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2022-09-16
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DOI: https://doi.org/10.54223/10539/35908

EXPLORING THE TRANSFORMATIVE POTENTIAL OF PRACTICE-BASED DESIGN RESEARCH (PBDR) METHODS IN ARCHITECTURAL DESIGN PEDAGOGY

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This paper discusses the application of practice-based design research (PbDR) methods in transforming the design practice of architecture students. It explores how reflection and diffraction, two PbDR methods, can be used to shape students' design practice and challenge institutional biases. The author shares the experience of implementing these methods in a third-year architecture design studio at the University of the Witwatersrand in South Africa. Changes were made to the curriculum, including the introduction of reflection and the use of diffractive methods, to foster personal and institutional transformation. The paper highlights the importance of collaborative dialogue, social reflection, and engaged pedagogy in this transformative process.

Practice-based design research (PbDR) methods have proved to be transformative for the design practice of established and early career practitioners in various post-graduate programmes. At the Royal Melbourne Institute of Technology (RMIT) in Australia, established architects "reflect upon their own mastery within a critical framework"; that is, through speculating about the future directions of their practice by looking at their ongoing work (Van Schaik 2004) they can transform their design practice. At the University College London's Faculty of the Built Environment (The Bartlett), practice-based design research is used to speculate on the future of design practice by continuing a long tradition of architectural research incorporating a "productive relationship between drawing, text and building … multi-directional [so that] … drawing may lead to building, writing to drawing or building to drawing and writing" (Hill 2013).

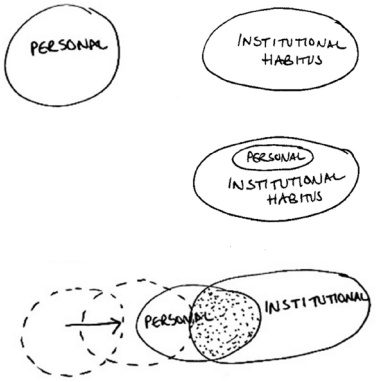


Figure 1 Diagram exploring personal and institutional habitus as per Payne – how success at the institution reveals a correlation between the student's personal habitus with that of the institution's, and how students are most often expected to adjust their personal habitus to the institution's

I sought to explore whether these same methods could also have a transformative effect on students' design practice. The obvious limitation in applying PbDR to third-year students at the undergraduate level when compared to mid-career architects in doctoral programmes is the much smaller sample of projects that students have to use as data for the PbDR reflections. The counterpoint to this constraint is that students' smaller body of work has not been buffeted by commercial restraints and, in many ways, students reveal their own design fascinations in adventurous projects without the limitations imposed by professional practice.

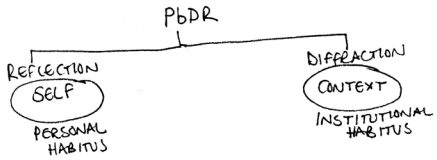


Figure 2 Diagram of Practice-based design research (PbDR) methods of reflection and diffraction and their application to personal and institutional habitus, with the reflection being a personal methodology of the self, whereas diffraction acting on and revealing the context, in this case, the institution

The architecture design studio as a site of higher learning is a microcosm of the university as a whole, reflecting its power dynamics. Jennifer Payne, a researcher who investigated the role of cultural capital and habitus[1] in architectural education, notes that the greater the correlation between a student's personal habitus or cultural capital and that of the institution, the greater success they achieve in their studies (Payne 2015). Lecturers reward those students who think like them and are more critical of students whose practice and ways of thinking diverge from their own. This reveals an institutional bias that can only be countered if the gap between the student's personal habitus and the institutional habitus is narrowed.

The work done in the third-year architecture design studio at the School of Architecture and Planning of the University of the Witwatersrand from 2019 to 2022 has aimed at bringing the personal and the institutional closer. On the personal level, students have worked on developing confidence in their own voice validating their life experience and background, thereby validating their personal habitus. At the institutional level, there has been critical acknowledgement of and engagement with the systemic issues that might be actively or passively working against the students' best efforts to succeed.

How Would One Apply PbDR in an Architectural Design Studio to Transform Student Practice?

Although practice-based design research methods of reflection and diffraction were introduced to the third-year architectural curriculum, their application to undergraduate study has a different purpose and context from where these methods emerged.

