Assessing methods for effect-driven design: Evaluation of a social design method

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The study reported in this paper describes the evaluation of the Social Implication Design (SID) method. This effect-driven design method aims to support designers in designing the influence of design manifestations on behaviour in order to counteract social issues. To study the effectiveness of the method, both a multiple-case study with designers and a narrative-based study with social experts have been executed. Based on our findings we discuss the strengths and weaknesses of the method, and suggest improvements. We conclude this paper by reflecting on our approach as research methodology for assessing effect-driven design methods and argue that qualitative studies, prior to validating design methods quantitatively, will increase the significance of design methodology for design practice.

Keywords: design methodology, evaluation, social design, effect-driven design

Design methods are assumed to improve design performance. The purpose of methods is to transfer know-how between people over time and space. In doing so, methods are expected to help the designer to structure their thinking, to remind them of essential steps, and to help them working effectively and without too many detours (Daalhuizen, 2014).

Research into the act of designing, i.e., its principles, practices and procedures, is what is called 'design methodology' (Cross, 1984; 2007). Design methodological studies aim to model the design process and/or to develop design methods. Essential in this research is to identify the 'ingredients' for good design performance. Therefore, some studies examine outstanding or successful individual design approaches (e.g., Cross, 2003; Fricke, 1996), while others compare the design process of novice designers/advanced beginners with those of experienced/senior/expert designers to identify successful strategies (e.g., Ahmed, Wallace, & Blessing, 2003; Atman, Chimka, Bursic, & Nachtmann, 1999; Daalhuizen & Badke-Schaub, 2011). Within these studies, design performance is often judged by the quality of the outcome and the efficiency (and quality) of the process. But whereas time is easy to record and compare, quality is certainly harder to assess (Atman et al., 2007). Given Simon (1969)

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definition of design as 'changing existing situations into preferred ones', one would expect that quality refers to how well a design solution realises this 'preferred situation'. But assessments of quality are mostly assessed in terms of meeting criteria and constraints (e.g., Atman et al., 1999), by judging the creativity of the outcomes (Cross, Christiaans, & Dorst, 1994), and sometimes even (partly) by judging the quality of sketches/drawings (Radcliffe & Lee, 1989).

Apart from design methodology, other types of design research have also led to methods for design. For instance, user experience (UX) is put forward as a domain of enquiry to understand how design can contribute to quality of life (Hassenzahl & Tractinsky, 2006), stimulating scholars to develop design theories and methods on the subject. In line with this, tools and techniques have for instance been developed to deliberately design rich user experiences (Fokkinga & Desmet, 2013). This shows that the more we understand the consequences of product use on the (wellbeing of the) user, the more we discard the idea that the physical or functional aspects of products are the main objective of designing. On the contrary, design scholars now start to explore how design can support people in becoming the person they wish to be (Zimmerman, 2009) or in applying the willpower to resist destructive temptations (Kehr, Hassenzahl, Laschke, & Diefenbach, 2012; Ozkaramanli & Desmet, 2012). Similarly, our growing understanding of the consequences of product use on people and our planet has led to methods for what can be called (socially) responsible design. Studies on mindfulness (Niedderer, 2007), emotional durability (Chapman, 2009), or design and behaviour change (Lockton, Harrison, & Stanton, 2010; Tromp & Hekkert, 2012) have led to frameworks, tools and techniques to support the designer in designing products for intended social or environmental impact. Whether they imply individuals, the social or the planet as a whole, in a fast pace, new methods are being developed to support what we may call *effect-driven design* (Fokkinga et al., 2014).

Clearly, these studies focus on a different unit of analysis than design methodology traditionally does. In these studies, the effect products have on users and their environment is studied, rather than the act of designing. This means that in contrast to how earlier methods are the results of 'research on design,' these methods are derived from 'research for design' (Forlizzi, Stolterman, & Zimmerman, 2009). Due to an expansion of this latter type of design research over the last decades, the number of methods has increased rapidly, while few have been evaluated rigorously (Blessing & Chakrabarti, 2009; Dorst, 2008). In other words, scholars in 'research for design' who produce methods hardly ever extend their work into 'research on design' to assess whether design performance indeed improves thanks to the use of their methods.

In sum, many methods are being produced in design research and are expected to improve design performance. Generally, design performance is judged by