Dissertation MADA October '23

awareness-based design:

the role of making aware for a transformative learning practice

Ricardo Dutra Gonçalves
Exegisis for Doctoral Degree (Ph.D.)
Art, Design and Architecture

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Ricardo Dutra Gonçalves
25 September 2023

Abstract

In order to prepare educators and young people to address complex issues of the present and emerging future, we must go beyond teacher-centered forms of learning that emphasize the transmission of knowledge. If we only learn to look outwards, we will continue to generate the same problems. To shift beliefs, values and behaviors, we need to design learning experiences that transform our inner dimension—that is, our ways of thinking, feeling, relating, acting and co-creating the worlds we wish to be a part of (Henriksson et al., 2020; Palmer, 2007; Varela & Scharmer, 2000). With a view to promoting transformative learning, we must start with becoming aware of ourselves (in relationship with others) (Depraz, Varela & Vermersch, 2003; Mezirow, 1991; Prochaska & DiClemente, 2005; Rinaldi, 2009). How do we design awareness-based approaches that scaffold and facilitate an awareness of our thoughts, feelings and actions?

Multiple fields of knowledge including education, social sciences and psychology have investigated transformative learning (TL) (Freire, 1970; Kegan & Lahey, 2009; Mezirow, 1991; Siegel, 2010; Vermunt, 2003). This PhD explores and advocates for the unique contribution design research can add to the field of TL. With a focus on making TL visible, design methods offer ways into making thoughts, emotions, felt senses and sensations visible—so that we can become aware of what they are communicating (Grocott, 2022). This awareness is what then allows us to make sense in ways that permit new insight and action to take place (Senge, Scharmer, Jaworski & Flowers, 2005).

This PhD asks: **How to make intangible experiences visible during the process of TL?** Through practice-based design research, the methods and sites of inquiry bring design to embodied awareness and embodied awareness to design (Hayashi, 2021). The PhD develops open-ended awareness-based design prompts to support educators and learners to become aware of non-verbal, embodied and relational experiences within a social field (Böll & Senge, 2020; Scharmer & Kaeufer, 2015).

The awareness-based prompts are non-intrusive sensitizing tools that include a combination of embodied learning activities with reflective tangible or visible forms (i.e. photograph, video, drawing, images and/or writing). The primary function of the prompts is to help educators and learners to surface tacit experiences which are then momentarily frozen in a visual, tangible or embodied form. This way, making the intangible tangible affords an act of distancing—that is, by externalizing thoughts, emotions, felt senses and sensations, the intangible is made accessible and manipulable.

The design prompts are introduced and facilitated in two sites of inquiry: an in-person workshop with K12 teachers in Mumbai (India) and an online workshop with higher education students from Temuco (Chile). Complementing the design practice are qualitative interviews that help to sense-make how

making the intangible visible is interconnected with making space for, making oneself aware of, and making sense of the intangible. This PhD reveals that the prompts help make transformative shifts visible for workshop participants and transformative learning visible for the educator. By giving form to new questions, frames of thinking and ways of making sense; awareness-based design offers unexpected ways to give form to otherwise intangible, inner experiences. This visibility in return allows participants to find meaning in relationship with one another.

This research practice proposes Awareness-based Design (ABD) as a method-pedagogy and living curriculum (Greene, 1978) which includes a set of literacies, comprehensions and sensibilities (Rinaldi, 2009) towards becoming aware and making sense of non-verbal, embodied and relational experiences. Considering the practice-based orientation of this PhD, ABD is brought back into practice in order to surface what about this approach might be useful in vastly different contexts. The PhD concludes with sharing fieldnotes, first-person accounts and insights from bringing ABD into three commissioned project contexts: a social learning lab at a university in Sorocaba (Brazil), a design research project in Melbourne (Australia), and a high-school in São Paulo (Brazil).

Keywords
Transformative Learning (TL), Embodied Awareness, Awareness-based Design, Design Prompts.

Acknowledgements

I acknowledge the role that mentors and dear friends have played in both my formation as a whole person, as well as their impact on my practice.

I thank Sonali Ojha for helping me see in myself the inner qualities I possessed when I had not seen them—and for helping me step into my highest future possibilities in every conversation we had. Sonali saw a 'future me' in my younger self. I thank her for always speaking to who I was becoming and never judging who I was.

I thank Arawana Hayashi for inspiring me with her bravery, brightness and innovative mind. For showing me how to recognize the wisdom of my body and appreciate the aesthetics of ordinary everyday life experiences. I am inspired by how Arawana created a unique body of work and for how she continues to be ahead of our times.

I am thankful to Marina Seghetti and Susan George—my dear collaborators in Italy. I appreciate your generosity and vision in helping give birth to a final PhD exhibition during the height of an Italian summer (Monash Prato). Thank you Susan for reading through this dissertation and helping me see beyond what I had written.

