

intermission

The morning is cold on my skin. I have has been waiting for this day for a long time. I turn the corner with two crates in my arms, carrying a selection of second life materials to the studio. When I look up, a sea of eager faces meets my eyes. Some reveal a little fear for the unknown. Still, the excitement is palpable.

At the end of the session, I am relieved. It was a good experience in many respects. I hope that the students could really take something positive from it. Perhaps not everyone benefitted in the same manner, but still, it seems as if in some small way a shift can be seen on the horizon. Some became aware that there are other ways to approach design projects.

[biopic 1]

PART C METHODOLOGY AND BIOPICS

Research design

If you want to assume a relativist perspective, your theory in designing a case study may very well concern the way that you will capture the perspectives of different participants, and how and why you believe their different meanings will illuminate your topic of discussion (Yin 2014:17).

In light of an investigative approach, a qualitative research design is selected. It uses a case study approach, in particular the instrumental case study, with a focus on the issues of concern instead of the actual case(s) to show different experiences and perspectives (Creswell & Poth 2018:98-99). The case study, as empirical inquiry, investigates phenomena within real-world contexts and relies on multiple sources of evidence (Yin 2014:16-17). This research includes four workshops and thus explores four case studies, as multiple descriptive cases within an embedded design of various units of analysis. The descriptive approach to analysis describes the activities in the workshop as phenomena, within the studio, as real-world context (Yin 2014:50, 238).

Although the case study outlines the considerations for data collection and analysis, this investigation motivates for the use of 'biopic' instead of 'case study', as operative term. The biopic as investigation (Reynders 2012:6) is used as a device of the case inquiry. It is argued that biopic, with reference to biographical film, is dynamic and fluid and relates directly to the 'life' of a person or character in a particular context (Bingham 2010). Current scrutiny of the biopic genre reveals that its character is changing to include groups, not only individuals, in its representation (Vidal in Brown & Vidal 2014:22). Polasek (in Polasek & Cartmell 2020:310) notes attributes of the biopic (after Custen 1992) that are relevant in the context of this study: accurate and true; emphasis on subject rather than the plot; time and place specific; and containing montage or narrative techniques.

Therefore, the thesis focuses on the subject and 'process' of investigation, relating to dynamic and fluid conditions, which align with the meaning of biopic representations and not representing the static words 'case' nor 'study'. From here onwards, the four investigations will be referred to as biopic investigations, where the evidence of the 'life' and 'actions' of the experiences and interpretations of participating students are reflected in the different research activities, through the interpretive lens of the researcher.

Figure 5-1 below illustrates the unfolding of the biopic investigations, describing the context of each spatial design studio where primary data is collected, with a description of the studio project into which the workshop 'plug-in' is inserted. Creswell and Poth (2018:218) refer to 'within-' and 'cross-' case analysis where similarities and differences are noted, before assertions and generalisations are made based on evidence and reasoning. These are referred to as 'detailed-biopic' analysis where each workshop is discussed in detail and then analysed across the four workshops as 'relational-biopic' analysis. Yin (2014:164) refers to cross-case synthesis where individual cases were first completed. These are presented in *Chapter 6* as four pre-planned workshops, as four biopic investigations.

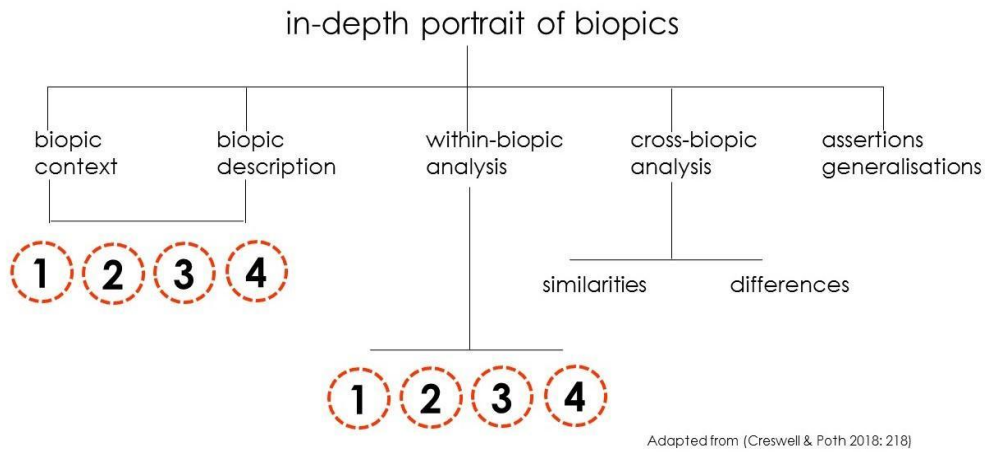


Figure 5-1: Biopic investigation overview

intermission

Students make meaning of the activities in their own way, they assume different personas, sometimes without realising it, in order to delve deeper into the issues they are questioning. Each one finds a 'handle', an 'entry point' into the workshop. For some students it is an intuitive process, for others, forced. The connection is established regardless.

I wonder and observe, student and researcher, each with their own experience, expectation.

Chapter 5 IMMERSIVE METHODOLOGY AND THE 'PLUG-IN'

Paradigm and approach

The reality that life experiences and worldviews of people lead to varied interpretations of what is meaningful is the focus in this part of the research. It relies on the responses of participants and is situated as a constructivist philosophical worldview and interpretive framework (Creswell in Cohen et al 2018:9; Creswell & Poth 2018:24). Where groups of students participate and reflect on the workshop activities, an array of responses, including very personal perspectives, inform the data. Cohen et al (2018:23) explain:

...people actively and agentially 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...

The generative aspect of constructivism supports the study's spatial design learning focus. Students are actively involved in the understanding of complex issues and decision-making in design. The social side to constructivism relates to the studio environment through interactive peer learning. Here, the processes of design development and iteration assist in the conception, cognition and construction of meaning (Hammersley in Cohen et al 2018:23). As such, the methodology of this study is process-driven and not solely focused on physical or quantifiable outcomes, from both the perspectives of the research participants and the researcher. The constructivist educational philosophy therefore supports the view of students as design researchers and active agents in their own learning, while also contributing to learning of their peers.