Reflection is a practice-based design research method introduced by the RMIT to bring to light through self-reflection such mastery as exists in mid- to late-career architects. Students similarly use reflection to focus on the self, working on their view of themselves and their habitus. The difference is that students are still devel-

oping their design practice, so the reflection assists in the process of finding and validating their own design voice and its origins. The transformative potential is that students will be less vulnerable to institutional bias if they develop a greater level of confidence and value their diverse design experiences positively in their design development journey.

Diffraction as a practice-based design research method emerged not from the RMIT programmes, with their focus on individual reflection, but rather from feminist research exploring the influence of context on the production of knowledge. Diffraction focuses on the students' context and the institution, critically examining and transforming the institutional habitus by revealing institutional bias and working to subvert it.

I started as a design lecturer in 2019 and inherited a 2018 syllabus predicated on the normative studio master model.[2] The first student project of that year, entitled *Manifesto*, had students analysing both their own past projects and a list of "master" architects' projects issued by the lecturer, and then drawing up a personal manifesto of who they were as designers. From 2019 to 2023, several changes were made to the brief of the *Manifesto* project to shift both the personal and the institutional habitus.

In 2019, on the level of personal habitus, the practice-based design research methodology of reflection was added, to encourage students not only to analyse their past body of work but also to reflect on it, seeking an understanding of what fascinated them across multiple projects, identifying issues to which they returned and re-explored in different ways. The aim was to begin to work on the personal level – to show students that each one of them had a particular viewpoint on design.

Reflection as a practice-based design research (PbDR) method has been used by various architectural postgraduate programmes internationally to unearth understanding and tacit knowledge of practice. Their example resulted in the following types of reflection being added to the project brief:

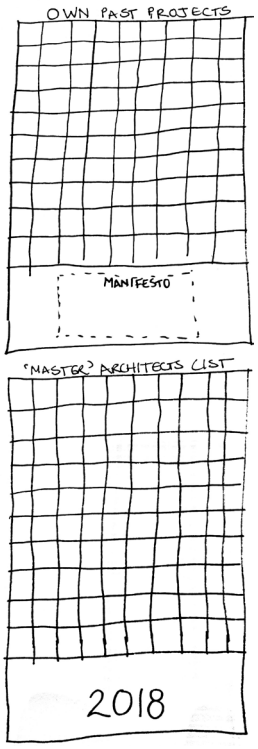


Figure 3 Manifesto project in 2018 – the inherited brief produced posters in a grid format – with very little interrogation as to the learning and tacit knowledge it could reveal

- *Reflecting on the student's body of work:* Reflecting on past practice, a type of curatorial, reflective, and retrospective practice that RMIT initiated through their so-called "Invitational Program"[3] that evidenced already established mastery in mid-career and established architects (in many cases award-winning architects).
- *Reflecting in the act of re-drawing their archive through fast hand-drawn sketches:* Schon's Reflective Practitioner revealed a practitioner's capacity for reflection during practice, evidencing an "intuitive knowing during action" that he termed "reflection-in-action." He demonstrated how this "knowing-in action" unites theory, research and practice, thought and action (Schon 1984).
- *Reflecting for future projects:* The RMIT programme reflects on past practice to transform future practice, "reading, looking within creative work for something that you're not sure what it is, perhaps you don't necessarily find it at all, maybe what you find is its direction which is its future" (Jennifer Lowe, in Van Schaik and Johnson 2019). As a counterpoint, the Bartlett Postgraduate programmes in Design do not reflect on past practice but rather imagine through design and theory new future practices.

Reflection is a cyclical PBDR method moving between, into, through and for practice, involving "acting and thinking as a continuum" (Lucas 2016, 43). Gray and Malins note that "we learn most effectively by doing," and adapt this principle into a "reflection-for-action" looping process where reflection on and evaluation of past practices yields to reflection in the present through insight and questioning, and reflection for future needs and hopes (Gray and Malins 2004). Blythe similarly speaks of a synthesised reflection model with different types of reflection happening simultaneously: retrospectively reflecting on the body of work; reflecting in the act of making, draw-

ing or designing, where reflecting and designing are simultaneous; and reflecting for future works that occurs in the act of designing current work, including "social reflection" (Blythe 2013).

"Social reflection" was added to the brief for the *Manifesto* project in the Wits third-year design curriculum, where students were paired to reflect on and tease out new insights into their own and each other's work.

