prologue

Ever since I can remember, I have been looking for the 'why' in design. Trying to find what lies closer, and deeper; and is more meaningful -

desYgn – DESyGN – des[y]gn – des[?]gn

On this day, 10 August 2019, my mind opened to another world – my poetic voice – from dormant, to alive. Hesitant to emerge for this thesis, being silenced by the formal expectations of a document, paralysed by the rules. Challenging and expanding its boundaries, questioning its fields and thresholds and the spaces in-between. How do I belong in these pages? How can I enter this belonging?

It struck me, one day, as I was traveling as a passenger in an old skedonk*, down one of Dar es Salaam's long main roads. We passed a series of flats, where a particular condition made itself known to me. It jumped out from across the street – a makeshift balcony. In that fleeting moment, I pulled out my phone to take a photo, through the driver's window – I wanted to remember.

That image, imprinted in my being, made me realise that the essence of life, of living, revolves around people. The purpose of architecture is to serve its user.

*skedonk is a battered, old car, its condition can testify of many years of hard, but dedicated service

A couple of months later, I wanted to capture this image in words, as a way of reconnecting to the original experience. With my first attempt, I realised that I fell into the trap I was trying to address in this research. My description conveyed a physical account of objects and physical characteristics. It was only after I internalised the experience, by remembering what I 'felt' in that moment, that I discovered its significance. Instead, it was about the people who created this makeshift balcony, with its traces of use and enjoyment, of the small and seemingly insignificant things that mattered.

personal reflection [provocation]

Elevated sentinel
in full bloom, again.
Passers-by unaware
the silent voice, then
shouts out
a kaleidoscope of
colour, that goes to sleep
- the empty wooden
seat.

makeshift balcony 1
Dar es Salaam, Tanzania

spectator
observer
outsider's view

I sit here
early morning, late afternoon
looking forward to remind you
to bring some onions,
or to ask: "how was your day?"
I talk to my plants, my
pride and joy
- my balcony, my
extra room.

makeshift balcony 2
Dar es Salaam, Tanzania

participant
user
insider's view

Part A contextualises the societal conditions and subsequent design inquiry, in which this study is situated. The research opportunity and purpose of the study emerge from insights gained through a description of the theoretical context and deep reading of grounding theories. This initial study then informed the delimitations and limitations used as a framework in defining and articulating the core research questions. A general description of the methodology includes the plug-in workshop brief as used in the data collection and analysis. Definition of terms and concepts are listed and the outline of the document describes how the research unfolds. *Chapter 1* therefore outlines the provocation to make deeper connections through other ways of design inquiry. It is written in such a way that other researchers can replicate the study in different contexts and situations.

Chapter 1 POSTULATIONS AND QUESTIONS

In an increasingly complex and changing world, where global problems are felt locally, the systems we currently use to plan, design and build our urban neighbourhoods – the vital building blocks of our towns and cities – are doomed to failure (Campbell 2018:9).

Background

The world as we know it is changing rapidly. Design education and design practice are facing a time where disciplinary knowledge is not enough to address the pressing challenges that affect lives and living at large, also at the smallest scale. The global health pandemic of 2020 is one such example of how an unprecedented scenario influences peoples' lives directly, in our homes, our children and families. The long term repercussions of this event is unknown at this stage, but the consequences for design will reveal itself as life returns to normal in the future. This single example illustrates the challenges and the *wicked* nature of complex and overlapping issues that designers will need to understand. Concerns that have become increasingly clear since the mid-twentieth century (Rittel & Webber 1973:160). Complex issues within the spatial design milieu are entangled and cannot be isolated. Social, cultural, economic and psychological matters are interwoven in human living environments and the study therefore includes all of these for consideration as a holistic approach to inform engaged spatial design inquiry.

How do we prepare designers within societal contexts where unpredictable and fluid conditions of living are prevalent? Where situations can change overnight, where our survival is dependent on our adaptation to new ways of living. Do designers have what it takes to adapt in their professions to respond, not only effectively and efficiently, but to show the same resilience in their practice, as people display every day in these extraordinary times? In this light, the ways in which we create meaning and connect to that which we deem important, becomes essential. Now, more than ever, connections

between people, where a deeper understanding and insight into what lies deeper and closer, are in need of attention: people, experiences, whether embodied or virtual, well-being, belonging, community, empathy, and the ways we engage in the word.

Design practice and industry show innovative ways of keeping abreast with complex challenges and engage deeply in situations where problems are not always well articulated (Fern Tiger Associates 2013, Greater Good Studio 2019, Panorama Innovation n.d.). Design education on the other hand, is in need of integrating 'new' ways to supplement the traditional and conventional design inquiry, especially in the spatial design disciplines (interior design, interior architecture and architecture), in order to stay relevant (Design Research Society, PedSig n.d., Globally we design 2020). The Design Research Society's (DRS) Special Interest Group in Design Pedagogy (PedSIG) hosts a biannual conference series, of which 'Insider Knowledge' was the topic for 2019, addressing studio praxis, student development and modes of learning, which includes emerging practises in teaching (Jones 2019). In addition, GloW-DESIGN, "a global thought leadership platform" hosted the 2018 ReDesignED Educators Forum, with the Universal Design Education Charter, as outcome of the meeting. The charter addresses "the key issues of continuous culture change, knowledge and skills (education), sustainability, technology, acknowledgement (certification) and betterment of all life as design's primary concern" (globally we design Press Release 2018). Within spatial design disciplines, the onus lies on academia to adopt different perspectives and approaches in design education, in order to facilitate a gradual shift towards connected and engaged learning, as indicated in the two educational platforms described above.

> These are ethical and political questions deserving of closer attention in future design studies. But these studies also need new kinds of researchers, able to understand complex technological issues certainly, but able to situate them in social practices. Articulate researchers that do not see the now clichéd distinction between practice-based work and more scientific and social scientific forms of design study. Researchers able to put the case for the design discipline and designerly ways of thinking as central to modern ways of working (Lloyd 2019:177).

This discourse is grounded in the roots of designerly thinking, based in research design over the past 40 years (Johansson-Sköldberg et al 2013). It considers design as reflective practice, (Schön 1983), the creation of artefacts (Simon 1969) and problem-solving (Buchanan 1992). In addition, designerly thinking focuses on process (Lawson 1980/1990) as a 'way of knowing' (Cross 1982, 2006) and the creation of meaning ('semantic turn') (Krippendorff 2006). Designerly thinking seen through the lens of the key authors focuses on a traditional way of approaching design. In comparison, design thinking's emphasis on people is the key to merging the two discourses, as a holistic picture of design to benefit design pedagogy and practice.