This study acknowledges the risk of a constructivist approach that assumes that students have the skills, knowledge and experience to construct meaning on behalf of others and in that way formulate an in depth understanding of different worldviews that are not their own. Alternative worldviews are dependent on "multiple realities, value-bound research, limit to time- and context- specific findings and irrelevant of cause-effect investigations" (Yin 2016:22). The intent of the investigation is to deliberately expose students in the spatial studio to other ways of knowing and making meaning, to create an awareness of other perspectives, to confront personal prejudices and create awareness of different understandings. Although they might not have the required knowledge or skills, similarly, practitioners in industry might also have gaps in their experience to shift their understanding of complexity in design projects.

The biopics are situated in the third year studio, to demonstrate the potential of transformation. It is assumed that they have the capability to become aware, although they might not be able to internalise their experiences. It is not seen as the only place or moment where transitions are possible. In fact, learning is continuous and depends on personal biases and dispositions. However, they are given the opportunity to make sense of the process in their own ways, albeit fragmented or biased from a designer's perspective, instead of a human-centred approach. The study speculates to what degree students (designers) are able to empathise with users, and realises that responses could cover a spectrum of intensity and engagement.

The introduction of a human-centred approach in the studio further assists in the cognition of needs and requirements of users, other to that of the student as a designer. By adopting an emic perspective (from the social sciences), the participant's view reveals an 'insider' perspective on the research (Creswell & Poth 2018:91). The emic perspective serves a dual role in this study: the researcher can obtain the view and experience from the students as participants, but also enable them to be immersed through a human-centred approach as a user/occupant to formulate an 'insider' understanding of matters concerning the project.

The qualitative research tradition supports the constructivist worldview, by placing people at the centre of the study. Cohen et al (2018:288) explain that people create meaning through social interactions in specific contexts and it is up to the researcher to understand and interpret the multi-varied situations and conditions. The inductive process starts with particular observations to discover patterns to make meaning of phenomena (Babbie 2014:22). As one of the characteristics of this qualitative study, it is informed by direct collection of primary data in the spatial design studio, as a natural setting. It provides rich narrative descriptions detailing how behaviour shapes understanding of complex issues in design. Participant perspectives support the emerging and evolving nature of this investigation as the study unfolds (McMillan & Schumacher 2014:345). It furthermore shapes the researcher's understanding and insight during the discovery and exploration of data analysis and findings related to the four different workshops.

The workshop – plug[interiority]

The detailed plug-in workshop discussion in *Chapter 1* sets the scene for the unfolding of the biopic investigations' data collection and analysis. The different activities (listed below) allow students to engage critically during the four-hour duration, in which the students generate primary data as active participants. "Active cognition and deliberate perception" assist in the construction of meaning (Cohen et al 2018:23) during each of these activities, in which students are confronted with their own views. Furthermore, "...this affects the worlds we inhabit and the way in which we interact with the objects and people in them" (Cohen et al 2018:23).

_1a problem statement

Awareness of the macro context, the meso environment, and micro scale encounters

_1b descriptive keywords

Focusing the essence of the initial experience and personal perspective with words

_2 spontaneous vignettes

Translating intangible aspects and scenarios into visual representations

_3 critical artefacts

Making symbolic and abstract representations by internalising of complex concepts

_4a & c critical reflection 1 & 3 – self and peers

Interaction and discussion of personal interpretations; group discussion at end

_4b critical reflection 2 – written reflective essay

Individual critical reflection on frames of reference, perspectives and worldviews

The workshop provides opportunities for students to make personal connections and to immerse themselves, as they feel comfortable, within the discomfort of this disruption in their studio project. They have the chance to reflect on their own identity as a designer in the built environment. Giddens (in Crouch & Pearce 2012:5) argues that "... we have to *work at* discovering our identity." The question of a design student's identity revolves around the potential for developmental transformation of the self in relationship to others and the world. Crouch and Pearce (2012:13) say that designers and researchers have a lifeworld or habitus (after Habermas and Bourdieu respectively) that is "formed through informal and unconscious negotiation with institutions that regulate us [...] as a subjective realm..." This forms the context for personal perspectives and bias in the designer's mind-set and attitude towards design challenges. The workshop aims to challenge these views and judgements in order to set the scene for personal growth and transformation. The question of identity then extends beyond the individual into the designer's role as agent, to facilitate positive change in situations and contexts where needs of other people are prioritised.

The plug-in is used in the core design studio, as deliberate intervention, but the study hopes to demonstrate that this way of knowing could be central to studio engagement in academia and practice. It is situated within the supporting modules of the particular programme's curricular content and acknowledges the relational condition as integrated learning. Knowledge is imparted in the supporting modules, and interpreted through actions and ways of knowing in the design studio, which is not seen in isolation. This forms part of the larger debate on design for the future and a new description of design thinking (Figure 5-2).

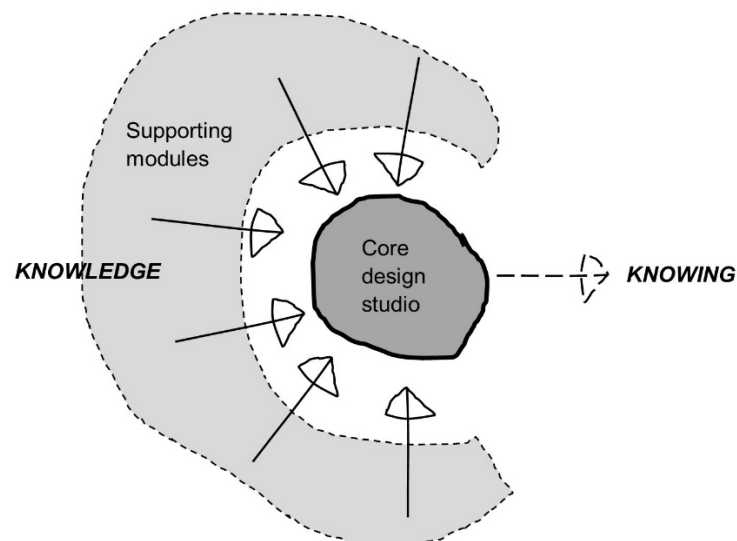


Figure 5-2: Integrated ways of knowing – core design studio and supporting modules

Sample and population

Participants in the research are selected using purposive sampling, where small groups with knowledge of a particular topic, are chosen (McMillan & Schumacher 2014:5). Third year interior architecture and design students from three higher learning institutions (biopics 1 to 3), form the purposive sample for this study, together with a cross-disciplinary student group in biopic 4. The inclusion of the combined student group, representing interior architecture, architecture and fine art, from third and fourth year programmes, was unintended. However, this study embraces the unpredictability as part of the exploratory nature of the investigation, as the students in biopic 4 have a similar understanding of the complexity of the design within an architectural field in the built environment, to the rest. Moreover, as a purposive sample, the student group as a whole is within or close to the exit year of their qualification and selected for the growth potential in their cognitive, ethical and creative development within an educational milieu. These comparative characteristics provide the basis for the researcher to conduct the instrumental biopic investigation in multiple workshops by inserting the same disruptive action in the four biopics.