Here learning takes place in non-hierarchical, multiple iterations and exchanges between the individual student and the world. It happens through language and other social contact. "Social reflection" (Blythe 2013) or "reflective conversation" (Ghaye and Ghaye 1998) is thus a collaborative dialogue that seeks answers to the questions posed by past practice, but also looks forward, venturing future possibilities for practice and thereby transforming practice. It builds on Finlay's introspective self-dialogue (Finlay 2003) but takes it one step further, a "reflective conversation" that moves from private self-dialogue to a public or collaborative dialogue articulated with others, and in so doing progressing from "unconscious into conscious forms of knowing" (Ghaye and Ghaye 1998). Reflective social dialogue is also much more than a method, it is an "open and mediating concept" (Buchert 2014) that seeks to ask questions about the situation and positioning of the researcher and their challenges and engagement with the subject. There is therefore reflection on "awareness of the interpretive act" (Alvesson and Sköldberg 2018), involving reflecting on the methods of research, the representation of the research and how these factors affect the research in ways of which the researcher is often unconscious. This process is overlaid on the methodological cyclical reflective loops and endows the process with meaning.

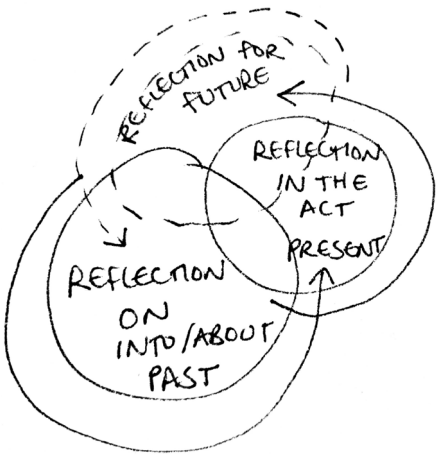


Figure 4 Diagram of reflective research loops on/in/for practice

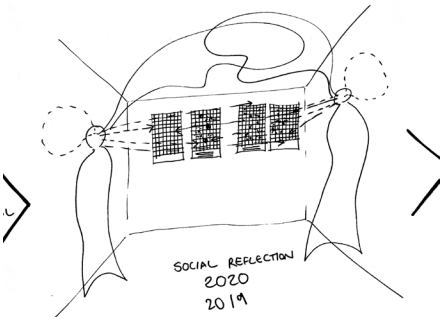


Figure 5 Social reflection in the studio with two students reflecting on each other's work

Barad's diffraction (2007) and Haraway's situatedness (1988) were added to the process to disrupt the cyclical inward reflection and instead reveal the material conditions of the institutional context. Haraway extended critical or strong reflexivity into "situated knowledge" (Haraway 1988), which still centres the researcher but highlights how the knowledge produced reflects the researcher's position in a particular social context and the conditions in which the knowledge was produced. Haraway moved firmly into a relational ontological perspective,[4] reinforcing Barad's "diffraction" (Barad 2014), which sees the human as one agent within an entangled network of human and non-human agents that includes objects and materiality, in this way decentring the human subject altogether.

Diffraction radiates outward from the student, and through "intra-action" (Barad) between the institutional habitus and the students' personal habitus, the boundaries of both are shifted. The diffractive view called into question the context created for the *Manifesto* project, especially by the list of 25 master architects' projects issued to students. This had previously included only one female, one African, and one South African architect. The list was expanded to be more representative, broadening the range of architects worthy of study to include more architects of colour, female architects and South African and African architects.

The outcomes of the students' work from 2019 onwards show the beginnings of an attempt to represent reflection across projects within the grid framework of the original project, with unifying concepts across projects depicted through graphic representation such as geometric shapes, colour and line.

After some critical reflection on the outcomes of the 2019 *Manifesto* project, more changes were made in 2020. On the institutional level, diffractive methods disrupted the studio master model with the introduction of a parallel engaged pedagogy.

This parallel engaged pedagogy merges the pedagogies of transformation of Freire, De Sousa Santos and bell hooks and applies them to a South African architectural

studio. All three are rooted in the physical or metaphorical contexts of the global South, teaching oppressed, marginalised or diverse communities and therefore particularly relevant to the South African context. Their relational, collaborative, dialogical and engaged pedagogies were borne out of the constructivist mode, placing the impetus on the students' own learning and understanding. Freire's co-responsible model of education rejected the banking model of education and instead encouraged students to develop a critical awareness of their social, political and economic reality by exploring together and alongside each other (2017). De Sousa Santos's *Epistemologies of the South* sought a "knowing with, understanding, facilitating, sharing and walking alongside" students (2014, 9). Freire's idea of conscientisation, in terms of which the student is made aware of their context, appears in bell hooks as the "critical awareness and engagement" of active participants. Her theorising extends Freire's critical pedagogy to an "engaged pedagogy" that sees education as a practice of freedom, where learning arises from an interactive relationship between student and teacher, emphasising the well-being and self-actualisation of both (hooks 1994, 14–20). It is this emphasis on well-being and self-actualisation that differentiates the parallel engaged pedagogy from the traditional studio master model. The parallel-engaged pedagogy is enacted in the studio with me sitting with students, re-drawing my archive while they do the same.