The debate regarding design thinking (DT) and designerly thinking (DℓT) (Laursen & Haase 2019) brings another topic into view, by comparing perceived shortcomings of design thinking with approaches of designerly thinking. Their main criticism is that design thinking's use of tools and techniques are not grounded in a design paradigm and that the application is non-situated (Laursen & Haase 2019:814). A rival study, investigating twelve global experts, shows that design thinking's processes are grounded

in an integrative model that is system-orientated, human-centred and creation based (Camacho 2018:631). This study therefore, argues that when the discourse between design thinking and designerly thinking starts to integrate, new opportunities for enriched understanding of engagement in design research will emerge. The two are traditionally seen as separate discourses, but practice shows equal relevance through their integration. In addition design thinking courses are introduced at academic institutions with the aim to "make impact with design" and "to help you use design to make change where you are" (d.school Stanford 2020). This discussion introduces human-centred design, its contributions and shortfalls, but also the focus on situation-centred priorities needed today (Resnick 2016:288) instead of an object-centred approach according to its traditional understanding in project and industrial design (Norman 2013). Therefore, the gap in perception is closing slowly, and this study intends to contribute to this discourse.

The study's focus on design pedagogy relates to the researcher's direct involvement in the design studio as coordinator and facilitator. This research context as milieu for exploration provides opportunities to introduce hybrid ways of design engagement to support traditional methods, to increase engagement. Students are impressionable and in the process of personal development on many levels. In the educational milieu, the cognitive domain or traditional approach is over-emphasised (Salama 2015:6). Immersive learning experiences in addition to intellectual activities could enable transformation design. If this happens, design approaches and attitudes can be realigned to reveal a shift in attitude towards an emotionally connected praxis (Heylighen & Dong 2019).

When this study started, the researcher was the coordinator for the third year interior architecture studio and noticed a repeating concern in studio engagement, the reliance on predictable and superficial ideas, presented as solutions. The potential for increased immersive action was endless. The traditional design approaches were no longer rigorous or engaging enough to address projects with multiple complexities inscribed within hybrid conditions. Latour (2008:2) refers to these intricacies as "matters of concern", compared to "matters of fact".

Within the relatively new field of interior architecture, these complex spatial design issues play out within increasingly intricate urban conditions. These challenges, whether social, cultural, economic or psychological, impact people at human scale, hence the emphasis on human-centred design. The understanding of 'people in place' drives engaged actions within a variety of contexts and user groups. This is embedded within spatial design in a broader sense. Interior architecture can thus not be isolated, but is integrated and forms part of larger interdisciplinary spatial processes. Therefore, the definition of an interior space is expanding with the notion of 'interiority' and its ephemeral and fluid conditions (McCarthy 2005:115) of living and being in the world. The way these undefined experiential expressions are understood, the "dialogue between objects and users" (Guinta 2009:58), become areas of potential inhabitation, unbounded by an architectural envelope. In this way, interior architecture provides scope for increased inquiry, as multi-scalar investigations offer opportunities for connected ways of knowing (Belenky et al 1986:113).

Could there be hybrid methods, other ways of design engagement that have not yet been introduced in the spatial design studio? How could we frame design questions to delve deeper and to form understandings from other perspectives? Can we relate more directly? Perhaps open-ended ways could lead to deeper understandings and insight in design praxis. Taking the insider's perspective, instead of the designer's view, could become a way to relate directly to design challenges. In this way, we negotiate design issues and disrupt known design practices to upset conventional and familiar design processes, for the better.

Problem statement

For many years, I felt there was something missing in the depth of design engagement in studio teaching. Skimming over the surface with quick 'recipes' and preferred ways of working, without really connecting to the deeper meanings of things, of situations and living scenarios, or interactions and relationships of people in the built environment.

As individuals and designers, we are all different, but I knew that for a designer to be 'whole', all aspects of human life, the human condition, should be considered and understood in a connected way, if we want to respond truthfully and with authenticity to peoples' needs and requirements – the known and unknown, the tangible and the intangible. This is not a question of personality or preference, or whether it is possible or not, but rather a matter of care and awareness.

This personal view may seem intuitive, open-ended and as of yet insufficient in contextualizing the emerging problem statement. To be more precise will require a *thick* description of how current design education – specifically when dealing with complex spatial problems – seems to be predicated on out-dated methods and procedures. One of the most common problems seems to be an obsession with using known building typologies as case studies without acknowledging how such architectural typologies are being used solely as mechanisms for capital accumulation, rather than enabling frameworks for community building. In such cases, we see the question of *what* to build being foregrounded at the cost of questions about *why* and *how* to build.

The thesis propositions and research that will emerge through this work will continually explore and argue for a more reflective and critical approach to the questions of *why* and *how* we engage with spatial design problems in complex cultural and environmental contexts. The education of future architects and designers is the bridge between the discipline of architecture and the profession of architecture – as such requiring us to constantly re-evaluate our methods, our intensions and our mandate as we empower future architects to design on behalf of others. By implication then, introducing questions about the enabling potential of architecture and the need to re-calibrate a human-centred approach in our educational frameworks and methods.

How can this be enabled?

When students have limited access to sites, buildings and contexts, and even less opportunities for interaction with stakeholders and users, connected learning in design projects suffer. This concern becomes even more prevalent in a global society experiencing extraordinary health challenges, which accepts the requirements of social distancing and self-isolation.

How can embodied experiences in the studio scenario be simulated in some way?

As speculative action, take the designer out of a familiar comfort zone and replace that with the unknown, that which the designer cannot control. Introduce intangible conditions into projects in ways to complement the traditional design process and methods. To know wider, to know deeper. We might say that any good studio asks critical questions and challenge students. This study, however, introduces a different lens and ways of engagement than the norm, for this purpose. The emphasis falls on *how* and *who*, instead of *what,* which focuses the exploration as directed by the nature and focus of the particular design studio.

Transformation through provocation?

This study is not aimed at solving problems. It is not focused on fixed characteristics and qualities linked to traditional understandings, but on attributes and values, with emphasis on fluid and transient relationships and scenarios. Moreover, design engagement should then also be flexible and adaptable to allow for critical inquiry and reflection. In this context, the need exists to refocus and to adopt a closer view through design by considering the user directly. This approach could provide deeper insights into the complex societal problems embedded within design projects. The user's perspective is therefore prioritised over that of the designer.

