

Design Relaxa

combining Human-Centric Lighting and Emotion-Driven Design for the design of novel interactions with a hanging fixture

Public summary bachelor assignment Industrial Design Engineering

University of Twente, The Netherlands

By: Anthonie Blonk s2156547

Topic: Design of novel human-technology interactions into a hanging fixed LED fixture for Masterlight

Introduction

Design Relaxa describes the process in which novel interactions are designed into a new hanging fixed LED fixture. This process is the bachelor assignment for Industrial design Engineering, executed for Eurolight B.V. in Panningen, and specifically for their brand Masterlight. In accordance with Masterlight, the project focuses on the design of novel interactions by means of a new hanging fixed LED fixture. Therefore, the following research question should be answered:

“How can new human-product interactions be implemented in a new hanging fixture for the fixed LED fixture collection of Masterlight to be innovative?”

By answering the main research question, value is gained for both Masterlight, by means of a new fixture design and the exploration of new interactions, and for the academic world because of the application of research.

Approach

For answering the main research question the following strategy is followed. Firstly, literature and market research are executed to define the general needs and wishes of the target group. Furthermore, the research is an exploration of the applicability of Human-Centric Lighting (HCL) and Emotion-Driven Design (EDD).



Figure 1 Image of Real II, part of the Real series of Masterlight (Source: Masterlight.com)

Secondly, the actual design process is used to explore to what extend HCL and EDD can be applied in the design of a commercial product. The new design is a continuation on the current Real series (see

figure 1). This altogether is integrated in a standard design process, from preliminary research until prototyping.

Thirdly, already during the design process, the fixture is designed to suit the current Masterlight collection. However, by means of a working prototype, staff from Masterlight could judge whether the new fixture is commercially interesting.

Results

Literature research into the principles of HCL shows this concept is most applicable for public spaces. However, the part focussing on the circadian rhythm of the users, seems applicable in domestic settings (Houser and Esposito, 2021).

The theory of EDD shows that emotions are always present during product use and therefore deliberately evoking specific emotions, adds value to the user-product interactions (Forlizzi and Battarbee, 2004). Even more, "Not considering these emotions in the design process is a missed opportunity at best" (Desmet, 2012 p.1). Therefore, a selection of his 25 positive emotions is used as a guide for the design of the aesthetics and interactions of the new fixture.

Although interviews with retailers did not reveal a specific need for new interactions with lighting fixtures, it revealed a need for a combination of good quality lighting with high aesthetical value for a reasonable sales price (not exceeding €1000, -). Therefore, the good quality lighting of the current Real is the starting point and EDD is used to deliver aesthetical value. On top of that, EDD and HCL are used as a source for meaningful novel human-product interactions. Integrating these theories into the standard design approach, results in three concepts for the evocation of relaxation, satisfaction, and courage respectively. From these concepts, relaxation is chosen, leading towards the design of Relaxa.



Figure 2 Impressions of concept Satisfaction

The concept of satisfaction (see figure 2) is used to show how HCL and EDD are applied in the design of a new hanging fixed LED fixture. Based on market research, literature, and the vision of Masterlight, the aesthetics and interactions the current collection, while being innovative. To fulfil the need of the target group, that consists of Dutch middle-class adults with of focus on the 50-60 years old, for not too much innovation (Juric and Lindenmeier, 2019) and for good quality lighting.. Therefore, a standard spherical metal pushbutton of Masterlight is used for the dim-to-warm function and a second one is integrated in the concept Satisfaction, for activation of the novel interaction of automated dimming, for a positive stimulation of the circadian rhythm.

Because humans are emotional (Forlizzi and Battarbee, 2004) and can make associations between products and their world by means of interactions (Van Rompay, 2008), the emotion of satisfaction is designed into the product through smooth and curved shapes. The visual interaction and the interaction of touching, give the user a satisfying feeling.

Conclusions and recommendations

As the design results show, novel interactions with a fixture can be designed using a combination of HCL and EDD. As estimated by the staff of Masterlight, Relaxa has potential for the market because of mainly its form language, which is mostly the result of the application of EDD. Therefore, in contrast to HCL, that is really restricted applicable for domestic lighting, EDD can function as a rich source of inspiration for future fixture designs, while delivering emotional value to the users. Presenting Relaxa to clients of Masterlight would show its commercial value.

References

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