme. Design styles are placed in the context of the society of their times. In the second course, Evolutionary Product Development a redesign of a product has to be done. This design should be a next logic step based on the history of a chosen product. When new product ideas just have entered the market, they are often products focussed on the functionality. Via different product phases the design of the product changes and the importance of emotional benefits substantially increases. In our current experience economy, where supra-functional requirements are important to people, and shops provide a large segment of similar products, it is important to focus on the emotional benefits of products for people. Therefore, in the third course in this series, Design & Emotion, the course which is described in this paper, special attention is paid to this subject. In the fourth and last course of this series, Create the Future, an effort has to be made to develop a product for the longer term, e.g. five to ten years.

According to the above described curriculum requirements, the Design & Emotion course (5 European Credits, 140 studying hours) should cover the re-styling of a product focussing on the emotional benefits, via the appearance impression, the experience and expectations of consumers. The course frame uses a product currently in the market, of which the technique is available and can be used

again, but the aesthetics have to be re-designed and styled. Similar to real-world design practises. Constrained by this requirement, within a time frame of a 10 week quartile, the challenge was to devise a course which addressed the following issues: How to motivate a student to combine in-depth research with a detailed design process, covering the total design process of analysis to a re-styled product, to the average student who is primarily interested in passing a mandatory course? Is it possible to capture the average student's interest and imagination in the research world, while they are working on the re-styling of a product? Can re-styling of a product be taught in a way to make it directly related to current research practices, so that the student can appreciate clearly the relevance and importance of research projects in the field of design & styling? How to design the course 'Design & Emotion' to implement the above questions.

As extra motivation and inspiration for the students, and moreover to gain insight into the 'real' designer world, contact was made with a large design agency in the Netherlands, specialised in personal consumer products. Every year one of their products is used as reference for the course and students discuss their concept with the professional designers halfway and at the end of the course.

The above issues are assumed to be universal, as universities in industrial design engineering need to get good research ratings and improve their impact factor. This paper might help other lecturers to gain insight in a course set up to motivate their students to explore the interesting possibilities of the industrial design and engineering and the design and styling research world.

2   SCOPE

How to deal with the above issues and at the same time view the large amount of material covered in the course, as a potential rather than a constraint? As research is related to conferences, the author derived the idea of implementing a conference procedure as reference for the course set up and transformed it in such a way it matches and combines the research approach in combination with the re-styling approach.

Another inspiration source for the design of the new re-styling design course, was the perspective on the product users and the way to design for them during the re-styling process. In our current experience economy, purchasers often rely on emotional decision-making and the appearance of products influences these choices in several ways. People can choose from different varieties and brands when buying, for instance, a certain type of iron, coffeemaker, electronic toothbrush, or mobile phone. Flawless functionality is expected [1-2] and distinction between similar products is becoming more difficult. On the one hand we can explain this by, and at the same time, place the new course under the scope of the product phase theory of Eger [3]. The new course 'Design & Emotion' can be considered as the focus on the segmentation, individualization and awareness phase of products. On the other hand, we can explain this by our experience economy, in which we want products to match our preferences and lifestyles [4-5]. It is important to know what consumers want as many consumers feel the almost physical discomfort in response to mismatching product design [6].

In this new course 'Design & Emotion', the author preferred to take the approach one step further and focus on the perspectives of a specific user group. This can be explained by the definition of the concepts of emics and ethics. These are developed by cognitive anthropologists and commonly used in cross-cultural analysis. Ethics are generalizations valid for most cultures in the world; they refer to a 'culturally neutral' approach. Emics refer to being culturally relevant, and come from within the culture. To anthropologists, all manner of insider perspectives is seen as emic. ([7], Rapoport in [8]). In this course, students have to take into account the wants, needs, desires, dilemmas, wishes, etc. of the actual users.

Combining the different input for the development of the course, the following goals were derived: Understand different aspects of design and emotion in relation to the form of consumer products; Obtain skills in deriving and interpreting the values of a group of people, culture, etc. in order to be able to translate this information to shape a product; Identify critical information relating towards the appearance of products and its interpretation by different consumers; Obtain research/ analysing skills to data that can be used for the perception of a product's form; Obtain skills to present and argument the decisions of a chosen perceptual appearance; Working with time limitations

4   PEDAGOGICAL APPROACH

The used pedagogical method and approach is briefly outlined as follows. As mentioned earlier, the course consists of two interwoven and parallel streams: the research approach and the re-styling of a current product approach. See figure 1.
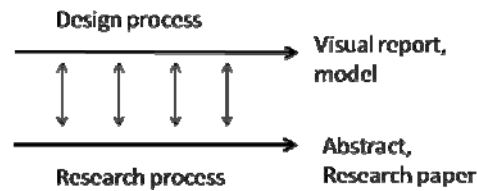