This shift in focus attempts to bring a different awareness to design inquiry and is explored as a plug-in workshop in the design studio. It is process-driven. It aims to uncover various scenarios for response. It hopes to raise awareness of the intangible and that which lies under the surface. The benefits of alternative processes to complement the traditional may be important if we want to relate to challenging design situations in a connected way. Although this study is a speculative inquiry and presented as a provocation, it has serious intentions by opening a wider debate instead of solving problems. Through small but noteworthy insights, important considerations emerge in the context of the spatial design studio to bring an awareness of unfamiliar ways of engaged design practice.

Research questions

The guiding research questions capture the essence of the investigation by combining selected research areas and are related to carefully considered and deliberate activities in the plug-in workshop.

main question

How can a human-centred approach as disruption by dissociation enable transformative engagement in the spatial design studio?

sq1 How does the insertion of a disruptive action by dissociation as designer, influence meaningful connection and design engagement?

sq2 How can the adoption of a human-centred approach expand an empathic understanding when dealing with complex spatial design issues?

sq3 How does the shift to the 'insider's perspective' transform design thinking in students to reveal other design agendas?

Due to the speculative approach, the study deliberately excludes objectives that would test and investigate with a prescribed lens. Instead, it is conducted without preconceived ideas, following the exploratory, yet critical and productive methodology. The exploratory nature enables the researcher to stay true to the methodology. Thick descriptions guide the interpretation and understanding of the qualitative data, to inform the contribution of the research within a larger design discourse.

Theoretical context

The general overview of related literature provides the theoretical background to the study, which is interspersed with accounts from the profession, to illustrate the interrelation between theory and practice. Topics include spatial design pedagogy; disruption; dissociation; human-centred design within design thinking and designerly thinking; empathy; transformative learning and frames of reference; and threshold concepts.

Scrutiny of spatial design pedagogy is not new. Colomina et al (2012) argue that radical pedagogies, or "the way (design) is taught", can change or "revolutionise" architectural education. They trace this approach from the 1960s and 1970s, where a new modus operandi was sought to question, destabilise, undermine or destroy traditions at various scales. These decades saw many revolts against architecture education's inability to respond to social and political issues, for example against the Beaux-Arts School in 1968, the Yale School of Art and Architecture in 1969 and the 1972 symposium, *The Universitas Project* in New York (Colomina et al 2012). Harris (in Froud & Harris 2015:11) concurs that "established pedagogical aims and practices may be ineffective in promoting learning and social change."

Day (2015) criticises the radical architecture's approach by questioning if they are not more reactionary than radical. She speculates that the book has a "quieter current" with a desire to reconnect to people and practice. Perhaps that is why the notion of 'radical' is introduced – the fact that it remains a challenge to gain deep insight (Harris in Froud & Harris 2015:12). Awan et al (2011:28) refer to "…aspects of the world that cause architects discomfort, because these often unpredictable and contingent aspects are those over which they have limited power." In addition, Till (2009:113) prompts that "…the temporal and social aspects of architecture as lived, should be acknowledged as such" in order to represent more than one "temporal condition". Noteworthy that this challenge has been in existence for the past 60 years – the inability or slow transformation of design pedagogy to engage with wicked problems (Rittel & Webber 1973:160). Latour (2008:9) introduces the philosophy of design

according to Peter Sloterdijk, by referring to the modification of artificial life, or the complex envelopes we inhabit.

> Sloterdijk does not treat humans matter of factually, but treats humans and non humans as "matters of grave and careful concerns" … But by treating their life supports as matters of concern, we pile concerns over concerns, we fold, we envelop, we embed humans into more and more elements that have been carefully explicated, protected, conserved and maintained … (Latour 2008:10).

It can therefore be argued that traditional design methods in spatial design have become inadequate to address complex design problems, are too rigid, object-, outcome- and solution driven, and lose focus of the fine-grained requirements people place within the context of multifaceted problems. Latour (2008:4) argues for the design of 'things' instead of 'objects', where 'things' refer to "complex assemblies of contradictory issues". For this reason, "[t]he standard tools of aesthetics and making are insufficient to negotiate these networks on their own…" (Awan et al 2011:28). There is a need for design inquiry to introduce a human-centred approach to find an equilibrium in design pedagogy. Caan (2011:53) argues that we cannot continue to design for a "universal human being" and in addition "…for too long we have avoided delving seriously into the emotive, sensory, and phenomenological impacts of design."

Therefore, we need to adapt to embrace connected and immersive approaches from seemingly unrelated disciplines to fill this gap in design research. In an applied research context (Tharp & Tharp 2018:126), where the emotional, experiential or 'affective' side is often neglected (Caan 2011:53), the inclusion of concepts from health sciences, especially psychology and psychiatry (Ross & Watling 2017), becomes important. Especially when considering normative dissociation to 'imagine' or 'simulate' users' needs and requirements (Panero et al 2019), and empathy, to connect to the unspoken or intangible conditions of being (Kouprie & Visser 2009). According to Latour (2008:2) there is a need for "attachment, precaution, entanglement, dependence and care".

Empathy, also used in design thinking and business innovation (Brown 2009), expands the understanding of the use of empathy, its benefits and shortfalls, although aware of rival criticisms (Bloom 2016). Design thinking, a human-centred way to creative problem solving, introduces empathy as the starting point to the process (Brown 2009). This is widely used in practice such as IDEO's Human-centred Design Toolkit and the Field Guide to Human Centred Design (IDEO: Design Kit 2019) and the British Design Council's double diamond framework for innovation (Design Council 2019). This approach has transitioned into educational institutions now offering courses in design thinking, for anyone outside the design disciplines, such as the Stanford d-school (Kelley in Camacho 2016, Platner et al 2016) and the Interaction Design Foundation (n.d.). Academic research criticises design thinking for not being rigorous enough in its process, and that its methodological approaches fail to meet empirical requirements (Laursen & Haase 2019: 813). This can be contended with the many practices today that employ human-centred approaches by integrating critical reflection and other approaches (Fern Tiger and Associates 2013, Gensler (n.d.). These may be seen as disruptions in the traditional sense; however, they prove to be immersive and able to connect designers and researchers directly with people and complex challenges in design projects.

The inclusion of disruption or disruptive practice, as first used by Christensen (1997) as disruptive innovation, is to upset the conventional practice and to develop an alternative to the status quo. Acaroglu (2017) developed the disruptive design method, focusing on a specific process to enable positive change for the environment and for people. This study does not use disruption for disruption's sake, but rather as a critical and productive disruption, which creates an enabling environment where new questions can emerge.