Finally I thank Lisa Grocott for constantly pushing me outside the boundaries of my own thinking—and helping me see how I think, therefore helping me shed and grow. I also thank Lisa for the steady willingness to bring our PhD cohort together (WonderLab) and for all she has done to make it possible.

Fig.1: "Making Thoughts Visible", an exercise by Aurora Montecucco during the final PhD exhibition at Monash Prato, Italy (July, 2023).

Preface: A Call to Action

What are my motivations for writing a PhD like this? Why have I begun to care for the invisible, unnamed parts of lived experiences? In this preface, I step back and share three personal motivations that inspired me to pursue a social and embodied design practice oriented to deep and transformative learning. By introducing these stories and inspirations, I do not wish to define a gap in literature or to justify why this research is important. Instead, it is a way of positioning myself in this research and being clear about what brought me here. To arrive at this set of motivations, I would like to take you first to a formative period of my life: my youth.

When I was 18-years-old, I joined an international volunteer-based organization (AIESEC)[1] in Vitória, Brazil. AIESEC was founded after the Second World War and has been run by young people (16-30 years-old). I remember being very inspired by our shared vision, mission, and values. The post-war reconstruction was the very call for youth to gather and imagine what else was possible. The idea that every young person could be an agent of change was life-defining for me. The global community striving for diversity made me feel I belonged. Our creative force while generating ideas and projects was a palpable experience of enjoying collective participation. I remember we used to run sessions and offer each other feedback on whether and how we were living up to the values we aspired to. Many of the young people I met at AIESEC (20 years ago) are some of my best life companions to this day.

When new members joined AIESEC, we ran a session entitled The Calling. As cheesy as this title might sound, yet it holds an authentic essence in meaning. Here, of course, I do not veer towards any purpose-driven slogan. Which I find to be quite capitalistic in nature. However, when I first attended this session something clicked for me. It was the realization that: yes (!), our times, contexts, situations are constantly speaking back to us—calling us to act[2].

This notion of a call to action has an embedded urgency in it. But how to act? How to respond? And when is non-action the best response?[3] I recognize that sometimes skillful non-action can be the most appropriate—that is, to simply let things be as they are[4]. Other times,

1 AIESEC is "is a community of young people, passionately driven by one cause: peace and fulfillment of humankind's potential" (https://aiesec.org/about-us).

2 As I read the news I am often impacted by the reporting on conflicts among different countries, imminent threats to our environment, mental health crises, etc. In light of these difficult situations, I wonder: what is an individual's role? How to reconcile the enormous scale and complexity of these issues and the sense of being a powerless, single person?

3 In the places I go, I often come across discussions on non-action. I wonder if the increased interest in non-action could be a response to what Han (2015) refers to as a "burnout society." For instance, in *Rest is Resistance*, Hersey (2022) connects the act of resting as a practice of resistance. She considers the body as a site of liberation which does not belong to capitalism.

4 Non-action must be 'skillful non-action'—that is, the skill of staying with our situations (however difficult, complex or painful they could be) and let the situation itself guide its own unfolding. This

"I call on all young people, from all over the world (...), you are my hope for humanity (...). You can play a part in promoting democratic values and basic freedom (...). It is up to you to write the next chapter of history (...). When you change as an individual, you change the world (...). Every action, every word and every thought has a global resonance (...). The revolution (...) is a million quiet revolutions."

— The Dalai Lama, A Call for Revolution

things cannot wait: we must act. For instance, when an earthquake strikes a region, we are called to care beyond our divisions, battles and disagreements. Or when injustice is present and we cannot bear the weight of social inequality, we are called to acknowledge the suffering that is caused by the many systems of oppression (Dunbar-Ortiz, 2021; hooks, 2018; Souza, 2019).

This PhD sits in the space of transformative education (Ackermann, 2004; Dewey, 2015; Dirkx, Mezirow, & Cranton, 2006; Freire & Macedo, 1970; hooks, 1994). By that I mean, the deep and transformative learning that shifts ways of being, thinking, relating, creating, and acting (Henriksson et al, 2020)[5]. I believe how we are is at the root of what we collectively can make. Therefore it is important that we cultivate (both at the individual and collective levels) the inner capacities that will help us respond to the urgent matters of our time. This PhD is a response to three calls: **a call for care, a call for belonging, and a call for hope.**

notion is very present in Buddhist studies and is centered around the idea that wisdom is inherent to a situation (Hayashi, 2021; Kabat-Zinn, 1994; Suzuki, 2011; Trungpa, 1996). In this sense, non-action does not mean to drop a difficult situation and move away (e.g. taking a vacation from our problems) but learning to lean into a situation without an immediate grasp to solve it.

