

Inspiration and fixation: Questions, methods, findings, and challenges



Luis A. Vasconcelos, Engineering Design Centre, Department of Engineering, University of Cambridge, Cambridge CB2 1PZ, UK, CAPES Foundation, Ministry of Education of Brazil, Brasília – DF 70040-020, Brazil
Nathan Crilly, Engineering Design Centre, Department of Engineering, University of Cambridge, Cambridge CB2 1PZ, UK

Research into inspiration and fixation has produced a complex web of questions, methods, and findings, making it difficult to know what has already been investigated and learnt, and what to investigate next and how. To address this, we review the literature, focussing on 25 studies that adopt a similar experimental approach. This reveals 14 manipulated variables, relating to properties of the inspiration source and features of the design process. However, whilst these studies follow a similar approach, when scrutinised and compared, they show great variety in the methods used and the results obtained. We discuss this diversity, offering a methodological critique of inspiration and fixation research and providing recommendations for how future studies might be conducted and reported.

© 2015 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: fixation, creativity, design process, problem solving, design research

Creativity is often associated with better designs in education and practice (Christiaans, 2002) and is considered a prerequisite for invention and innovation (Sarkar & Chakrabarti, 2011). This has motivated design researchers to conduct many empirical studies into creativity. In particular, a number of studies have focused on using external sources of inspiration to stimulate the idea generation stage of the design process. These external stimuli are introduced to the design process and are known to help designers arrive at new ideas that it would otherwise be very unlikely to emerge. As such, many studies highlight the positive outcomes and benefits of using external stimuli during idea generation (e.g. Dugosh, Paulus, Roland, & Yang, 2000; Dugosh & Paulus, 2005; Liikkanen & Perttula, 2008; Nijstad, Stroebe, & Lodewijkx, 2002; Perttula & Liikkanen, 2006a). However, when designers are provided with example solutions to the problem that they are considering, this may unfavourably interfere with the creative process, a phenomenon that has been called ‘design fixation’ (Jansson & Smith, 1991). In researching this phenomenon, the negative effects of external inspiration sources have been extensively discussed by many researchers (e.g.

Corresponding author:
Luis A. Vasconcelos
la140@cam.ac.uk



www.elsevier.com/locate/destud
0142-694X *Design Studies* 42 (2016) 1–32
<http://dx.doi.org/10.1016/j.destud.2015.11.001>
© 2015 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Dahl & Moreau, 2002; Linsey et al., 2010; Perttula & Sipilä, 2007; Purcell & Gero, 1996; Smith, Ward, & Schumacher, 1993).

The prevalence of studies into inspiration and fixation allows authors of such studies to frame their research with a review of other similar work. These studies have also recently been the subject of more extensive surveys, reviewing fixation classifications and types (Youmans & Arciszewski, 2014), and performing a meta-analysis of the results of a set of comparable studies (Sio, Kotovsky, & Cagan, 2015). These two reviews contribute to the literature in different ways: the first is qualitative and classification-oriented, defining what is being studied; the second is quantitative and results-oriented, revealing what has been found. However, there has not yet been a thorough methodological analysis of how the studies are conducted. This makes it difficult to establish an overview of the experimental choices and setups adopted, and difficult to interpret and compare the results obtained. To address this, the present paper reviews the relevant literature from a methods-oriented perspective, focussing on how the studies have been designed and implemented. Whilst the studies typically yield quantitative results, describing the methodology used to obtain such results (and the ways in which it varies) is largely a qualitative matter. As such, we do not aim to integrate results and identify patterns in the literature, but to acknowledge the diversity of results in the field and explain such variety based on methodological factors. We highlight where results conflict, provide some reasons that could explain this, and suggest what other concerns researchers should have about the literature. In doing so, the paper contributes towards a better understanding of the different ways in which inspiration and fixation can be studied, and how the results should be interpreted. Our objective is to help the field to clarify some of its current issues and to plan its future directions.

The rest of the paper is structured as follows. To establish a broader context for our analysis, Section 1 reviews the early psychological research related to fixation and compares it to empirical design research, presenting an overview of how fixation is interpreted and studied. Section 2 reviews the research questions asked in the literature, the variables manipulated to address those questions, what those experiments have found and where those findings conflict. The studies are grouped with respect to the aspects they examine, a grouping that is not obvious from the literature because the relevant variables by which the studies can be interrogated and compared are often only implicit. Section 3 reviews some challenges to interpreting the current research, especially methodological details that vary between experiments. These include potentially important variables that have not been systematically manipulated, differences in what is measured and how, and possible explanations for the measured effects. Finally, Section 4 makes recommendations for how research into inspiration and fixation could adopt a more consistent

Download English Version:

<https://daneshyari.com/en/article/6726726>

Download Persian Version:

<https://daneshyari.com/article/6726726>

[Daneshyari.com](https://daneshyari.com)