The purpose was to dismantle the institutional, systemic hierarchy inherent in the relationship between student and teacher in the studio by subverting the traditional studio master model (see footnote 2).

The parallel-engaged pedagogy expanded the social reflection activity from pairs of students to between the lecturers and the class. Two lecturers enacted the social reflection around a personal spatial narrative poster, engaging the whole class, and deriving meaning from understanding their own work and context of practice. The social reflection that this public dialogue facilitates occurs through the contextualisation of the researcher, and an initially non-discursive presentation that becomes discursive, where the lecturers and the students "co-construct knowledge and meaning in a collaborative interaction from which both take away new ideas, knowledge, skills and understanding" (Hughes 2012). This expanded social reflection was filmed, adding another layer to which the lecturer could return for further reflection.

Students were also encouraged to change the organisation of their *Manifesto* posters from the 2019 grid to a reflective narrative structure entitled Ways of Seeing, seeking to represent the link between projects through a narrative or conceptual structure rather than the grid framework of previous years.

In 2021 the *Manifesto* project moved online because of the Covid pandemic and became a series of disembodied voices discussing work shared on an online platform. The brief now focused more on the personal spatial narrative, encouraging students to understand and unpack where their particular way of seeing or spatial practice originated from. The project encouraged the students who were stuck at home to reflect on their familiar environment and how it shaped their design practice. Continuing the parallel engaged pedagogy, I posted my own drawings on online visual pin-up platforms alongside the students and shared my self-ethnographic research on my ways of seeing and practising.

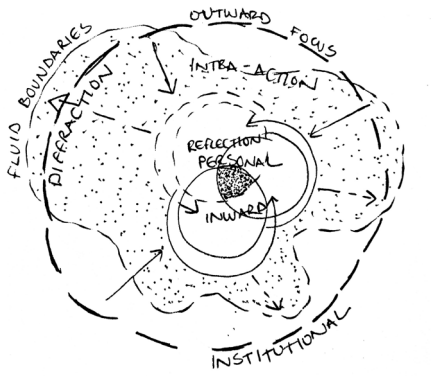


Figure 6 Diffraction breaks apart the self-introspective reflection by focusing outward on institution

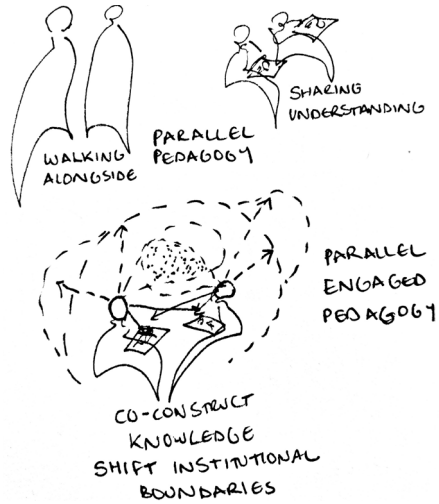


Figure 7 Parallel-engaged pedagogy– teacher walks alongside the student, sharing understanding, co-constructing knowledge and shifting institutional boundaries

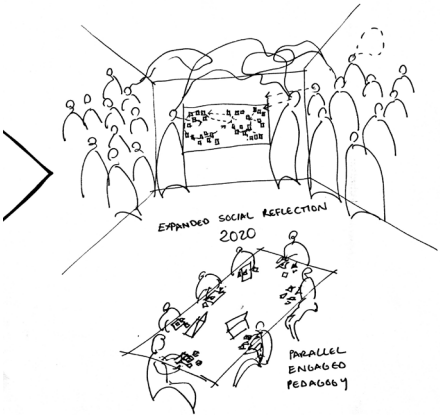


Figure 8 Expanded social reflection as part of the parallel engaged pedagogy

Digital access was a double-edged sword: on the one hand, it exposed students' unequal access to the digital world, exacerbating previous inequalities; but on the other hand, it afforded students intimate access to each other's entire design process on online pin-up boards.