5 The Inner development Goals (https://www.innerdevelopmentgoals.org/) list five dimensions (being, thinking, relating, creating, and acting) and twenty-three skills (e.g. authenticity, self-awareness, presence, sense-making, visioning, connectedness, trust, courage, and creativity).

"There is such urgency in the multitude of crises we face, it can make it hard to remember that in fact it is urgency thinking (urgent constant unsustainable growth) that got us to this point, and that our potential success lies in doing deep, slow, intentional work."

—adrienne maree brown, 2017

It is important you notice that by introducing these calls, I do not wish to define a gap in literature for my PhD. That is, because care, belonging and hope are not themselves the subject of inquiry of this research. Instead, just like in the previous example at AIESEC—care, belonging and hope are, instead, a vision, a calling, a source of inspiration for my work.

A call for care

In 2021-22, I worked as a full-time high school teacher at a private school in São Paulo, Brazil. In our first (interdisciplinary) project with the 11th grade students, we worked with the future of wellbeing as the main theme. I asked students to generate *how might we* questions[6] and help one another frame and reframe their inquiries (Dorst, 2015). I was very surprised at how teenage mental health emerged as a leading topic. Over the course of the project, I observed students seeking ways of making sense of their own struggles. Stepping back, I can see how we often take for granted the toll of overwhelming news every day—from the constant news on war, climate change, violence. How to listen to this news? How to respond to these crises?

The suffering of the world affects all of us. However, when you are a young person in the vulnerable process of creating an identity and finding your path, it is understandable that complexity can have an even stronger negative effect on mental health. There is not only the (so-called) 'outside world' pressure, I also noticed students dealing with incredible

6 https://www.designkit.org/methods/3.

pressure inside the school and, at times, from their own families. This pressure was accompanied with speed—that is, the non-stop need to continue to grow, to prove oneself, to succeed, to achieve.

In one class, I shared that we would look at wellbeing through the lens of designing for care. After a group discussion, a student said she realized that to care for others, one must care for oneself. Caring for oneself and others is interdependent because, as The Dalai Lama (2017) expresses it, "you are a part of the world as much as the world is a part of you." Difficult times call for practices of care (Mattelmäki, Mazé, Miettinen, & Chun, 2019; Vaughan, 2018). Caring for oneself and others means cultivating inner capacities that are healthy and wholesome. To care can take on many facets. For example, it can show up as self-respect, as a sense of appreciation, as kindness, and/or as collaboration (Henriksson et al). Acting from a place of care is, therefore, of primary importance for any real, lasting transformation.

A call for belonging

Belonging is a "feeling of security and support when there is a sense of acceptance and inclusion" (Cornell University Diversity and Inclusion, 2023). In educational settings, belonging is often described as "a student's feelings of being accepted, respected, and valued" (Allen et al., 2022; Goodenow & Grady, 1993). Allen et al (2022) writes that "the desire to belong is a deeply rooted human motivation that (...) permeates our thoughts, feelings, and behaviors." Belonging for all students is "a fundamental human right" (Allen et al., 2022; Gray et al., 2018).

A broad spectrum of research indicates many benefits of belonging. For instance, "Parr et al. (2020) identified belonging as the largest known correlate with symptoms of depression, accounting for nearly 50% of its variance" (Allen et al., 2022). Belonging has been associated with an improvement of "mental health and emotional well-being, academic success, self-belief, social inclusion, lowered school dropouts, decreased feeling of alienation"—and even as a "significant predictor of future employment" (Allen et al., 2022).

The topic of belonging (which I encountered in my professional practice) is also connected with social justice. As a social and learning designer, I have been involved in projects that envisioned so-called 'social innovations'. An innovation was, however, often understood as top-down ideas from a creative group of people, or from a solo entrepreneur. If we are to move from "imposing our ideas on others toward co-creating based on collective wisdom and creativity," we need to make space for the voices of those at the margins of our social systems (Hayashi & Gonçalves, 2023). In facilitating embodied activities, I have lost count of the times when the movement of a marginalized person towards the center of a group completely changed the group dynamics in terms of how it felt like to be a part of that group (i.e. the felt

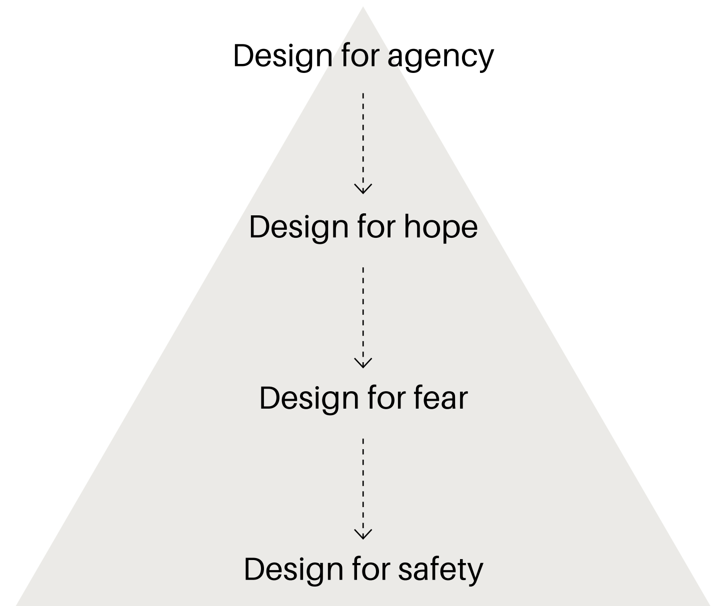

Fig.2: design for agency as design for hope, fear and safety (Ojha , 2006).