Figure 1. Lateral process for the integration of research and design

The research information must be used during the design process, which in turn, provides questions that need to be studied. The conference set up was used as basis and adapted to this situation by incorporating in the conference an exhibition of the final designs. The conference was named the 'Conference and Exhibition on Design and Expectation', referring to what people expect of a product they want to use. Deadlines, part of regular conferences, were converted to sub-assignments. Where in real life abstracts and papers could be declined when handed in too late, in this course grade reduction takes place. Students work on an individual assignment. Every other week, there are group progress meetings in order to help students in their process and to exchange information and insights in the process between the students. Student outputs of this course are a paper and a design process report which both are presented in a verbal presentation and during the exhibition of the mock-ups. In more details, the course set up is as follows:

The first half of the course is to get acquainted with the subject and develop a focus. In the first lecture, the principle of the course is explained, including the boundaries of the assignment, such as the reference product and the themes of the course. In line with the conference simulation, the first lecture also introduces the 'Call for Abstracts and Papers'. To help students getting a quick start with a focus, certain themes are selected from which the students could choose to work with.

Related to the type of consumer product to redesign, possible re-styling approaches and some insight into the influence of certain cultures, habits, differences and similarities, etc. on product designs are explained. Examples of conference themes are 'Experience, Emotional influences on Product design', 'Gender and influences on product design', 'Cultural influences of Islam on Product design' and non western cultures such as 'Culture of Japan and influences on Product design'. On each of these themes one or two professors, experienced researchers, experienced curators and/or historians are invited to give a guest lecture during the first two weeks of the course.

To keep the students to their planning, students have to decide their theme to work with by the end of the first week. In this way, they have enough time to do their own in-depth research into the theme. Even thought the themes are rather different, students are stimulated to attain all lectures, as the different insights from each guest lecturer could help them in their own approach for the assignment very well.

Half way the course are the mid-term research and design deadlines which are transformed to the 'abstract submission deadline' and the 'concept presentation workshop with professional designers'. In a 500 words abstract students describe their research basis and the intended focus of their further research. During the concept presentation workshop, students present and discuss their mood boards, their sketches and their favourite concepts.

The second half of the courses is planned for detailing and optimizing of the design. Due to the interwoven character of the course, new and existing product re-styling ideas can be based on information found in literature and, vice versa, literature can provide inspiration for new design ideas, which help to detail and optimize the design.

In the final week, the conference named the 'Xth Conference and Exhibition on Design & Expectation' takes place. All visual mock-ups are presented at the exhibition. During the day, the presentations are planned in which students, just as in a regular conference, present their work in a verbal presentation. During the general lunch break of the faculty, friends and faculty members are invited and students can explain their exhibited designs.

5   CASE STUDY

A design for an electric shaver for Japanese youth was made by student Huub Mulhof. A very brief impression of this case study is shown in the following. Interesting in this case is the thorough use of mapping in combination with personas resulting in an interesting integration of real values and style characteristics. See figure 2.

Figure 2. An electric shaver for a group of Japanese youth

The final design is a calm and high tech design, with on the inside a little transformation of the style as a special and personal secret for the group of people related to the fashion subculture called Aoki's Fruits, where during the week students wear uniforms in the weekend they get dressed up.

6   EVALUATION OF THE COURSE

Reviewing the course from a context view, it was very interesting to discover that due to the course set up, students started to play with the research information and as a consequence alter and develop all kinds of design and styling methods. Examples of mixing theories are a differentiation matrix in combination with persona's, or product mapping on product characteristics and gender characteristics, or a different step based design method in which extra steps were added, or, last but absolutely not least, research theories that were derived and translated into design methods. For instance the development of a method based on the theory that humans are predisposed to anthropomorphize, meaning that they project human emotions and beliefs into anything, including into products as well. One of the metaphors for an experience based toothbrush was the butler who always is there to assist you and make things as comfortable for you as possible.

The products to work with have a large influence on the project results. Some products bring limitations as they are not used all over the world such as a vacuum cleaner and a coffee maker. Some products trigger different levels of emotion and personal values by virtue of the product type itself. For example, people have another relation with products close to the body than products not related to the body. This can result in, for instance, a possible bigger emotional bonding, or a product that easier triggers people due its design and styling [9]. In a certain way a product is also related to, and has impact on our daily life and routine. Take for instance the electrical toothbrush. Tooth brushing is about the first thing we do when we get up and about the last thing when we go to bed. It helps you personally to look good with clean teeth and a healthy breath. And it is also part of the Islamic cleansing ritual described in the Hadith. Or take a vacuum cleaner which is related to personal domestic values of people. Another important and influential product value, is feeling at ease when using a product or being triggered or challenged by the product to use it. Another interesting aspect comes when the product itself incorporates a ritual, such as with a wake-up light.