Research ethics

The University of Pretoria research ethics process supports this study, as all ethics clearance and approvals are obtained prior to the start of any research activities. All students, as active informants, are voluntary participants by giving their permission for collaborating in the research when signing an informed consent form. The researcher explains the details of the workshop during a pre-briefing session, including how it relates to their current studio project. A PowerPoint slideshow introduces the scope and focus of the intended activities, thereafter an interactive question and discussion session follows. The studio project of biopic 4 already has a disruptive nature and thus no pre-briefing presentation is required. The details specific to the workshop activities are discussed in all biopics during an interactive question session on the day of each workshop, outlining the context of the design project into which the insertion takes place.

The students' creative work (primary data) is treated confidentially and anonymity is assured, unless students explicitly give permission to be identified. All students, except three in biopic 3, grant full permission to be identified in photographs. The rest give full informed consent to be identified in photographs and for use of their names associated with their work. Students can withdraw at any stage during the activities. Three students in biopic 3 did not complete the workshop. The full data set is kept in secure storage at the University of Pretoria. Ethics clearance approves that results can be made available in this PhD thesis, can be included in accredited journals and conferences, and will be publicly available on the university's online platforms. However, confidentiality of participants remains assured where requested. Ethics clearance supports the research project at large (reference number EBIT/77/2018). See research ethics approval from the University of Pretoria's Engineering, Built Environment and Information Technology (EBIT) Faculty Research Committee, dated 30 July 2018, in Appendix A.

Role of the researcher

The researcher documents the primary data by means of collecting the hard copy evidence of work produced during the four-hour activities (text, drawings and three-dimensional artefacts). In addition, the entire process is photographed and observational notes made with the researcher in the studio environment with the students, as an observer. This presence as studio master or coordinator is a normal phenomenon in the general studio context, although the researcher is only known to students in biopic 1. Flick (in Cohen et al 2018:310-311) lists four roles of the researcher: stranger, visitor, insider and initiate. This study concerns the first three roles, as the researcher is foreign to biopics 2 to 4 and never becomes a complete participant. However, the in-situ situation informs the unfolding of the activities of each biopic and informs the unstructured observation (Cohen et al 2018:543).

This immersion is part of the qualitative research situation (McMillan & Schumacher 2014:20). The role of the researcher, placed on a continuum between 'insider' (complete participant) and 'outsider' (detached as observer) (Cohen et al 2018:311), is important in relation to participant observation that could facilitate or limit the degree and nature of the students' responses. Whilst mutual understanding of the workshop exists between researcher and participants, the cooperation and buy-in from the students remain the challenge during the workshop activities. This influences the students' perception and experience of the researcher as part of the studio – insider versus outsider.

Various classifications of observation on the continuum of observation become evident and can be seen: b1 – *participant-as-observer* and known to the students with intimate knowledge of their development; b2 and b3 – *complete observer*, with covert observation in the studio; and b4 – *observer-as-participant* with some participation in the studio context (Cohen et al 2018:543). The researcher's entry into the context is transparent and clear, however, buy-in from all the groups cannot be guaranteed at the outset.

Morrison (in Cohen et al 2018:543) outlines various settings in which observation for data gathering takes place: physical setting, human setting, interactional setting and programme setting as outlined in Table 6-1 in *Chapter 6_Biopic investigations*. These frame the research and enable the researcher to make detailed observational notes. In this way, 'critical incidents' can be revealed, albeit seemingly insignificant at the time. These could provide important insights into matters concerning the investigation (Cohen et al 2018:551), as it is inductive in nature, where topics or themes emerge from the workshop data (McMillan & Schumacher 2014:3; Yin 2016:100). The unveiling of small moments of insight are important in the context of the study where the emphasis falls on evidence of transformation and a shift in student development.

Qualitative data collection

Biopic investigation data

The data collection process takes place in the design studio, where students participate in the workshop. Each activity requires students to complete certain actions, which are documented real-time. A series of A2 sheets capture the students' responses. Table 5-1 outlines the nature of the data collected per activity. In addition, the researcher and research assistant document field notes through participant observation during the workshops and reflexive notes afterwards (Yin 2016:152, 169). Data captured by the studio's own studio masters and / or external examiners, complete the data set.

Table 5-1: Workshop data collection

_1a problem statement	_1b descriptive keywords	_2 spontaneous vignettes
Written statement A2 sheet	A series of words on A2 sheet	Five vignette drawings on A2 sheet
_3 critical artefacts	_4a & b critical reflection 1 & 2 (self and peers)	_4c critical reflection 3 (self and peers)
Symbolic or abstract representations, from second life materials or objects	Written notes on A2 sheet	Written notes on A2

Qualitative data analysis

Triangulation

The biopic investigations allow for triangulation of data on multiple levels. Cohen et al (2018:265) list different types of triangulation, which includes those relevant to this study, methodological triangulation and investigator triangulation. Four workshops are conducted, using the same workshop brief, but at different locations with consideration of different studio projects with related contexts, as well as a variety of student groups.