experience) and where the group went next (i.e. the collective choices and shifts in action).

In my own life experience, the times I felt I belonged were the ones when I succeeded most. By success, I do not mean that situations turned out the way I expected. Instead, I mean I learned the most and felt the happiest. Those were the times I felt safe and hopeful. A friend and mentor, Sonali Ojha, used to say that designing for safety is fundamental for the success of any learning space (Ojha, 2006; Grocott, 2022). Sonali argued that designing for safety is at the root of the development of agency. To design for agency requires that we design for hope. To design for hope requires us to take fear into consideration. And to design for fear requires designing for feeling safe.

A call for hope

A friend and mentor, Arawana Hayashi, often says that if we don't believe things can improve and that our actions can lead to healthier conditions for us and others—then, why even bother beginning? Arriving at hope is an important standpoint in a person's life because hope is what enables agency (Ojha, 2006). Our hopes can carry genuine intentions and dreams for what's collectively possible (Gonçalves & Ojha, 2016). Once I asked the Buddhist teacher Mingyur Rinpoche what happens when we die (which can arguably be a human being's most hopeless moment[7]). Rinpoche said

7 By hopeless, I mean the moment when one is called to let go of everything: one's relationships, possessions, dreams, identity, and even one's struggles and difficulties.

"This experience of dramatic immersion in darkness and reentry into light has evoked the straitened passage of struggle before solution, despair preceding hope and the birth canal to life and after-life."

— The Book of Symbols, Ronnberg & Martin (2010).

that dying is like crossing a dark night. This metaphor stayed with me and taught me that even in our hardest times, crossing the dark is a passing condition.

In this PhD, I am particularly interested in how surfacing our subjective, embodied, felt experiences (which are by nature intangible and often unconscious) can start us on a path of care, belonging and hope. The premise (which is further explored in ACT I) is twofold: first, it is based on the idea that becoming aware of something which is unconscious is the first step on a journey of sustained personal and collective transformation (Prochaska & DiClemente, 2005). Second, that making these invisible aspects of our being visible is something design can help with.

My intention is to offer a small (yet meaningful) contribution to how we understand our journeys as individuals and groups towards societal transformation. In my own practice of embodied design, I learned that our subjective, embodied, relational and creative lives are the real battlefields—the places where we learn to care, to belong, and to hope.

Fig.3: The light at the end of a tunnel (image by Ronnberg & Martin, 2010).

List of Publications

Hayashi, A., & Gonçalves, R. D. (2023). Awareness-based collective creativity: A studio-based practice for future-making. In Donelly, G., & Montuori, A. (eds.), *Routledge Handbook for Creative Futures* (1st edition, pp. 325-335). Routledge.

Diatta, M. D., Gonçalves, R. D., & Grocott, L. H. (2022). A family of sensibilities: Toward a relational design practice grounded in materiality and embodiment. *Design & Culture, 14* (2), 205-229, DOI: 10.1080/17547075.2021.2018539.

Gonçalves, R. D., & Hayashi, A. (2021). A pattern language for social field shifts: Cultivating embodied and perceptual capacities of social groups through aesthetics, and social field archetypes. *Journal of Awareness-Based Systems Change, 1*(1), 35-57. https://doi.org/10.47061/jabsc.v1i1.478.

Gonçalves, R. D., & Hayashi, A. (2019). *Aesthetic Language Cards: A pattern language for making visible deeper structures of social fields*. PI Press.

Exhibition

The exhibition component of this PhD is a showcase of the practice and core insights drawn from the research.

Over the months of June and July 2023, I hosted open workshops at Monash Prato (Italy) as a way of showcasing the PhD findings to local artists, educators and designers.The exhibition was entitled *Making Aware Residency*. Over the course of the two months, I invited a group of ten photographers as permanent residents. Other participants joined on a case-by-case basis. The residents were asked to engage with the central question of the PhD (i.e. *How to make the intangible visible?*)—and produce visible/tangible artifacts in response. This way, my intention was to bring the PhD findings as a provocation out into the world; and allow people to engage with it and create something new in response.

The residency is featured as part of a final online PhD showcase: https://makingaware.cargo.site/.

