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Perspective essay

‘Research through designing’ in landscape architecture

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HIGHLIGHTS

- Landscape architecture has to articulate ‘research through designing’ (RTD) methods.
- RDT should meet academic research requirements depending on the knowledge claim.
- Knowledge claim framework: (post)positivist, constructivist, participatory, pragmatic.
- RTD methods and research evaluation are described according to knowledge claims.
- Differentiating RTD according to knowledge claims sharpens methodological discourse.

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ABSTRACT

There is a general consensus amongst landscape architecture academia that the discipline has to urgently advance its methodological repertoire to generate new knowledge and thus strengthen the academic position of landscape architecture. To enhance the methodological repertoire, the core activity of landscape architecture – designing – needs more emphasis in research. Therefore, we shed light on methods that actively employ designing within the research process or ‘research through designing’ (RTD) in this essay. We position ‘research through designing’ in general discussions on research and design relations and indicate its great importance for landscape architecture research. Building upon Creswell’s well established overview of knowledge claims ((post)positivist, constructivist, advocacy/participatory and pragmatic) and related research methods, we categorize different types of RTD for landscape architecture in these knowledge claims. For each claim, we articulate types of new knowledge that is searched for, related research questions, appropriate RTD methods and evaluation strategies. In grounding RTD in Creswell’s framework, we argue that many types of designing can be a respected research method when they comply with the respective rules. With this overview, we would like to facilitate further methodological discussion in landscape architecture and enhance interdisciplinary communication and cooperation with other academic disciplines.

1. Introduction

The aim of this essay is to discuss research methods for landscape architecture that actively employ designing and comply with generally accepted rules for academic research. We expect this to sharpen and open the debate on landscape architecture specific research methods.

The call that landscape architecture, as a maturing academic discipline urgently needs to develop its methodological repertoire to generate new knowledge, has become quite persistent over the last decades (Benson, 1998; Brown & Corry, 2011; Deming & Swaffield, 2011; Milburn, Brown, Mulley, & Hilts, 2003; Milburn, Brown, & Paine, 2001; van den Brink & Bruns, 2012). Deming and Swaffield condense this by posing that production and consumption of knowledge is the ‘new normal’ in landscape architecture academia. They state that as the discipline expands and engages with other disciplines, there is a need to broaden and deepen academic thinking. (Deming & Swaffield, 2011)

So, landscape architecture needs to develop research methods that are discipline specific and academically accepted. Since we see designing as the core activity of landscape architecture’s community of practice, discipline specific research methods will include combinations of research and design(ing) (Creswell & Plano Clark, 2011, p. 47). To investigate such methods, we have done an international literature content analysis, not only in landscape architecture, but also in other disciplines that link research and designing.

When we use the term ‘research’, we mean curiosity or question driven, rigorous academic research as defined in different

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disciplines (Creswell, 2009) and not the loose meaning of 'research' that had already been criticized (e.g. Milburn & Brown, 2003). By 'designing', we mean the process of giving form to objects or space on diverse levels of scale and when we speak about 'design', we mean the results of a design process. The process of 'designing' can include creation of 'designs' i.e. new objects on a 1:1 scale. In landscape architecture however, the designs are usually projected first, either in plans, scale models, computer simulations, or various other media. These are also a result of a design process and thus a 'design'. These designs may be made with the objective to be executed, such as detail designs or with the aim to contribute to changing an environment in a more abstract, visionary way (Filor, 1994).

There is a variety of relations between design and research that have been addressed in the literature within which we can identify three groups of research and design interactions. In the first group, 'research for design' research informs design to improve the quality of the designed artifact and to increase its reliability. This kind of (scientific) research can also be conducted by other disciplines than landscape architecture, e.g. by ecologists, hydrologists or planners. Such knowledge is then translated by the designer to substantiate the design (examples see Deming & Swaffield, 2011, pp. 90–100; Groat & Wang, 2002, pp. 203–248). In the second group that can be circumscribed by 'research-on-design(ing)', research is carried out on finished design products (substantial) or on the design process (procedural). Landscape architects or other researchers (e.g. sociologists, historians or geographers) carry out this kind of research. Examples are post occupancy evaluations (e.g. Deming & Swaffield, 2011, pp. 72–77, 180–184), case study research (e.g. Francis, 2001; Groat & Wang, 2002, pp. 341–374) and plan analyses (e.g. Brinkhuijsen, 2008). In the third and last group that received various names such as research-by-design/research as design/research through design, the designing activity is employed as a research method (Deming & Swaffield, 2011; Duchhart, 2011; Jong & Voordt, 2002b; Lenzholzer, 2010; Nijhuis & Bobbink, 2012; Zeisel, 2006). We want to focus on these kinds of methods that inevitably require the inclusion of the essential activity in landscape architecture: designing.

