Design Thinking & the Cognitive Neuroscience; A Review of Last Decade

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Considering increased importance of design thinking to solve complex problems, firms are increasingly incorporating design thinking in its operations and systems to introduce innovative products and services. In this regard, contemporary literature is engaged in studying design through brain imaging techniques to understand the neurological basis, however, understanding related to this is scant. The purpose of this research is to bridge the literature from psychology and neuroscience, hence establishing an understanding of interrelations between brain activity and components of design thinking on cognitive level. The study reviewed 15 shortlisted research papers from Journal Citation reports (JCR) specifically those included in Journal Impact Factor (JIF) and Scopus database from 2010-2020. This systematic review highlighted the frequent use of functional magnetic resonance imaging to study the multifaceted cognitive competencies involved in design thinking. Moreover, creativity, divergent thinking and spontaneous improvisation are the most studied design thinking' components in the last decade. Furthermore, brain areas including dorsolateral prefrontal cortex, medial temporal lobe, posterior parietal cortex, insula, posterior cingulate, and cerebellum were repeatedly reported to be activated during design thinking. The study highlights the lack of literature available and concludes the research done in the last decade related to design thinking and cognitive neuroscience. Additionally, this research helps future researchers to focus on lesser studied areas than those that have reached saturation or may reach to that point soon in design thinking.

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