By combining these seemingly unrelated concepts in an interdisciplinary study, the research borrows and integrates concepts from other disciplines, but the investigation is grounded in design research. It addresses the development of students and their affective attributes through a disruptive practice where the standard studio status quo is upset. Although any good design studio has always asked critical questions, this study expands the design inquiry by including critical and new questions not previously considered.

The notion of asking questions in design projects is not new. However, asking the right questions, or asking questions that will provide better responses, therein lies the challenge. As designers, we are accustomed to knowing upfront, on behalf of the client or user, what the best solution can be. The reality is that today, this is no longer enough. People live in situations and conditions where the 'obvious' solution is probably not the most appropriate, and other ways of engagement are needed in order to determine the best course of action. There are many examples to demonstrate this reality.

One such example is a project by the Greater Good Studio for the Academy for Global Citizenship, reimagining the school food experience for children. Addressing waiting time with limited options as a rushed event, were replaced with a shift in service style, empowering them with options at the table, resulting in less food wastage and a positive lunch break experience. Transformation through design was seen in mind shifts and behaviours of the children. The design team also employed other ways of engaging with the challenge, including seeing the problem from a child's perspective (Greater Good Studio – Academy for Global Citizenship 2020). In addition, Panorama Innovation's homepage shares their passion for what they do, "see deeply, see differently, see beyond", all concerning people to "understand users and customers", to "create something new", to "invigorate products and offerings" and to "build innovative capabilities" through "creativity, empathy and flexibility" (Panorama Innovation (n.d.).

The concept of time presents a challenge, as the development of understanding to gain new insight cannot be hurried. The questions we ask in design projects will lead to understanding. But, how do we frame the questions and what happens if they are the wrong questions? How do we deal with consequences, who is affected? There are many other methods similar to this investigation, so why is this one important? Are we not already working in alternative new ways to transform our thinking?

Transformative learning, according to Mezirow (1991, 1997:5-6) deals with perspective transformation of an individual, where 'habits of mind' and 'points of view' are challenged. The hierarchical view of development, as seen in many developmental theories, is questioned. Ethical and cognitive development of students, according to Perry (1970), is presented as a scheme of transformation, and

echoed by King and Kitchener (1994) that builds consecutively and cumulatively. In comparison, Belenky et al (1986) argue that procedural knowing includes separate knowing and connected knowing, and although the authors explicitly state that it is not a model, it is often interpreted as such in practice. The lesser-known affective domain in the Bloom's taxonomies (Krathwohl et al 1964) emphasises values, attitudes and making deliberate choices towards a particular cause, as part of a holistic development.

This study argues for an open and fluid interpretation of these theories, as the speculative approach will reveal as the exploration unfolds. Threshold concepts, as critical points in development, indicate where noteworthy shifts are observed in the transformation of an individual's perspective to life. These transformations can be irreversible (Meyer & Land 2003, 2005) and have long-term implications for design students, and their trajectory towards preparation for a profession.

Research opportunity (relevance and importance)

Graduates will be future design practitioners. It is therefore important to equip them with ways of engaging and connecting with a deepened understanding and connected knowledge related to complex design issues. While there are many research projects in practice and education relating to challenging societal issues, little research brings a psychological perspective to balance the design intent in spatial design. While it is important to ensure adequate and relevant spatial solutions, it is now even more important to prioritise the needs of people in a time and society of adversity and uncertainty.

The research builds on previous work in the design sciences, but integrates that with pertinent concepts and approaches from the health sciences, business innovation, student development and transformative pedagogy. By incorporating aspects of psychiatry, educational psychology and human behaviour, a better understanding can be formulated regarding modes of engagement and the impetus for transformative actions. This research is interdisciplinary and includes various voices into one study, it crosses boundaries between seemingly disparate disciplines and topics, but the whole illustrates the benefit when considered together. In this way, micro considerations in small-scale scenarios, regardless of spatial environment, can be addressed through a refocused lens.

The study embraces the larger curricular framework into which the core studio and plug-in workshop are located. The interrelatedness of the various supporting modules enable translation and interpretation in design projects. The research is hands-on and conducted within four higher education design studios where primary data is collected to report on first hand experiences.

Purpose of the study

The purpose of the study is to probe the 'connected' mode in design practices and inquiry in the spatial design studio. It acknowledges that design projects (in education and practice) have time constraints due to the scope and high degree of complexity and multiplicity. Pressed schedules drive quick responses, which leave limited opportunities for the multitude of questions for investigation. Sometimes there is no time for new questions to guide a project in a responsive way due to a new or deeper understanding. Time is needed to internalise issues and to think deeply, and the educational calendar does not allow for this privilege. This research therefore introduces a speculative 'shortcut', and 'hacks' the conventional project trajectory, by inserting a four-hour speculative plug-in workshop into an active studio design project. The workshop emphasises contingent conditions that are unpredictable and dependent on the occupation of users. It is not meant to become a framework, not even an open-ended framework, but an approach, or a way of engaging, an attitude, towards design practice. It is flexible, focused on relationships, robust and can change and adapt over time or as needed. It promotes a mind-set geared to formulate deeper understandings and new insights into complex issues. As disruption, it requires deliberate shifts between different modes of operation, and various perspectives. It asks of students or participants to work swiftly, without fear of the process, to engage deeply in order to find a way 'into' a question or concern. By making quick decisions, the disruption becomes a productive way of subverting familiar tools and methods and offers possibilities to formulate new questions leading to connected knowing and being in order to take action. In this way, the traditional methods of design inquiry could be extended and supplemented to consider the human condition as a whole.

Delimitations and limitations

Delimitations

The research is delimited in the following ways:

1 Participation of third year, exit level students in an undergraduate degree course (with assumed experience, skills and knowledge), primarily in interior design, interior architecture and architecture, also referred to in this study as spatial design.

2 The researcher provides 'second life' materials to all student groups, ensuring an equal baseline library of materials during the workshop activities.

3 The study does not include testing for personality types to inform the research, as participation is spontaneous and captures in-situ responses during the workshops.

4 No demographic or personal information is captured as part of the ethical considerations, as all students enrolled in an exit level programme are representative of the discipline and particular course.

5 The study supports decolonialised design education and it is implied and embedded through this investigation without considering its political background. This is a holistic and inclusive inquiry.

6 Visual representation of issues of spatial complexity forms part of this discussion, however demonstrating the visual nature of research graphics and students work (as examples) are for further research.

Limitations

Possible unpredictable scenarios limit the study:

1 Participation and responses by students during the workshops cannot be guaranteed, as participation is voluntary and participants can withdraw at any stage. There is no certainty about the degree and nature of participation.