Methodological triangulation makes provision for “the same method on different occasions or...different methods on the same object of study” (Cohen et al 2018:265). The same workshop is facilitated at four different schools, combining different modes of engagement through a variety of activities. In this way, an array of responses is documented, as students are expected to document their observations and experiences in text, images and three-dimensional artefacts using second life materials. Through critical reflection of complex problems, primary data becomes personal representations of active studio inquiry. As investigator triangulation (Cohen et al 2018:265), the researcher and research assistants observe and document the workshop activities by making observatory notes as the activities unfold and by capturing reflexive notes afterwards. Triangulation in this instance exists in the triad between the intent of the students producing the work as original data creators, the assistant who is an outsider to the workshop, and the researcher as primary data collector, who is integral to the process. Each participant is documenting independently to the other (Cohen et al 2018:265) and in this way, a relation between the research voices is established.

intermission

The data analysis phase is an intuitive and manual process where I use coloured pens and markers in a spontaneous sequence of analysis without coding. The mere thought of coding causes my throat to tighten, as the interpretive freedom, in my opinion, would be lost. I also want to stay connected to the data, as an 'old school' analogue approach speak directly to my creative and inquisitive spirit. I am nervous during this process, because the academic support to follow such a route still eludes me. However, I trust my intuition and continue with the process I devised, which includes a variety of rigorous and systematic steps. Although I am a rhizomatic thinker, I know it is important to prove an empirical process of inquiry. One day, quite late in the process, Robert Yin's book, 'Qualitative research from start to finish' (2014) crosses my path when it unexpectedly finds me in a local bookstore. This acquaintance changed everything.

Analytic phases

The analytic process described by Yin (2016:186), contextualises the qualitative data analyses of the biopic investigations through a cycle of five phases: 1-compile, 2-disassemble, 3-reassemble, 4-interpret and 5-conclude with an interactive movement between the stages to ensure rigour and critical reflection. The data of the four biopics, detailed-biopics as individual investigations (Part 1, *Chapter 6*) and relational-biopics as cross-comparisons (Part 2, *Chapter 6*), are analysed between September 2018 and June 2020.

1-compile

Stage one of the qualitative data analysis includes compiling and sorting of primary data as a database of evidence. This is a methodical process where the hardcopies of various A2 worksheets by students, researcher and assistants' field notes and reflective notes, examination evaluations, including external feedback, students post feedback, together with photographic evidence of the process and artefacts, are sorted and categorised using manual and computer assisted tools (Yin 2014:124; Yin 2016:184). The chain of evidence supports the triangulation of analysis and findings of data sources, evaluations, perspectives and methods (Yin 2014:120). Access to raw data and detailed analyses can be requested from the researcher.

Primary data compilation occurs during the workshop duration, between August 2018 to March 2019. Data sets are rearranged in order to systematically collate evidence from 56 students, including three assistants and three examiners, within four workshops. The examiners did not participate in the workshops; their comments were only noted for the purpose of further triangulation of data. A first round of preliminary analysis contextualises the data to orientate and familiarise the researcher with the scope and initial topics emerging related to research questions (Yin 2016:191). Refer to Figure 5-3.

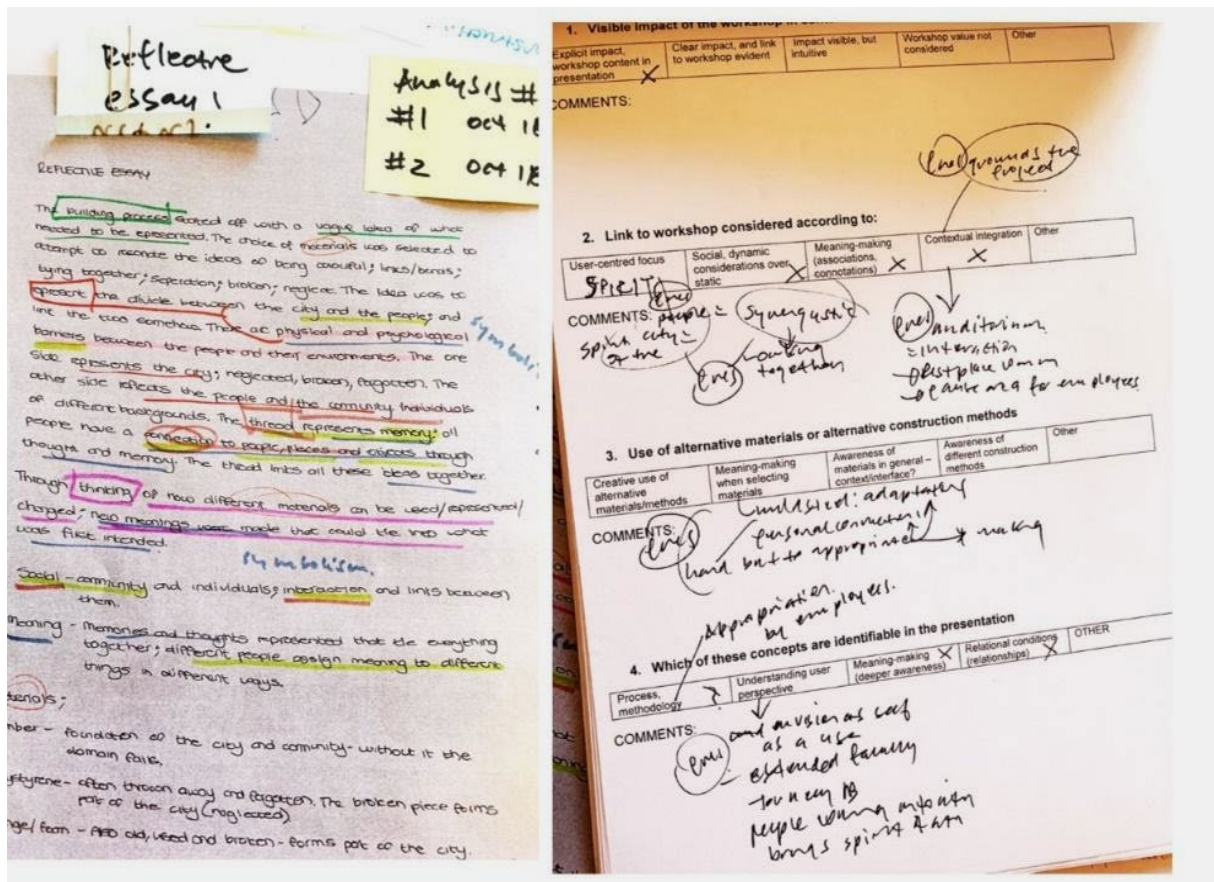


Figure 5-3: Compilation of primary data

Detailed-biopic analysis (within)

2-disassemble

Stage 2 is a recursive process that critically reflects on the workshop brief, the research questions and literature review during the disassembly. In this study, connection to the data is maintained by using coloured pens and markers and working on copies of the students' worksheets to identify concepts and topics, especially in the analysis context without coding. Each student's work is considered individually and a summary per activity in each biopic is written and the findings captured in a matrix or diagram.