We countered the inequalities that had come into sharp focus by moving to student-led, agile and adaptable strategies, meeting with students at times that suited their data, doing telephonic or WhatsApp crits when required, and organising data and loaned laptops before the university-wide programmes had been initiated. To support the newly available access to every student's design process, the brief broke up each step with deliverables to be posted online accompanied by built-in peer review. This online peer review replicated to a degree the peer-to-peer learning of the physical studio, whilst taking it a step further, given the permanent access to other students' work processes.

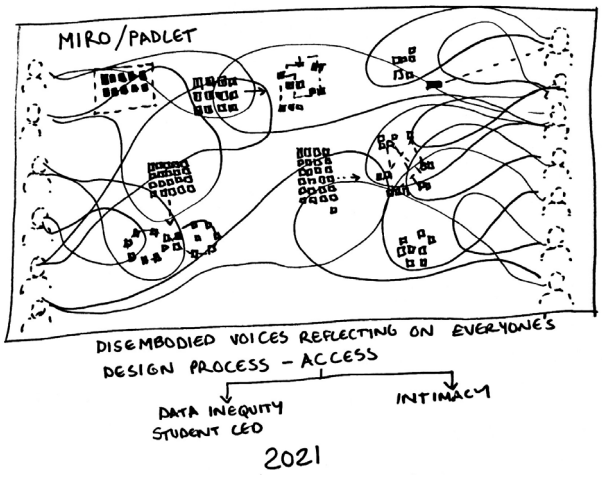


Figure 9 Manifesto project online revealed contested accessibility – intimate access vs data inequity

The student outcomes displayed a move to deeper, more personal reflection, with students unearthing the origins of their design processes both in the manifestoes and in the reflective personal narrative posters, as well as through written personal spatial narratives.

The year 2022 started with hybrid learning, with the aim of incorporating the positive aspects of online learning (intimate access to the whole class's design process) with in-studio tasks.

The spatial memory drawing that one student had drawn in 2021 as part of their personal spatial narrative became part of the *Manifesto* project for all students. The personal spatial memory expanded the reflective exercises in the manifesto project to a time before the students commenced architectural education. Its purpose was to unearth each student's personal spatial habitus, their particular spatial perspective formed through early childhood spatial experiences. The personal spatial memory drawing is a "primal image"[5] (Bachelard 1964, xv) of a haunting and unforgettable space that is part of each student's personal history:

> each one of us, then, should speak of his roads, his crossroads, his roadside benches; each one should make a surveyor's map of his lost fields and meadows …Thus we cover the universe with drawings we have lived. These drawings need not be exact. They need only to be tonalized on the mode of our inner space. (Bachelard 1964, 11–12)

Personal spatial memory drawings are similar to Claire Cooper Marcus's "memory-sketching" (Sarvimäki 2017, 74–82), where students draw spatial or environmental memories and thereby reveal "environmental autobiographies" (Marcus 2014). Marcus noted the transformational effect the project had on her students, with one student noting that "[t]his is the first time in my whole student experience that anyone has said my life is of any consequence" (Marcus 2014, 35).

The object of the exercise with Wits students was to begin to validate each student's spatial autobiography, to unearth a sense of identity and reveal students' spatial values and biases. The parallel engaged pedagogy continued with the whole design teaching team doing the personal spatial memory exercise alongside students and sharing both the drawing and what it revealed about their spatial autobiographies. The hybrid model worked well, with intimate access to each other's design processes online and engagement with and drawing alongside each other on campus.

On an institutional level, the architects list to be studied was expanded to include at least two Wits alumni architects chosen by students. This inclusion prompted discussions unpacking institutional influence, asking whether Wits's architectural education had any particular emphasis, or even resulted in a common architectural style, design process or way of practising. Historically the Wits school of architecture had a strong Modernist focus in the early twentieth century, which started to shift to a more regionalist, artistic and craft focus under Pancho Guedes in the late twentieth century and to a more urban and city focus in the early twenty-first century. Through this focus on institutional influence, students were urged to see how their personal spatial habitus differed or matched the Wits school of architecture design habitus, and how studying at Wits altered, complemented, or contested the personal spatial habitus that they arrived with. Exposing these differences gave students further encouragement to value the beginnings of their spatial design journeys and to see how these added complexity, shade, and density to their design practice. In sum, in the years 2019 to 2022, the *Manifesto* project has served to reveal students' personal habitus and bring it closer to the institutional habitus through reflective and diffractive practice-based design research methods.