2 The types of active studio project of the four investigations are unknown at the start and might influence the study in some way. In the end, two were spatial in nature, and two object-based in their project outcomes.

Methodology

> …people actively and agentically seek out, select and construct their own views, worlds and learning, and these processes are rooted in socio-cultural contexts and interactions. In other words, cognition is generative and active rather than receptive and passive respectively (Cohen et al 2018:23).

The research methodology is situated within a constructivist interpretivist paradigm. From a constructivist perspective, people make meaning of their lives in various relational situations. Researchers investigate these from various viewpoints in order to gain understanding and insight of social processes and interactions (Cohen at al 2018:23). The adoption of multiple lenses relates to the philosophical beliefs about reality (ontology), which is based on an emic perspective in this study (Yin 2016:335, 338). An emic view directly relates to the experiences and responses of the group participating in the research. It highlights the insider's voice throughout the data analysis and presentation of findings (Creswell & Poth 2018:91-92). Constructivist research complements the interpretivist approach, as it aims to understand experiences of the world through the eyes of participants. Cohen et al (2018:20) furthermore explains,

> From an interpretive perspective, the hope of a universal theory which characterises the normative outlook gives way to multifaceted images of human behaviour as varied as the situations and contexts supporting them.

The qualitative research ontology is centred on people being instrumental to meaning-making, within specific situations that are context-bound, and in which multiple interpretations can emerge. This view is relevant to people and socio-cultural aspects in a decolonial discourse (Mathebula 2019). In addition, it allows for multiple and complementary intelligences to emerge (Fisher et al 2017). It is up to the researcher to describe and understand these experiences based on relationships and social reality and interactions. Subjective accounts describe the qualitative epistemology of the study (Cohen et al 2018:288-289). The methodology uses 'thick description' (Geertz 1973) and qualitative data analysis

without coding. Instead, Yin's (2016) five steps are used in conjunction with 'keywords in context' (KWIC) (Bernard & Ryan 2010:192) and an adaptation of recursive abstraction (Polkinghorne & Arnold 2014) to distil the essence of the data. This study, however, does not aim to propose a universal theory, but to speculate on the value of the findings and interpretations in the context of spatial design.

In conjunction to the qualitative methodology described above, the plug-in workshop follows a disruptive practice (Acaroglu 2017, Christensen 1997). However, it is not seen as a method, but an approach instead. Method by implication refers to tools and techniques – a prescription. As approach, the focus falls on a 'way of engaging', or 'action(s)' to allow for spontaneous responses. Although the workshop brief can be interpreted as a method, especially when considering the original briefing document stating the aims: *As 'plug-in', the workshop intends to serve as a tool to investigate and interrogate.* This initial reaction demonstrates the continuous challenge for designers, including the researcher, to transform thinking and approach towards a mind-set of open-endedness, of ambiguity and hand over control to the process. Upon later critical reflection, comes the realisation that any reference to tool or method, becomes another trap of predictability and bias of product and outcome over process and engagement.

In addition, the study acknowledges the limits of constructivism, due to the skills, knowledge and experience required to construct meaning from complex situations. Within a design context, students (academia) and professionals (industry) might not have the required exposure in order to construct different worldviews.

This workshop brief (Appendix B), with the inclusion of selected activities, illustrates one example of a disruptive action intending to assist students to focus their ways of working during the participation. However, different activities to the ones used here, could have been included. The intention is to provide opportunities for engagement, where their philosophical position and worldviews are questioned and interrogated as "a specific scenario plane where philosophy plays out" (Altshuler 2019). The workshop requires students to focus on the intangible and unspoken in a critical, yet creative way. Furthermore, it asks them to imagine themselves as the users, and not as designers / architects. This hybrid approach brings together empirical scientific research (analytic responsibility within qualitative research) with philosophical speculation (Reynders 2019).

In a critique of 'method' and 'approach' to design, the literature review section (*Chapters 2-4*) considers a theoretical understanding into which industry practice is integrated. This is contextualised in the data analysis and findings chapter (*Chapter 6*) where the speculative workshop becomes a 'testing ground' for 'other ways' of design engagement and offers opportunities to reflect on industry approaches. Moreover, data from the workshops could provide evidence to validate actions in practice, in order to provide evidence of valid results and positive impact.

The argument whether a 'tool' is needed to demonstrate an approach surfaces again. It can be argued that a speculative exploration can be adequate to demonstrate other ways of knowing, especially where people, their direct experiences and participation are involved to create meaning. The unfolding of the investigation demonstrates the degree and nature of the influence of the workshop in an educational context. If different modes of engagement as research-through-design (Tharp & Tharp 2018:126)

enable transformation in participants' awareness of the spectrum of social conditions and scenarios, the dependency on human occupation and meaning-making could be prioritised over formal architectural expressions. Perhaps the workshop findings reveal other types of studio engagement, embedded in contingency and social inclusion, to complement the current traditional studio model.

The four workshops are introduced at four higher educational institutions, with different studio projects and varying contexts, programmes, typologies and users. It allows for a series of results to be analysed according to the detailed methodology description in *Chapter 5*. The research questions are considered in the analyses, focusing on the topics emerging as part of an inductive study, where observation is used to identify topics and patterns from the data (Bernard & Ryan 2010:266), in order to contextualise the speculative inquiry. As provocation, the research interrogates the intensity of engagement in the studio and the potential transformation (as observed by students themselves, the researcher and research assistants) of the shift in attitude and approach. A detailed description of the various modes of engagements follows below, discussing the purpose of each of the activities in the plug-in workshop, as a disruptive inquiry.

intermission

The conviction to intervene in the students' design engagement in the studio was so strong, that I intuitively drafted a workshop brief to address my concerns regarding their project depth and understanding. This spontaneous action was not informed by any prior knowledge or experience of methods other than the traditional design mind mapping, conceptualisation and sketching, and model or maquette building, with presentation poster as sequence. I knew I wanted students to reach deeper into themselves, and to engage more directly with the studio design project. I had the same experience the year before, but this time, I realised it was time to act. I was hoping for responses saturated with meaning, with complex understandings of design challenges and user requirements and needs. Perhaps by taking another approach to design inquiry as an insertion into the existing design project, something unexpected could be revealed.