The *Making Aware Residency* was co-created in collaboration with Monash Prato, ParamitaLab and Fondazione Studio Marangoni—with the support of Comune di Prato and Comune di Firenze.

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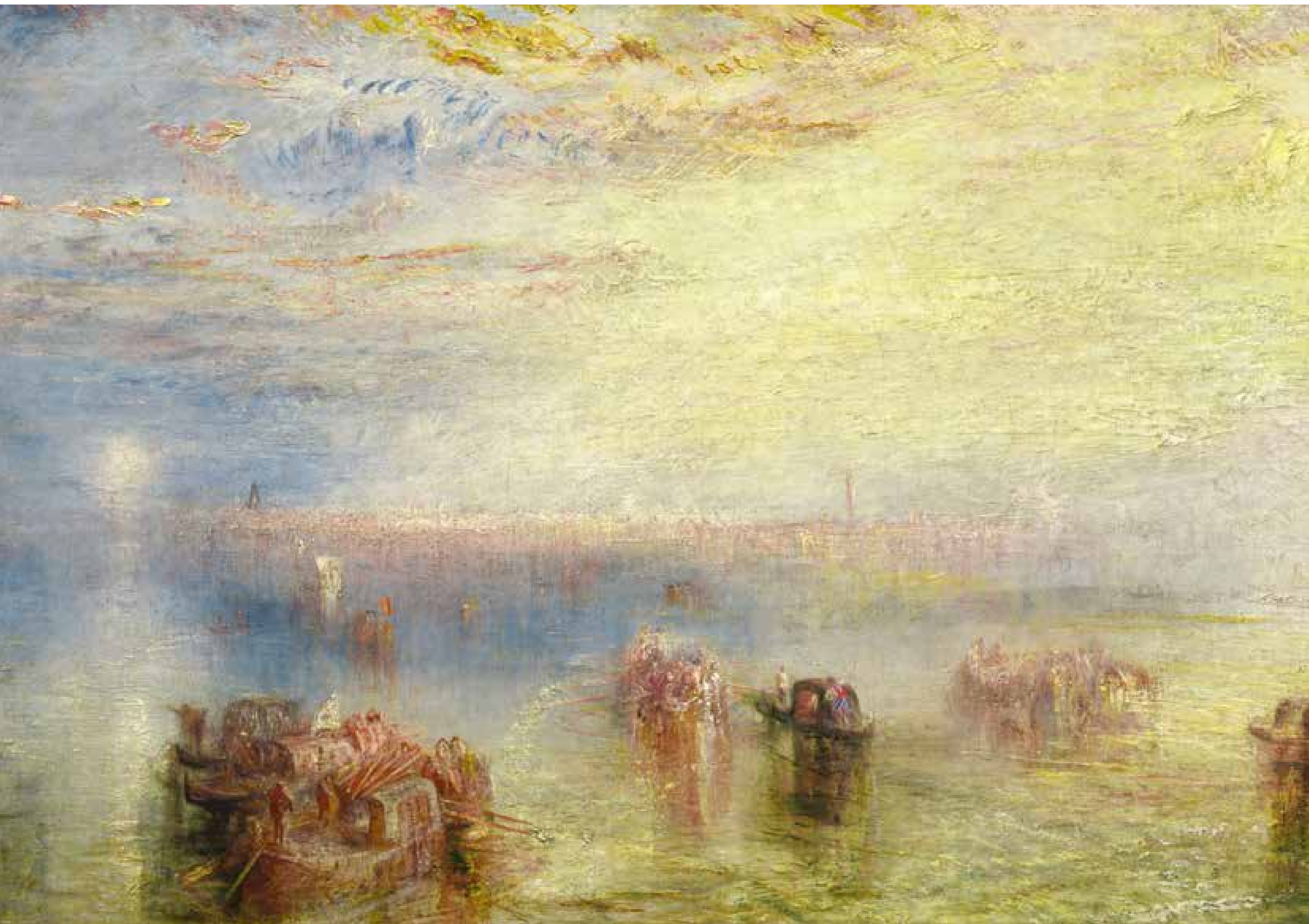

Fig.4: Approach to Venice, Joseph Mallord William Turner (1775-1851).

On becoming aware

In *Looking at Mindfulness*, Christophe André (2011) uses a painting by William Turner (1775-1851) to metaphorically illustrate that we can learn to see a feeling gently emerge. The painting is called *Approach to Venice*, and the author writes: “it’s like a promise quietly emerging on the horizon, a marvel taking shape before our eyes (...). The city gradually rising out of nowhere is Venice. Soon we will be there. Soon we will step on its fragile ground; we will explore it all” (André, 2011, p. 222). This notion of gentle emergence is at the core of this PhD. This research is ultimately an exploration of how one becomes aware of something which is yet blurred, unclear and taking form.

