

A Systematic Review of Design Research Approaches in Architectural Design Processes

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ABSTRACT: This paper reviews 70 scholarly studies to explore and organize key methodologies in architectural design research through a systematic lens. It is grounded on three widely used frameworks: Frayling's research into, through, and for design; Cross's typology of design knowledge as epistemological, praxeological, and phenomenological; and Buchanan's basic, applied, and clinical research model. The study employed a structured review procedure, following PRISMA guidelines, to evaluate articles from 1982 to 2023 in major scholarly databases. A shared set of strategies and methods was also developed for each type of design research. The proposed conceptual framework—derived from the timing of the research intervention (pre-, through-, or post-design)—provided a more distinct charting of the research landscape. It revealed prevalent clusters of design research practice, each shaped by unique pairs of epistemological emphasis and methodological stance. Based on past studies, this research developed a further typology known as research through design (II), an expansion of the three earlier categories. By offering a distinct and understandable classification, the article aims to assist architecture students, instructors, and novice researchers in selecting the most suitable research approaches. The conclusions enhance the clarity of architectural education and help position design research as a central component of both academic study and professional practice.

KEYWORDS: Design Research, Architectural Education, Research about Design, Research through Design, Research for Design, Systematic Review.

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INTRODUCTION

Design research has gained increased importance in the international research environment, emerging as an independent method of inquiry situated between the scientific and creative realms. Research practice, design process, and design problems have led to the development of various research approaches, connecting knowledge production to design and architecture. Design ideas and knowledge production intersect through numerous productive encounters and analogies. Academic research and design research exist as separate entities, yet each maintains its unique set of epistemic, aesthetic, and social considerations. (Hensel & Nilsson, 2019).

Design research is not only a theoretical construct; it is also a form of knowledge creation rooted in the practice of designing itself (Cross, 1999; Findeli, 1999). Despite its relatively short history, the foundation for thinking about contemporary design issues has been developed and promoted by many committed academics and practitioners, not all of whom offer the same taxonomy (Frankel & Racine, 2010). In the conference "Design: Science: Method" held by the Design Research Society in 1980, Archer defined it first, and then in 1981, with the publication of a book titled "Systematic Methods for Designers," he considered design research as systematic inquiry performed to generate knowledge of the form/embodiment of – or in – design, composition, structure, purpose, value, and meaning of human-made things and systems (Archer, 1981). Archer's definition is