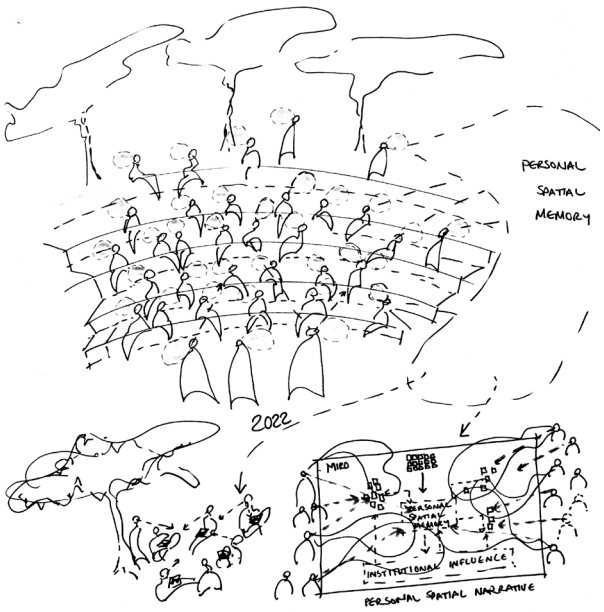


Figure 10 Personal spatial memory exercise completed outside in the Wits amphitheatre due to Covid with the three lecturers in front sharing how their personal spatial memories reveal particular personal architectural values and attitudes to design. The reflection on these memories was taken through to in-person group discussions and online postings on Miro.

On a personal level, practice-based design research methods have encouraged students to value their own spatial design origins and ways of seeing through self-reflection, social reflection, and personal spatial narratives. They have critically engaged with the institutional habitus through diffractive mappings of the institutional influence and a parallel engaged design pedagogy that encouraged collaboration, countered the institutional hierarchy and expanded their conception of who matters.

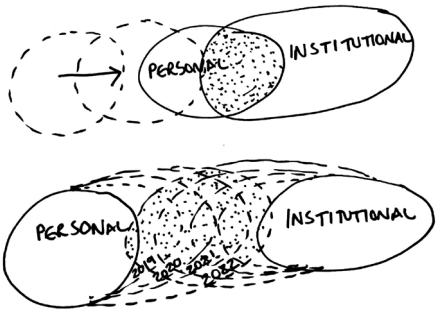


Figure 11 Personal and Institutional habitus moving closer to each other through PbDR methods applied from 2019 to 2022 at Wits SOAP

Students' realisation that their perceptions of space are valid and productive for their design development encourages them to engage critically with the institution's curriculum and technologies of power designed to make them into professional architects. This confidence is enabled by the validation of their personal spatial habitus, and embodies the transformative potential of applying practice-based design research methods to architectural design pedagogy.

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Notes

1. "Habitus"(Bourdieu 1977) a term meaning cultural capital, "broadly defined as a representation of one's cultural value, and includes a variety of traits and behaviours, such as posture, dress, language, preferences, academic credentials and social networks" (Payne 2015,10).
2. The studio master model replicates the apprenticeship model for professionalisation in the studio, where the teacher is seen as a master, and students mimic the master. This model reflects Foucault's micro-technologies of power (1980) and has been characterised as "tight control, coercion and molding" (Dutton 1991, 167; Webster 2008, 71).
3. Van Schaik, a South African architect and academic who founded and commenced the practice-based design research masters programmes at RMIT as invitational programs in the 1980s. These developed into the current RMIT international PhD programmes run in Australia and Asia, as well as Europe's RMIT and Adapt-R (European-funded) programmes (Blythe and Stamm 2017). Leon Van Schaik (2004; 2013), Laurene Vaughan (2017), Richard Blythe (2013) (Blythe and Stamm 2017) and others from RMIT have written extensively on their experience in practice-based design research.
4. Ontology, the study of the nature of being, is divided into objective and subjective ontology. Relational ontology notes that you cannot understand an object apart from your subjective understanding of it, and is "an ongoing process in which matter and meaning are co-constituted" (Bozalek and Zembylas 2017, 2) where meaning arises not only from the object but from its relation to other objects and to the subject studying it.
5. Bachelard's "primal images" (1964, xv) focus on the "experience of the primitiveness of refuge, and especially beyond situations that have been experienced and dreamed: the centers of simplicity – the oneiric house, the hut, animal dwellings (shells and nests), a series of primal images of architecture (drawers, chests, wardrobes), and the childhood home, all of which have a quality of intimacy and which bring out the primitiveness in us" (NoorMohammadi 2015, 72).