By exploring this line of inquiry, I believe that gentle emergence (André, 2011) can be linked with Varela’s explorations on *becoming aware* (Depraz, Varela, & Vermersch, 2003)[8]—that is, the deep and reflective process of awareness that includes, for instance, our thoughts, emotions, and bodily sensations. In the context of learning, I argue that becoming aware is also an essential part of transformative learning (TL)[9]—that is, the learning that shifts our ways of thinking, feeling, relating, acting and co-creating (Freire, 1970; Henriksson et al., 2020; Mezirow, 1991). Therefore, how do we design awareness-based approaches that scaffold and facilitate an awareness of the inner dimensions of our experiences?

Researchers across the fields of psychology, neuroscience, phenomenology, education, social systems change have extensively dealt with matters of personal and collective transformation[10]. This PhD argues that design is a discipline that can bring a unique contribution to this interdisciplinary field—in other words, to ground transformational processes in tangible, visible forms. If we make intangible experiences visible, we will become more aware and make sense of them in ways that permit deeper learning to take place (Ackermann, 2007; Malaguzzi & Cagliari, 2016; Rinaldi, 2009).

Research question, methodology and contribution

To become aware and make sense of the intangible, we must attend to, and stay with non-verbal and pre-reflexive experiences. In the scope of designing for transformative learning, this PhD’s main question is: *How to make intangible experiences visible during the*

8 According to Depraz, Varela, & Vermersch (2003), becoming aware encompasses an exploration of lived experiences, an acknowledgment of the body’s role in consciousness, and an understanding of how experience evolves over time.

9 In the transtheoretical model of behavior change, Prochaska & DiClemente (2005) says that becoming aware of our experience is, in reality, a move from precontemplation (i.e. unaware) to contemplation (i.e. aware).

10 Ackermann, 2004; Bollas, 2009; Davidson & Begley, 2012; Dewey, 2015; Dirkx, Mezirow, & Cranton, 2006; Husserl, 1970; Kagan & Lahey, 2009; Senge, 1990; Petitmengin, Remillieux & Valenzuela-Moguillansky, 2018; Polanyi, 1967; Prochaska & DiClemente, 2005; Scharmer, 2007; Varela, Thompson & Rosch, 1991.

process of TL?[11] By intangible, I refer to that which is unable to be grasped or seen because it does not have a physical or visible presence. This PhD emphasizes four kinds of intangible experiences: thoughts, emotions, felt senses and sensations. The research works with these experiences through a relational frame—that is, considering the self as a relational being, who is always embedded in contexts and interdependent with others (Hayashi, 2021; Mitchell, 2022; Pomeroy & Herrmann, 2023). The supporting research questions include:

(I) How to make the intangible experiences that occur during TL visible? And what intangible experiences are made visible?

(II) How does making intangible experiences visible support transformation of individuals and groups?

(III) What are the implications of bringing embodied awareness to design within different contexts of practice (i.e. research, teaching and consulting)?

In regards to situating the research, I am interested in project-grounded (Findeli, 1999), performative (Haseman, 2006) and reflective (Schön, 1983) practitioner-led models for researching practice through design (Frayling, 1993). This way, I situate this PhD within practice-based design research (Buchanan, 2011; Cross, 2006; Sanders, 2006; Schön, 1983), rooted in an ontology of becoming and in constructivist and pragmatic epistemologies (Gray, 2014).

The methodology, then, combines practice-based design research with phenomenological research and reflexive first-person writing. The methods include: awareness-based design prompts; experimental workshops, qualitative surveys; micro-phenomenological interviews, and practice narratives. The research practice seeks to: (a) design methods for making intangible experiences visible (i.e. awareness-based prompts); (b) reveal *what* is made visible and *how* it is made visible; (c) consider how making intangible experiences visible supports transformation of individuals and groups; and (d) examine the implications of bringing embodied awareness to design in different contexts of practice (i.e. research, teaching and consulting).

Ultimately, the PhD's main practice-based contribution is a method-pedagogy (Bruner, 1960) called Awareness-based Design (ABD)—that is, a pedagogical approach aspiring to become a living curriculum which includes a set of literacies, comprehensions and sensibilities towards becoming aware and making sense of the intangible.

11 I mean the deep learning that shifts that which is at the roots of our behaviors—that is, our thoughts, beliefs, values, emotions, felt senses and sensations (Dirkx, Mezirow & Cranton, 2006).

Declaring my positionality

Considering the practice orientation of this PhD, it is important that I acknowledge my own positionality first—that is, my professional, personal and social contexts. By being transparent and reflexive, I ask you to take my background, lived experiences, identities, biases and perspectives into account when reading this dissertation.