In spite of the uncertainty, many researchers prefer to disassemble their data without formal coding because creative ideas seem to move faster and better. To overcome the inevitable pitfalls of inconsistency and inaccuracy that might occur, these researchers will then return to their original data many times and make sure that their disassembled topics are as faithful to the original data as possible (Yin 2016:200).

Figure 5-4 shows an example of the disassembly stage, where vignettes are analysed as visual data. Researcher notes are included using strategically selected colours that relate to different topics emerging. These are transferred to a separate sheet to record findings of each activity per student.

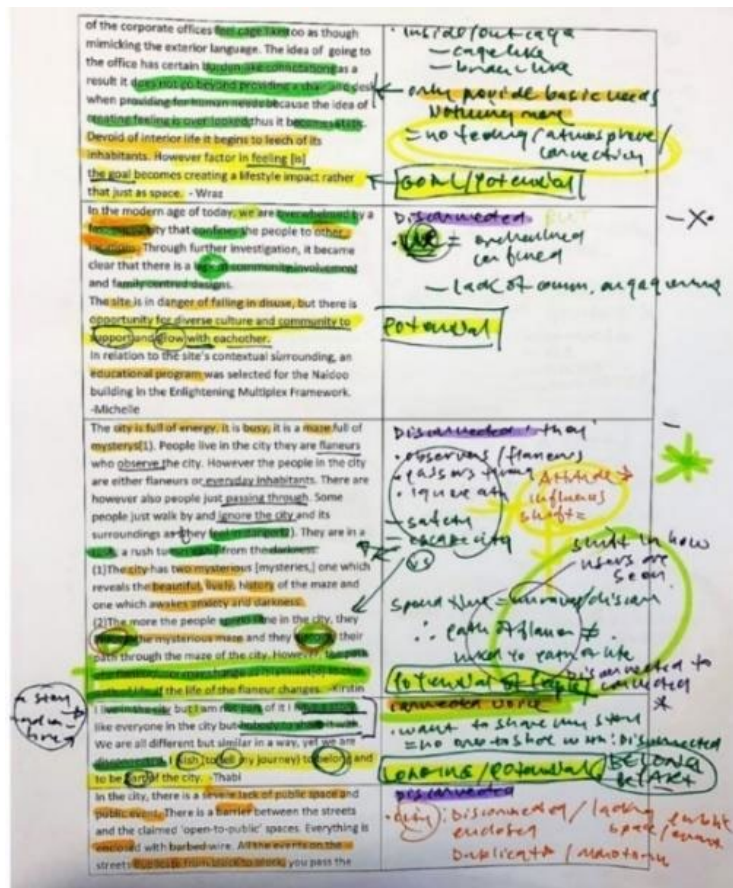


Figure 5-5: Derived notes during disassembly

Recursive abstraction

To supplement stage 2-disassembling of Yin's (2016) qualitative data analysis cycle, recursive abstraction as qualitative data analysis tool is introduced, where data are condensed systematically in six steps to disassemble phrases into a condensed collection of patterns (Polkinghorne & Arnold 2014):

- 1: *record* phrases or responses of participants
- 2: *transfer* highlighted phrases into a table related to research questions
- 3: *paraphrase* data into concise units of data
- 4: *combine* similar responses to create themes
- 5: *code* responses as themes
- 6: *identify* patterns.

Table 5-2 below shows an example of the recursive abstraction steps with the use of a student quote (b1_Dhané). Step 4-combine shows that the analysis reveals manifest (data interpretation from the brief) and latent (emerging data findings identifying other related topics) (Schreier 2012:176).

Table 5-2: Example of recursive abstraction

1. phrase	2. transfer	3. paraphrase	4. combine	5. themes	6. patterns
"...the aim however is not to formalise the 'singing in the streets', but to merely extend it."	-not to formalise -but to merely extend	-not formalise -extend	-not formalise -extend -appropriate -choice	-fluid -user control	HUMAN -CENTRED

Recursive abstraction has been criticized in that it is a method that could disregard data as part of the abstraction process and as a result, not be reliable (Oun & Bach 2014). Polkinghorne and Arnold (2014: 2) argue that when steps four and five (combine and themes / codes) are repeated, the researcher moves between topics to look for common links informed by control data that was collected by the researcher at the start, to contextualise the analysis. They recommend the referral to original transcripts when patterns are identified, in order to ensure validity in meaning. Oun and Bach (2014:256) further recommend the researcher to declare the data omitted and included after every stage, with a motivation for validity and accuracy of data analysis.

This study adapts recursive abstraction as described above, by including diagrams or mind maps (Martin & Hanington 2012:118) as a visual means to organise the data in order to find relational meanings (Figure 5-6). In this way, the analysis moves beyond tables of data, into interconnected fields of data, revealing relationships and integrating steps four to six of recursive abstraction visually. The study integrates the disassembly of each activity for each biopic as detailed-biopic investigations, aligning with the research sub-questions.

An adapted recursive abstraction process is used:

- 1: record responses of participants in a two column table (transcripts left, notes right)
- 2: highlight pertinent phrases in coloured pens and markers to identify different topics
- 3: identify the context of use regarding the topic in the adjoining column
- 4: transfer the data per topic to a separate sheet (includes all students per biopic)
- 5: create a mind map of the data to indicate the (inter)connections
- 6: simplify the mind map into a condensed graphic



Figure 5-6: Recursive abstraction adapted using coloured pens, markers and mind-maps

Keywords in context (KWIC)

'Keywords in context' (KWIC) are used during the recursive abstraction analysis, in particular during step three (identify context and use) of the adapted method. According to Bernard and Ryan (2010:192), KWIC has a long history as a general method of analysis. The context of the word determines the meaning "...to understand a concept, look at how it is used..." (Bernard & Ryan 2014:192). Phrases are highlighted and keywords identified that address the pertinent aspects students consider in the workshops.

This study follows a manual / hand-method of KWIC and recursive abstraction. Data analysis software programmes are useful tools, but in the context of this study, manual analyses were more spontaneous and interpretive and the researcher could stay connected to the data by undergoing a hands-on, messy process of iteration between stages of analysis, refer to Figure 5-7. The use of thick descriptions provide opportunities to represent the "complexity of situations" (Geertz in Cohen et al 2018:19) according to the detailed qualitative data analysis process.