This latter type of research was contested for several decades as a valid research method (Groat & Wang, 2002; Lang, 1987; Milburn & Brown, 2003). Recently, however, the 'practice turn' (Schatzki & Knorr Cetina, 2001) has evoked a shift of thinking in many academic disciplines that lead to a growing acceptance of practice as a research method (Borgdorff, 2012; Gray & Malins, 2004; Sullivan, 2010). Landscape architecture academia too stressed the necessity to use designing in research processes to generate new knowledge that is urgently needed for the development such as substantial or procedural design guidelines (Lenzholzer, 2010; Nijhuis & Bobbink, 2012; Steenbergen, Mihl, & Reh, 2002). Moreover, other non-design disciplines started to value the contribution of designing in knowledge production (Musacchio, 2009; Nassauer & Opdam, 2008). Based on the work of Jong and Voordt (2002a) in architecture and urban design (Breen, 2002; Klaasen, 2007), 'study/research by design' methods have been employed for some time. Their definition of 'study/research by design' relates clearly to buildings and building typologies and is embedded in a positivist thinking tradition. Their landscape architect colleagues at Technical University of Delft have also used this technique (Nijhuis & Bobbink, 2012; Steenbergen et al., 2002; Steenbergen, Meeks, & Nijuis, 2008). We consider this 'research by design' definition too narrow for landscape architecture because landscape needs to be addressed as a dynamic, highly complex larger scale natural and socio-cultural system.

Deming and Swaffield partly build their exploration of the potentials for 'research by design' as a research strategy for landscape architecture also on Steenbergen's work. They call this type of inquiry 'projective design' and treat it as a purely subjectivist strategy. In their opinion, the principles to legitimate projective design as a research method are only beginning to emerge, and are of limited relevance to generate new academic knowledge (Deming & Swaffield, 2011, pp. 205–222). Putting Deming and Swaffield's ideas on 'projective design' into the perspective of general literature on designing processes within research (Eder, 1995; Simon, 1996; Sullivan, 2010), we think that they do not sufficiently acknowledge the value and potentials of designing as a constitutive part of academic research processes.

Given the lacunas in definitions and the lack of acknowledgment of landscape architecture designing activities as a research method, we want to suggest more precise definitions, sketch more potentials, and show how landscape architecture designing can produce relevant new knowledge. We will use Creswell's framework because it is widely accepted in all academic disciplines. This framework will help to order and discuss research employing designing and support its value for knowledge production.

Before we deepen the discussion, we want to first sharpen our definition of the term that describes methods that employ designing activity in the research process. Actually, all other terms such as research-by-design, research as design, research through design, used the word 'design' without clarifying its role as a verb or a noun. Since the use of a verb is more precise to denominate an activity, we will use the gerund form 'designing' in our definition. Therefore, we suggest to use the term 'research through designing' (RTD) to describe research methods that employ 'designing'.

In the following, we will first give an overview of Creswell's framework of knowledge production within different knowledge claims. Based on this framework, we discuss how new knowledge can be created for landscape architecture by employing specific RTD methods within these knowledge claims.

2. Epistemological framework of research

Creswell (2009) describes 'research' as a systematic activity to generate new valid and reliable knowledge or insights. He gives a broad inclusive account of different world views influencing research, the related knowledge claims, their main aims and related typical methods. Linking these core knowledge claims to different disciplines in which they are traditionally used, he outlines four knowledge claims in research theory: (post)positivist, constructivist, advocacy/participatory and pragmatic knowledge claims. Each claim has a different aim, related methods and value systems. However, boundaries between the four claims are not always that sharp and in pragmatist mixed methods procedures the underlying assumptions may be mixed (Creswell & Plano Clark, 2011; Schwartz-Shea & Yanow, 2012).

The positivist knowledge claims are rooted in the long tradition of the natural sciences. Scientific inquiry is considered to reveal 'objective' quantifiable knowledge. It often serves the verification of theory. The classical methods mostly consist of making propositions or hypotheses, which are tested rigorously and are then verified or falsified leading to formally considered absolute truths. The important criticism of Popper, Kuhn and others lead to a more relativizing postmodern view within this knowledge claim, rejecting the idea of absolute truths and pure objectivity. This also lead to the naming as (post)positivist knowledge claim. The criteria to evaluate research are generally validity, reliability and generalizability.

Social constructivism has a clear human-focused culturally grounded perspective in which attitudes, beliefs, interaction and experiences are the subjects of research. This knowledge claim is common within the arts, humanities and social sciences. The aim in social constructivist research often is the generation of theory or meaning. The researcher's intent is not to find generalizable and quantitative knowledge, but rather to 'make sense' of