I am a global citizen. As an adult, I lived in Brazil, India, Malaysia, Nepal and the United States[12]—and worked in other places like Australia, China, Denmark, Italy, Germany, Mexico and Norway. This way, I sustain a global practice—and truly see myself, as some might call it, a global citizen. I recognize that although I feel like a citizen of this world, I often do not benefit from the same privileges of designers, researchers and creative practitioners in the Global North.

I am Brazilian. I was raised in a low-income family in the suburbs of a middle-sized Brazilian city. My mother was a seamstress working from home and my father was a driver without formal education. I was born in 1985, the same year the Brazilian military dictatorship ended[13]. I remember the political and economical instability associated with growing up in a nascent democracy[14]. In my family, I was also a first-generation college student. Through this PhD, I am inspired by the vision of working from and giving birth to new onto-epistemologies of the South (Freire, 1970; Santos, 2019).

I am gay. Growing up gay in the 80's and 90's in Brazil meant enduring harsh bullying and bearing silence around sexuality. Looking back, I can see how, as a gay man, I did not find resonance and emotional support within a politically and economically unstable society. Therefore, my inner impulse was to move out, to grow, to expand, to escape. This way, the PhD results from seeking survival and freedom. Among other factors, the research comes out of an inner endurance, of not being afraid to step out, and of continuing on going.

I am Buddhist. While living in India and Nepal (2009-2014), I had the opportunity of spending time in Buddhist monasteries and taking Buddhist vows. In my research, being Buddhist implies certain views and beliefs which affect my onto-epistemological approach. For instance, I believe in impermanence (i.e. everything is constantly changing, unfolding and becoming) and interdependence (i.e. everything is interrelated). From Buddhism, I also learned to question how

12 Altogether, these international experiences account for 10 years of my life.

13 The military dictatorship in Brazil ended, and democracy was declared on March 15, 1985. If you haven't, I strongly suggest you watch the documentary *The Edge of Democracy* (Netflix).

14 Along the course of my first 10 years of life, due to hyperinflation, Brazil changed currency four times. I have vivid memories of walking down the street with lots of bank notes to buy a single snack.

things appear to be, to seek deeper meanings behind lived experiences and to cultivate awareness-based practices.

I am an engineer. Although I did not work professionally as an engineer, I carry aspects of an engineering mind which I appreciate—that is, the different ways of finding, structuring, and organizing patterns. This is why, throughout the PhD, sometimes I default to quantifying the unquantifiable. I promise, though, that I will try to hold back on putting a figure on the intangible. I have come a long way from my early engineering studies—and yet, I am surprised at how deep-seated the scientific habits of quantifying and pinning things down are.

I am a designer. Today, I often refer to myself as a social designer. My work is at the intersection of social design, embodied awareness, artistic research, social arts, education and societal transformation. By work, I refer to a combination of research, teaching and applied projects. As a designer, I believe my research values practice, transdisciplinarity, reflexivity, relationality and emergence. I am particularly interested in designing intangible outcomes (bridging the tangible and intangible)—for example, learning experiences, processes, approaches, tools, engagement models, protocols and languages. I contextualize my practice within the scope of contributing towards sustainable societal transitions, the promotion of social justice, well-being and life-long learning.

Exegesis structure

This PhD is divided in three parts, following the Japanese aesthetic principle of *Jo-Ha-Kyu*[15] (Fujita, 2014; Hayashi, 2021)—that is, *Jo* as the orderly beginning (represented by ACT I), *Ha* as the breaking or shattering middle (represented by ACT II), and *Kyu* as the rapid closure (represented by ACT III).

In ACT I (*Jo: Bringing Design to Embodied Awareness*), I draw on my practice prior to the PhD to clarify its essential aspects and formative moments[16]. By presenting practice-based insights in dialogue with scholars, researchers, and practitioners, I attempt to transform previous learnings into four theoretical pillars forming the foundation of the PhD. In closing, ACT I arrives at questions that emerged from my practice—and which I bring into the PhD.

In ACT II (*Ha: Bringing Embodied Awareness to Design*), I introduce Awareness-based Design (ABD) as a method-pedagogy for working with the inner dimension of individuals in relational contexts. ABD is, then, applied in two sites of inquiry: Workshop A (Mumbai, India) and

15 *Jo-Ha-Kyu* is an aesthetic concept applied to Japanese arts—especially present in Japanese theater.

16 These insights come from my work with educators, adult learners, designers, artists, change-makers, and researchers—primarily as a Masters student at Parsons School of Design and an action researcher at the Presencing Institute (https://www.u-school.org/).

Workshop B (Temuco, Chile)[17]. In chapters 2 and 3, the findings and implications of both workshops are discussed.

In ACT III (*Kyu: Bringing Findings Back to Context*), I discuss the findings of ACT II and formulate Awareness-based Design as a method-pedagogy aspiring to become a living curriculum. The ABD's literacies, comprehensions and sensibilities are, then, brought into three applied contexts: as a learning designer/consultant for a social-emotional lab in Brazil, as a researcher for a university in Australia, and as a high-school teacher in Brazil. Through practice narratives, I discuss entanglements, tensions and paradoxes emerging from bringing theory back to practice.