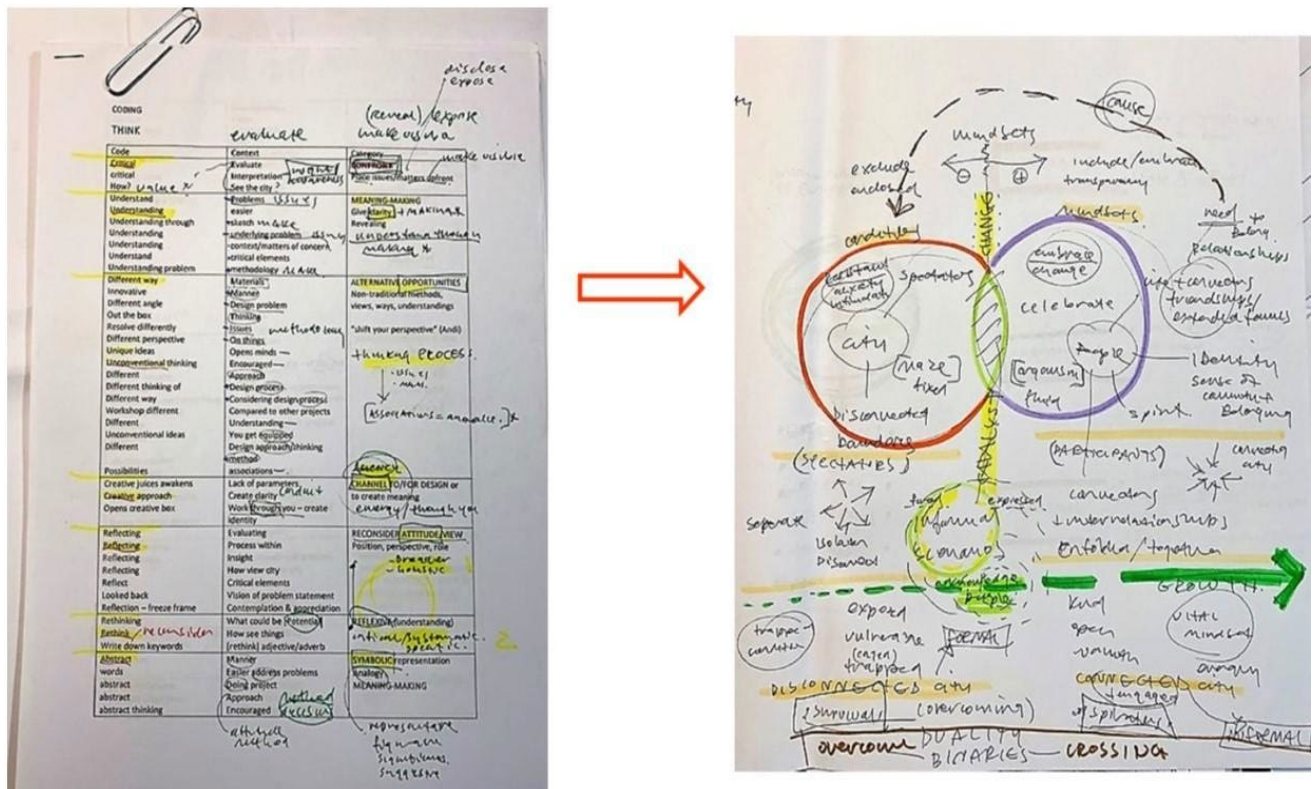


Figure 5-7: KWIC analysis and visual representations

Phases 1-compile and 2-disassemble of the Yin's (2016) analytic phases are used in the detailed biopic investigations to delve into the essence of each of the individual workshops. Stage 3-reassemble facilitates the relational biopic investigations, where cross comparisons are made between the four schools, across the various workshop activities, and according to themes and topics emerging.

3-reassemble

The third stage, reassemble, is a continuation of the hands-on process of inquiry and according to Yin (2016:202) this is where ideas are sorted, comparisons are made and new insights are revealed. The relation of various experiences and expressions by students linked to research questions, result in the identification of patterns. The use of data arrays (tabled analyses) of topics emerging as shown in Figure 5-8 becomes part of the inductive process (Yin 2016:204).

During 3-reassemble, seven patterns emerge from the data: 1) disruptive modes, 2) levels of dissociation, 3) empathetic routes, 4) ways of thinking, 5) process in action, 6) developmental transformations, and 7) challenge : shift. These are highlighted to form the interpretive framework of the thematic narratives in the next stage, 4-interpret.