After my reflection on the poetic narrative description of the balcony scenario, I wanted to explore making as part of the creative inquiry process, in anticipation for the plug-in workshop. This must be spontaneous, yet critical, I thought. Therefore, even though making happened in that way, my mind was already set on creating something that could be exhibited as an object, a composition of aesthetic value and expression. This proves to be a hindrance in the journey making a connection - having preconceived ideas. I realised that it is a challenge to submit to the process, without a result in mind. How do we enter such an understanding? How do we make meaning in this way? How do we connect deeper? Making as a process of discovery, of design challenges, but also of self. I did not exactly know how this would unfold, but my instinct to trust the process knew best.

trapped in the making
predictable response
the process feels
intuitive
but –
do not be fooled
the inquiry
compromised
from the start

I take a step back
realization
the trap is real

How to step
out
of this mind set?

A disruptive methodology – an example

As disruptive insertion, the workshop interferes with the status quo of conventional design activities in the spatial design studio. This is introduced at a pre-determined point during the studio project, ideally in the first quarter (Figure 1-1). This intervention aims to introduce other ways of engaging in design projects – finding 'an opening' into, an 'entry point' to ask design questions differently. Abrahamson (2019) explains in his own experience: "…helping designers and their clients see challenges in a new way. In his process he brings insights to life through art and play. 'Making something tangible is a way to unlock people's minds' ". The studio project is interjected with a deliberate focus on the user perspective and experience. Continuing this mind set into the larger studio design project, assimilating the newfound insight, is foreseen as the biggest challenge.
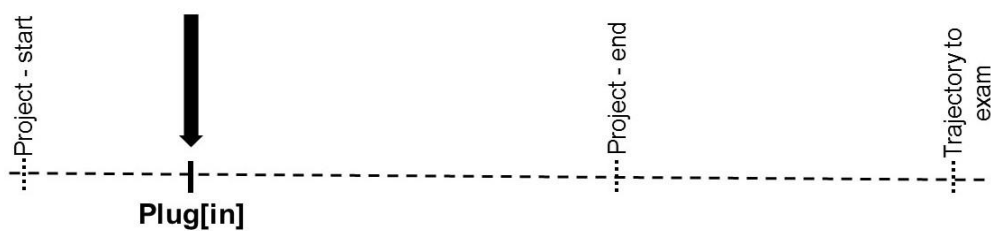

Figure 1-1: Project context of workshop as disruption

The study explores the value and impact of this disruption as speculative investigation. The data analysis and findings in *Chapter 6* reveal the impact as an example of this extended practice. It is assumed that the insertion at the start of a project could have more influence as it addresses the project framing and scope of intervention. However, it could also form part of a continuum of interventions where the insertion is introduced at different stages of the design process to address specific intentions, through different activities. Very often, projects do not offer direct access to students to experience the contexts and situations in which projects are situated. These can be very different to the students' own frame of reference and they can find it difficult to relate to the context, even more so, the users. When they are left to their own devices to connect to the project, it is mostly cognitively, with practical approaches and architectural object-based solutions.

This workshop introduces normative dissociation (Butler 2006) to gain insight into the user's situation on an affective level and empathy (Cuff et al 2014; Kouprie & Visser 2009) to reveal the user's full context, including the emotional or affective, as part of a human-centred design approach. This study, however, focuses on understanding and insight, not on solutions. It promotes an indirect engaged learning to showcase the possibility of 'connected knowing' (Belenky et al 1986) or learning, outside participatory action research.

Plug-in workshop brief – plug[interiority]

The 'plug-in' brief was a spontaneous development and materialised after many discussions. Up to that point, I was unsure how to address the issues and concerns regarding design engagement that have been bothering me. I contemplated a series of activities that could activate students' thinking with free and unfiltered exploration. My own third year studio informed the perspective and intent of the brief. Students should find their own ways of immersing themselves in complex matters related to design projects. How was this going to happen? Perhaps if I introduced a 'catalyst' on their behalf. This was written as an intuitive expression from a place of caring, of how students will engage in future, as practitioners. I completed the draft whilst finalising the ethics application for this study. Once the ethics approvals were in place, I leapt into the data collection – without hesitation, but with a big sense of anticipation of what was to come from this…

How would students respond to unfamiliar activities within their known ways of working? The 'plug-in' workshop serves as disruption (Acaroglu 2017, Christensen 1997) of traditional design activities in the spatial design studio. It does not replace the conventional design inquiry, but extends it by introducing a conscious human-centred approach from the outset. It includes activities of critical and creative inquiry, as an example of how another perspective to that of the user, could realign students' design thinking. It investigates a possible shift in focus from physical objects as outcome, to dynamic and social conditions of living. This is where the situational perspective of human-centred design is revealed (Janzer & Weinstein in Resnick 2016:288). This journey of discovery prioritises process over product and aligns with the constructivist research philosophy, where students are able to make meaning for themselves and with others, in the context of the spatial design studio (van Aswegen 2021).

Background

In this study, the third year spatial design studio is used as an explorative test site. Alternatively, it could also be used as an inter-disciplinary investigation, including other creative studios and design disciplines, such as graphic and information design, fashion design and programmes with a human-centred approach. The investigation also holds potential for exploration in practice and real-life projects. The researcher, as lecturer in higher education, chose to include students as research informants and participants. In this way, research activities are combined in studio projects as part of applied research, or research-through-design (Tharp & Tharp 2018:126) in order to provide deeper insights into the pressing matters concerning the current design project. This research focuses on the process of inquiry as a way of engagement. It does not attempt to develop a tool in the process. These activities are an example of another way of engaging the user's perspective in the design studio, and is not an exhaustive solution to the possible scope of such a workshop.

The plug-in workshop's aims, objectives and learning outcomes are an intuitive response of the researcher and address a personal uneasiness with shortcomings identified in the studio. These indicate the intention behind the disruption as a creative and critical intervention (Appendix B). It attempts to address the superficial engagement with projects and design challenges and the predictable formal responses of static solutions and products. The researcher feels an immersive practice is missing in the studio, one that can bring about deeper insights, expand understanding beyond the obvious concerns and solutions. At the time of writing the initial brief, the impact of the word 'tool' was not considered in the context of the study. Subsequently, personal reflection brought the realisation that the research is not tool, model or theory driven, but speculative in nature instead. However, the brief was used in its original form throughout, ensuring consistency and reliability in the data collection in all biopic investigations. Therefore, although the brief states its aims to "serve as a tool", the disruption intends to explore other ways, of which these are only examples, to engage in a speculative process, instead of proposing solutions or finding answers.