The influence of product values relates to another important, but difficult aspect of the course for some of the participating students. The translation of abstract research information from literature, in combination with visual research information into new product design and styling ideas, is not always easy to grasp for all students. In the beginning of the course, some students just start with pasting apparent style characteristics on the surface of the product. One extreme example of misunderstanding was a concept idea based on Zen values for which the student took a picture of piled stones and printed it on the surface of the product. Fortunately the student understood the principle of the underlying values and the way of translating them to product design and styling characteristics better towards the end of the project. This example also reveals the importance of the progress meetings and the design workshop in this course.

The translation process is also depending on the themes students are working with and the way they focus. Some students prefer to focus on one theme in general and others include several themes in one approach. However, themes in themselves are very different as well, in that some themes are currently more popular in the design research world than others. Experience and emotional product design is a popular research area. All kinds of advanced explanatory and design approach models are available and still being developed. On themes like 'Gender and influences on product design' and especially the non western cultures such as the 'Culture of Japan and influences on Product design' or the theme 'Cultural influences of Islam on Product design', less advanced research is available. As a consequence, the student approach among the different themes differs as well, with students entering the research field on different levels.

In short, students focussing on the experience and emotion themes are more inclined to develop new design approaches or alter existing ones. Students focussing on for instance the 'Cultural influences of Islam on Product design' need to understand the Islamic influences on products in themselves, which are very much related and dependant on the regions in which it is practised. In Islamic culture, decoration is highly valued and has a rich symbolic content, even a simple circle has an important meaning. Students have to translate another's cultural characteristics to design principles themselves. Some students address this situation by combining different themes of the course. To gain better insight in the different themes, students also gather information for their research in all kinds of related areas such as psychology, sociology or anthropology studies.

The research may focus on the aspects of the human-product interaction and on playing with possible design approach models or the deeper layers of human product interaction in these cultures, developing more complex interaction models and richer based designs. In line with the goals of this course, it is important to decipher the underlying values and translate these to a new design adjusted for the product in relation to people's emics. It is more than just copying a print. The conceptual thinking based on behaviour and cultural values result in far better product design and styling. And depending on the type of product in combination with the chosen theme, many appealing approaches are used by students every year, which keeps the course very interesting year after year.

From a gender perspective, the author analysed the kind of choices made by students in the gender theme and a surprising result came up. Apparently, in line with the Moss research [10], women designed their final design more for women and men designed more for men or gender neutral/ unisex. About three quarters of the women in the gender theme designed their final design for women, and the rest of the women designed for men. About 60 percent of men designed for men, and of the other men, about as much men designed for women as for a gender neutral/ unisex design.

Reviewing the course from a pedagogical point of view, it was new for students to write an abstract before the total work was written. Even so, it helped them in their focus for the optimisation phase of their concept ideas. Writing a paper helped students in their focus on the subject as well. In contrast to a report in which students have much more space to elaborate on relative unimportant aspects, with a paper students have to stick to the core within the maximum of eight pages. Interesting, however, is that even so, hardly any student uses all of the eight pages as most students need six to seven pages.

Another difficulty for the students appears to be the planning of the work load over the total course evenly. In the beginning, when they have to read a lot for the analysis students take a slow start and toward the end, stress levels rise as they have to finish their work, resulting in a higher work load. Students who logged their time working on the project noticed this aspect. However, other students who did not log their time get frustrated about the amount of work when finishing the project. They wish more time for the course. The progress meetings are helping students with their planning, as they have to show new work and during the meeting they get to inspire for new work. Another interesting

and partly time related item which is mentioned in several papers, is that students would like to test their presented designs among the actual users. And this is indeed a very important aspect. Unfortunately, the time within this course is limited to incorporate a test as well. It would be interesting or to lengthen the course or to connect this course to a statistical research based course in which their designs could be used for testing.

7 CONCLUSION

First remark may be that the course set up shows an interesting way to incorporate the newest research in educational design practises.

When analysing the course evaluations, it shows that students indeed like the course set up of this Master course Design & Emotion. They do not want to skip any part of it. However, as discussed in the previous paragraph, they prefer more time to work in. This article, describing the set up of the course Design & Emotion, incorporating a research in combination with a design and styling approach, may inspire other lecturers to incorporate a research and design and styling approach in their education as well.

Did it inspire students to do more research? Many graduating IDE master students tend to use research based approaches developing and describing their used method and testing their results in practise during their graduation project. Several students started a research project after their graduation. It also did inspire a colleague to request a paper in course instead of report as well. If this research motivation is all due to this course set up, is of course too strong to say. Let's hope students and graduate students keep being inspired doing research in the very interesting design and styling research field. This course set up may be a step in that direction.

ACKNOWLEDGEMENT

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