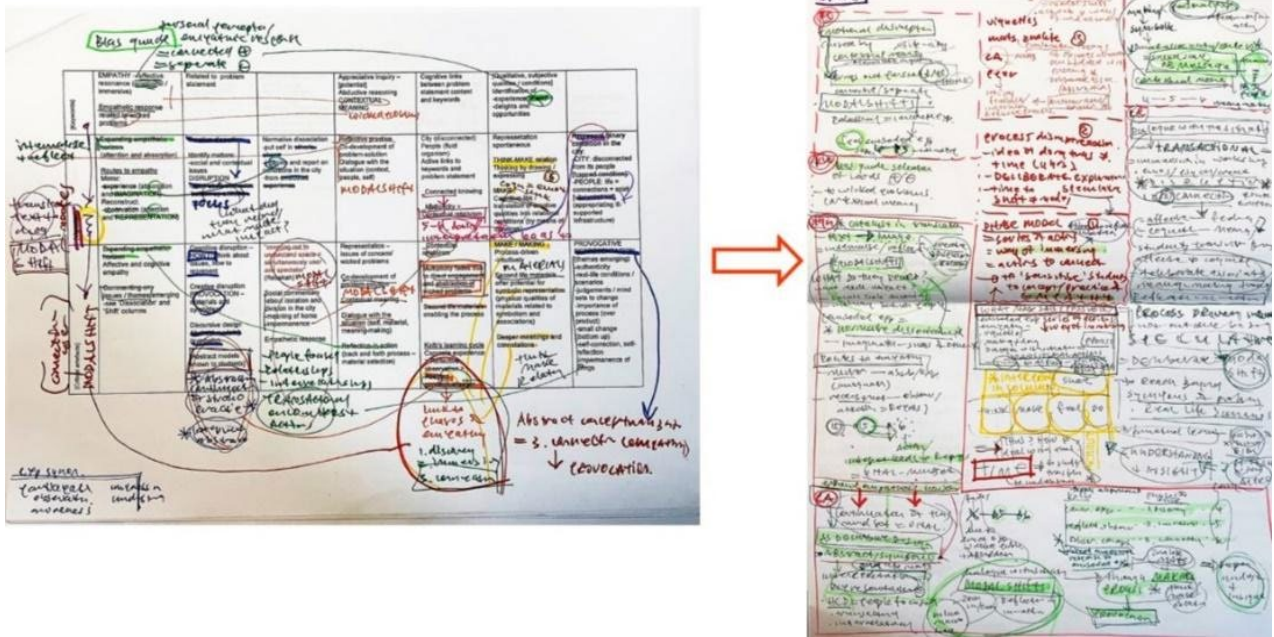


Figure 5-8: From data matrix as an array to biopic narratives

Thematic matrices (Figure 5-9) are completed per detailed biopic, which are reassembled as relational biopic investigations. The analysis cuts across the four workshops in comparison as summary frameworks for findings. The hierarchical relationships between the patterns are used to structure the interpretive frameworks: “To get started in this process, a chronological matrix would enable you to search for patterns of change” (Yin 2016:205). This is especially useful where the research aims to investigate possibilities of transformational shifts in student development within the context of research-through-design (Tharp &Tharp 2018:126) and design education.

During this phase of the analysis, direct quotes are included to ensure the analysis stays close to the data and to avoid the researcher’s own bias. Robustness of interpretation is critical, as rival thinking is considered in order to refine interpretations (Yin 2014:210). Empathy is an example. It could be seen as a beneficial way to connect to other’s needs and situations (Kouprie & Visser 2009), but rival thinking argues it to be a hindrance and obstacle (Bloom 2016).

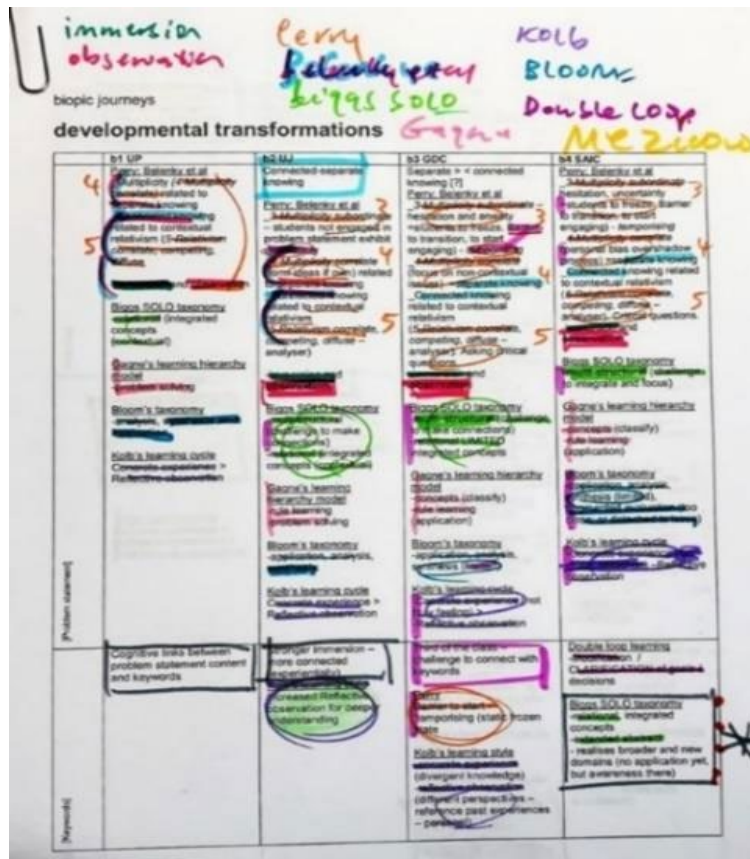


Figure 5-9: Thematic matrix as summary framework

4-interpret

Interpreting may be considered the craft of giving your own meaning to your findings – that is, your reassembled data and data arrays. This phase brings your entire analysis together and stands at its pinnacle (Yin 2016:220).

The analysis journey is a sequential process from derived notes in 2-disassemble, to data matrix as array and biopic / thematic narrative writing in 3-reassemble. The meaning of findings is consolidated in 4-interpret, where the condensed workshop journeys are documented. These are written as detailed accounts of the relational findings across the four biopics, according to each of the seven themes as listed above. The fourth phase, 4-interpret is where the significance of the study emerges and the discussion relates to what the finding of patterns means in the research context as a comprehensive interpretation (Yin 2016:218-220). Since this is an inductive and interpretive research project, Yin (2016:219) describes the implications of data,

Use of the term *interpreting* deliberately signals the possibility that others might interpret the same data differently. If you are ambitious, you may want to strive for an interpretation that anticipates the main alternatives and addresses why those may be less compelling.

By going into a descriptive mode, the summary frameworks developed for the seven patterns in 3-reassemble are used as detailed baselines to write the workshop journeys of the relational biopics

(Figure 5-10). The literature review supports the said narratives where theoretical grounding for concepts and interpretations are corroborated and references noted in an interpretive way (Cohen et al 2018:20).

The evidence of introducing a disruptive practice reveals that it is a positive action or insertion, even though the immediate results of the biopics might show a small number of students responding well to it. The fact that small but significant shifts are visible means that students are able to re-orientate and reflect on their actions. This might be throughout the process and not necessarily only at the end. The main points of significance in the biopics relate to incremental small change and impact of abstraction.