The main purpose of the workshop is to create an awareness in students to consider design challenges with deliberate intent, insight and understanding, by asking 'new' or 'other' questions that would normally not be asked or considered in conventional architectural and design practices (Lloyd 2019, Tharp & Tharp 2018:44, van Aswegen 2021). With the user as focus, attention shifts to other matters of concern (Latour 2008:2) for the designer – the primary focus starts with the user in a particular setting, as a human-centred approach. In this way, the disruption intends to acquire deeper understandings and create connections and associations with people as users, their needs and requirements. In addition, the impact of a contextual understanding and pressing issues, immediate and hidden, extend beyond the obvious 'quick fix' responses. In this way, the intervention as provocation hopes to reveal a deeper connection between designer, the user and the context. The consequence of immersive engagement and affective understandings, including empathy, are considered where other perspectives to that of the designer are highlighted.

As part of the data collection, the workshop activities are recorded as evidence of primary data creation. The critical narratives, both textual and visual (drawings and photographs of critical artefacts and live interactions) are collected. These are securely stored according to ethical clearance requirements. In addition, the data collection process includes the researcher's field notes documenting the workshop, with participant observation, reflexive notes and photographic documentation.

The researcher, together with research assistance – the studio master, or studio assistant in the specific studio – primarily use participant observation and field notes for research triangulation (Yin 2014:120). The data collection furthermore details the various settings of the research (Cohen et al 2018:543): physical (space and setting), human (student group), interactional (role of the researcher and student interaction), and programme (studio brief for plug-in and ethos of school). When the workshop activities start, observational notes capture the behaviour of the students, document pertinent aspects to decision-making, sequence and response to the brief. The use of 'second life' objects is also noted, and the explicit experiences the students display during the various activities or phases of the workshop. Reflexive notes are captured after the activities, as reflection of the researcher and assistants.

Workshop activities

The workshop activities require students to remove their designer hat and to step into the shoes (Brown 2009:49) of the user through normative dissociation (Panero et al 2019) to assume a human-centred approach. The brief asks of them to reflect with a sensitive awareness, the unspoken needs and requirements of people, by reflecting on experience, well-being, quality of life and emotional demands when negotiating changing living patterns, everyday rituals and narratives of inhabitation. These interactions are encountered at human scale, where the tangible and intangible are made visible through fluid and dynamic conditions of living. Bach (1965:x) refers to these tacit considerations as "the commonly unseen, the commonly unheard and the commonly unfelt".

Figure 1-2 represents the activities within a four-hour timeline, as inserted into a studio project. A problem statement, with related keywords describe the project, visualised by a series of spontaneous vignettes and made visible by making a critical artefact. Critical reflection of students' own processes, together with peer interaction and sharing, are interspersed at three strategic moments. To follow is a description of the role of each activity.
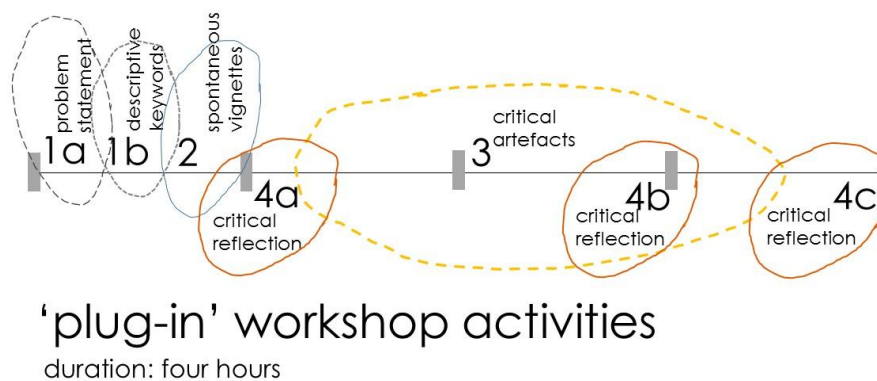

Figure 1-2: 'plug-in' workshop activities

1a problem statement. Students describe the design challenges or issues regarding the studio project by focusing on its context, programme, experience and inhabitants. Students 'imagine' themselves as users of the space, site, building or environment in which the studio project is situated, in order to understand and define the project and to grasp its complex scope.

1b descriptive keywords. Identification of ten keywords to capture the essence from the problem statement and their personal experience as a user, by selecting abstract nouns (ideas or qualities), adjectives (attributes) and adverbs (modifies or qualifies an adjective or verb) (The Oxford Dictionary). No common/proper/concrete nouns are encouraged, as descriptive terms aim to highlight the dynamic and social, over the static and physical.

2 spontaneous vignettes. Through a series of annotated vignettes, students visualise the nature of the textual narrative descriptions and its various meanings according to the view of the user. Vignettes visually describe the situations, moments and scenarios within the context and site where the specific studio project is located. Students deliberately articulate shifts in awareness by making links when they think in words and think in images. Associations, connotations and meaning-making are communicated as part of the students' assumed experience from a human-centred view.

It is argued that if, through normative dissociation (Butler 2006, Panero et al 2019), students dissociate from a designer role and associate with the user, they are able to 'imagine' themselves in a situation as someone other than themselves. The study acknowledges that the experience will not be a pure reflection and perception of the 'assumed user', as the student will project or internalise an 'imagined' experience. However, it is contended that this immersive action could still serve the purpose of creating awareness of another reality or perspective, albeit one that is lacking or fragmented in certain respects. The intention is for any preconceived ideas to be highlighted or challenged and for predictable responses to be replaced with ones that are richer, informed by a deeper understanding and empathy for others.

4a critical reflection 1 – self and peers. In pairs or in small groups, students share their personal experience from the perspective of the user. Discussions revolve around the selection and meaning of descriptive words and illustrative vignettes by communicating an understanding of how it could affect the design process to follow. Written notes are captured.

3 critical artefacts. The building of critical artefacts is an extension of the provocation of the workshop, where students are faced with other means of 'creating' to the familiar spatial design context. They are required to make an artefact that has no physical purpose, but aims to elicit a critical conversation regarding the issue(s) they identify as a discursive object that elicits "harder-to-reach issues involving core values, attitudes and beliefs" (Tharp & Tharp 2018:127). The brief requires the three-dimensional expression to be abstract or symbolic, serving as a synthesis of the project challenges and represent its invisible, intangible or temporal aspects.

To further the intuitive and spontaneous expression, the workshop introduces a selection of materials that are unconventional, non-traditional and alternative to general spatial design or architectural model building materials. These are unrelated to the mind set promoted by the conventional scale ruler and cutting mat. Instead, options include daily use items, objects and materials, which have been discarded by the original owner as 'second life' or 'prior use' items and not necessarily categorised as waste materials. A few random examples include, but are not limited to toys, shoes, automotive accessories, kitchen utensils, clothing, swimming gear, and packaging material.