Representation could be considered through *discursive design* by making visible issues of concern, but also representing the self (student designer) as the user instead, through *normative dissociation*. This proved to be a big personal disruptive practice during the workshop in all biopics.

workshop journeys – example _disruptive modes

Figure 5-10: Workshop journey per thematic narratives

Yin (2016:222) outlines three modes of interpreting in order to ‘craft’ the interpretation section with a specific aim: description, description with call for action, and explanation. This study uses a combination of the first two. In description, the meaning and interpretation of findings are focused through a descriptive framework guided by the researcher’s interpretive discretion. In this study, the reference to ‘framework’ is reconsidered and the use of ‘guideline’ preferred instead. As the investigation is speculative, probing and asking questions not aimed at finding solutions, a fixed framework becomes too prescriptive. Guidelines are interpreted as fluid and responsive to various contexts and interpretations. In this light, the patterns emerging in 3-reassemble, are used for the discussion, which could have been different, depending on another researcher’s interpretive discretion (Yin 2016:223). “[D]escriptive frameworks can aim at interpretations about much broader issues...” and be used as a “mode of interpretation”, according to Yin (2016:224). Thick descriptions (Geertz in Yin 2016:227) reveal deep understandings of the research context where new lines of thought can emerge directly from the participants’ perspectives. Combining these experiences with relevant literature can lead to an understanding of broader contextual insights.

Description with call for action flows from the main description, as in this study, the call for action is not considered beforehand (Yin 2016:228). The need for action is revealed during the analysis and is not a true call for action, but a call for continued critical inquiry, an extended provocation for speculative design education to further research-through-design in the spatial design studio. Yin (2016:230) cautions for a declaration of bias and reflection of scholarly care at this point, where advocacy issues need to be grounded in related literature, to be credible.

Journey mapping and visual confections

Visual representations of findings are communicated by means of complex diagrams, visual confections (Tufté 1997) or journey maps (Marin & Hanington 2012:196). The study maps the biopic journeys to reveal the reflective moments, where evidence of transformation becomes visible in order to view at a glance the student experiences. This includes the degree of engagement of the workshop, the threshold concepts, impact moments and shifts appearing. These include detail regarding emotions, engagement, peer interaction and transformation across the four-hour timeline, together with a summary of threshold concepts also appear (Figure 5-11). The interpretive phase is empirically grounded by integrating research findings, related to the literature review and three research questions.

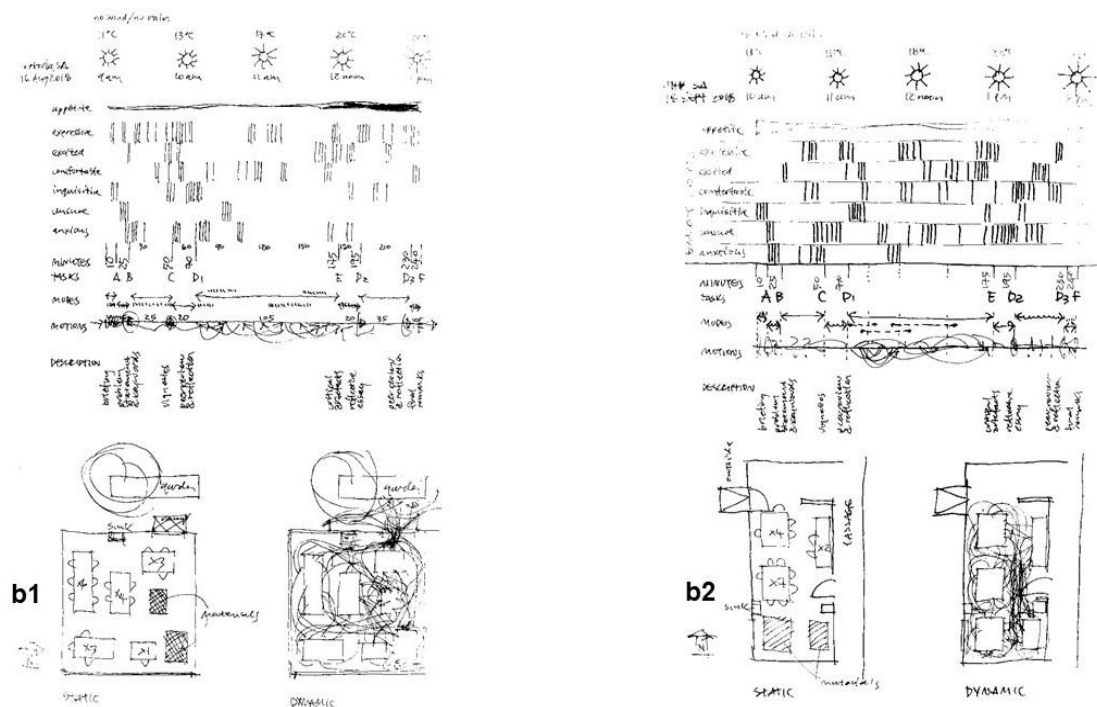


Figure 5-11: 'Working' journey mapping and visual confections example

5-conclude

A conclusion is an overarching statement or series of statements that raises the interpretation of a study to a higher conceptual level or broader set of ideas (Yin 2016:235).

The conclusions are based on evidence from the empirical process in the preceding phases. It should speak to the "so what" regarding the research and also consider the relevant types of conclusions listed by Yin (2016:233-242):

- 1) *Making substantive propositions*: The research extends its provocation to reveal substantive issues (Yin 2016:236), or wicked problems.

- 2) *Challenging conventional social stereotypes*: Challenging conventional or traditional design practices in the spatial design studio, by refocusing on a human-centred approach.
- 3) *Discoveries about social behaviour*: New ways of thinking relate to point two above, where perspectives and ways of design engagement could be transformed.
- 4) *Generalising to a broader set of situations*: The exploration of the idea of a plug-in workshop in various contexts, programmes and typologies, to determine the value across a wider audience and participatory sample. The research however does not attempt to generalise, but to acknowledge the influence of contextual meaning. In this light, replication of methods and duration of workshops are all in an attempt to upset the current status quo in order to ask questions and find deeper understandings of social and living scenarios.
- 5) *Concluding by taking action*: The provocation remains; however, the study excludes the creation of an implementation plan. Future actions are dependent on the attitude and values of like-minded academics, researchers, practitioners and students, continuing the discourse and provocation.

Chapter summary

Chapter 5 described how intuitive data collection and analysis processes were grounded in methodological literature for reliability and credibility of the findings. This contextualised the methodology of the study and described the data analysis in relation to the plug-in workshop's purpose and intent. The various phases of qualitative data analysis provide the basis for Section A (Detailed biopics) in *Chapter 6_Biopic investigations* to follow, as the analysis relies heavily on narrative accounts by participating students. The thematic patterns identified earlier, guide and extend the discussion into the relational biopic-integrated comparison as Section B.