4b critical reflection 2 – written reflective essay. The reflective essay outlines the workshop experience and its potential influence on the larger design project. In addition, students reflect on direct and related societal issues, how it can be addressed through matters arising from the workshop. They

also consider attitudes to design and awareness of social, temporal and fluid conditions. They re-evaluate the complexity of their understanding of intangible matters, beyond physical spatial expressions and formal solutions in spatial design. For consideration, the brief gives suggestions as prompts for discussion, such as behaviour, meaning-making, appropriation and identity formation. Students are also required to reflect on the use of 'second life' materials in the making process, and the potential for increased expression, richness and complexity.

4c critical reflection 3 – self and peers. The third feedback is the final critical reflection of self and with peers at the end of the workshop, where students share their written reflective essay, in pairs or in small groups. When students select words to describe their experience, they make cognitive and affective links between the different modes of engagement. During the verbal articulation, they internalise the perspective of the user in a personal way and are exposed to views other than their own.

Definition of terms and concepts

_affective attributes: aspects of a person to complete the holistic representation or being of an individual, together with the cognitive and skills domains. The affective domain completes the wholeness of a person, through attributes related to values and attitudes, not only of self, but also towards others (Krathwohl et al 1964).

_biopic: the dynamic and fluid character of a person or setting in a biographical film (Bingham 2010) relates to the actively engaged process of the study. The biopic investigation (Reynders 2012:6) is used as an approach to the case study inquiry, and replaces the static character with a dynamic understanding.

_complex design issues: design challenges that relate to social conditions or scenarios, and meaning-making of people within specific contexts. Also known as wicked problems (Rittel & Webber 1973:160) or matters of concern (Latour 2008).

_critical artefact: an object embedded with meaning, or eliciting a response in the public domain as an 'instrument' for the generation of discourse about a specific topic or complex design issue (Tharp & Tharp 2018:7-8). Critical artefacts in the context of this study are process based, composed of symbolism and meaning, and not meant to be an aesthetic composition as an object or product. It relates to a 'thing' of complexity, instead of a single faceted 'object' according to Sloterdijk (in Latour 2008).

_discursive design: the collective term for design practices that produce critical artefacts to extend conversation and discussion about critical aspects encountered in society (Tharp & Tharp 2018:112).

_disruptive practice: a way of upsetting the status quo within an established discipline. The purpose of disruption is to challenge outdated ideas for positive change. In the context of business innovation (Christensen 1997) and the disruptive design method to promote social and environmental change (Acaroglu 2017).

_dissociation: a way of distancing from the self within a situation and adopting the perspective of the participant or user. In the medical field, this is referred to as normative dissociation (Butler 2006), which is also applied to the performing arts as a way of connecting to the essence of a character (Panero et al 2019).

_human-centred approach: a way of dealing with design challenges, traditionally part of industrial and project design (Norman 2013) and of design thinking (Brown 2009). Critique of this approach, with an object-centric priority, excludes the complexity of social system priorities where human-centredness takes a situation-centred perspective instead (Janzer & Weinstein in Resnick 2016:288).

_interiority: as an abstract concept, interiority is "mobile", "elastic" and "not an absolute condition". It reveals possibilities, is referred to as a "transferrable and reusable condition" and does not subscribe to absolutes (McCarthy 2005:112-113) as compared to the physical architectural interior.

_method: a documented and predetermined way of performing a task.

_process: a series of actions performed to accomplish a task. The sequence can be random and recursive and is not prescribed to be linear and fixed (Lawson 1990).

_represent(ation): communicating abstract and complex ideas to an audience, visual or verbal.

_spatial design: refers to all creative disciplines in the built environment, this study includes interior architecture, interior design and architecture.

_threshold concepts: reflective moments where students become aware of new or other ways, where shifts are possible in their learning. According to Meyer and Land (2005) characteristics of threshold concepts are transformative, irreversible, integrative, troublesome and bounded.

_transformative engagement: within cognitive and development science, transformation is referred to when individuals demonstrate growth and change within a specific area of themselves. Perry (1970) particularly demonstrates this along a scheme of development, Belenky et al (1986) through 'ways of knowing', Mezirow (1991) relates transformation to frames of reference and perspective transformation and Krathwohl et al (1964) includes the affective domain to development.

_translate: the action of internalising complex issues and making something of that understanding. This is understood in a spatial and abstract sense, not only related to language.

Document outline

Part A contextualises the real-life conditions in which the research inquiry is situated. *Chapter 1* describes the background, problem statement and theoretical context. The research opportunities through an 'interior' lens, focus on a micro scale understanding of living conditions and scenarios. The purpose of the study and research questions are framed by the delimitations and limitations. Focus on methodology as a way of creative yet critical engagement, includes as example a plug-in workshop

description created to probe the research issues. Part one is concluded with a definition of terms and concepts and an overview of the structure of the document.

Part B integrates the theoretical conditions of the study by integrating three different theoretical discourses in an interdisciplinary inquiry of literature in separate chapters. *Chapter 2* contextualises spatial design pedagogy by tracing the dissatisfaction of the current situation. Discusses disruption as a way of dealing with complex design challenges by challenging the status quo of a design inquiry. The introduction of dissociation, as a psychiatric condition, relates to creative fields in the form of normative dissociation where levels of dissociation are revealed. *Chapter 3* discusses a human-centred design approach, by addressing design thinking (DT) and designerly thinking (DℓT) and the debate around empathy, or no empathy. *Chapter 4* combines transformative learning, ethical and cognitive development of students, graduate attributes and design citizenship under an overarching understanding of transformative engagement. Various developmental and educational psychology theorists are discussed in order to formulate an in-depth understanding.

Part C outlines the research methodology and biopic investigations. *Chapter 5* gives a full description of the method, data collection and qualitative data analysis consisting of five steps and includes recursive abstraction and keywords in context (KWIC) analysis. A personal account clarifies how the various aspects to the method is personalised as a hands-on manual process of investigation. *Chapter 6* is structured in two parts. *Section A* is an in-depth account of the data analysis of the four separate case studies, as detailed-biopic investigations. *Section B* makes a comparison between the thematic narratives emerging in the data analysis and presents the syntheses as a relational biopic investigation from which threshold concepts, as moments of transformation, are identified.

Part D is a discussion of the integrated understandings and insights emerging from the study, informed by the threshold concepts. It outlines the small shifts and transformations and contextualises this in the context of a wider view of design intent, agendas and agency. *Chapter 7* gives postulations and provocations and highlights noteworthy observations as discussion. *Chapter 8* concludes the study by outlining the areas in which the research can make a contribution and points to areas of future research.