17 Workshop A includes a series of experiential workshops I co-facilitated (in-person) with my PhD colleague Sonali Ojha—in January 2020 (Mumbai, India). Workshop B refers to a weeklong online session I hosted for students from Universidad Católica de Temuco (Chile).

Fig.5: Prototyping an awareness-based prompt at the Social Presencing Theater Gathering in Nørre-Snede Denmark (2018).

awareness-based design

ACT I *(Jo)*

bringing design to embodied awareness

In the Japanese aesthetics and theater tradition of Jo-Ha-Kyu, ‘Jo’ is the first act—representing an orderly beginning and establishing the basic theme, mood and style of the performance (Fujita, 2014; Pfluger, 2019). In some theater forms, actors and musicians make offerings to Gods and ask for their blessings before the performance starts (Klein, 2008)[18]. In a similar way, I offer this chapter to all my mentors, teachers and scholars—for whom I have deep gratitude. Their ideas, models of thinking, ways of being, questions, and even difficulties have become part of my formation as a researcher and curious human being.

Being a creative practitioner, according to me, means to see every experience as a possibility for learning. Attending to what is to be learned is an important pillar of my design practice—alongside an acceptance of both success and failure[19]. Prior to the PhD, I worked and lived in India for many years. There, I met a lifetime friend, co-creator, mentor and PhD colleague, Sonali Ojha, who used to say that “ultimately, we understand there are no failures”.[20]

In this PhD, I have built my theoretical approaches from applied practice. That is, from successes and failures while working in situated projects around the world in the years leading up to the PhD. By writing ACT I (*Bringing Design to Embodied Awareness*), I attempt to model practice-based research by drawing theory from my previous work—that is, from thinking through my own practice (Cross, 2011; Escobar, 2018; Fry, 2011; Ingold, 2013; Schön, 1983). This approach is both reflective (as I make sense of past lived experiences) and intuitive (as I use the past to sense into what comes next).

One of my learnings from working in diverse situated projects is that design interventions are never one-sided. When we bring something to a situation, we are, in return, affected by it—that is, by the context, results of our actions, meaningful conversations and experiences. The applied projects became learning opportunities for me when I reflected upon them and gained insights about who I was becoming and how I collaborated with others.

This way, I am inspired by Escobar’s emphasis on design research grounded in praxis—that is, in co-designing with communities, experimenting with new forms of practice, and

18 The Jo-Ha-Kyu is typically used as a structure for pacing a theater performance. However, in some Japanese art forms, some elements of the performance are meant to invoke Gods and deities. This way, the stage is considered a sacred space (Fujita, 2014; Klein, 2008; Pfluger, 2019).

19 In side conversations, Arawana Hayashi (former colleague and mentor) would often tell others: “for Ricardo, every opportunity is a learning opportunity.” In a similar way, I am inspired by brown’s (2017) call to release failure, realize that we are in iterative cycles and continue to ask how we learn from a given situation.

20 During mentoring conversations at Eat Around the Corner (Sonali’s favorite spot in Mumbai (India) for having inspiring conversations).

reflecting on the epistemological and ontological assumptions that underpin our ways of knowing and doing (Escobar, 2018). I agree with Escobar (2018) that theory should emerge from practice rather than be imposed from the outside. As a design researcher from the Global South, I believe we need alternative forms of knowing-being that are grounded in local knowledge and practices. Therefore, I agree that design researchers must challenge the dominance of epistemological and ontological assumptions of Western positivist and scientific methodologies—those that legitimize colonialism, marginalize other ways of knowing-being, and often deliver abstract, distanced, universalized knowledge[21] (Connell, 2007; Harding, 1991; Haraway, 1988; Smith, 1999).

In ACT I, I shall evoke and reflect on meaningful moments that happened before and alongside the PhD. These formative experiences are drawn from projects which are not themselves part of my research. However, I use their insights to draw out the four pillars which form the theoretical foundation of the PhD. These insights come from my work with educators, learners, designers, artists, change-makers, and researchers. In ACT I, I put these in dialogue with theory—that is, in conversation with scholars, researchers, and practitioners[22]. By bridging practice and theory in this way, I attempt to transform my previous practice insights into the theoretical principles that are, then, carried into this PhD.

Much of my practice prior to starting the PhD was guided by the intention of taking design outside of design[23]. Hence, the theoretical pillars introduced here are organized under the umbrella of bringing design to the fields of embodied awareness (Gendlin, 1978; Hayashi, 2021; Rome, 2014; Varela, Thompson & Rosch, 1991) and awareness-based systems change (Meadows, 2008; Scharmer, 2016; Scharmer & Kaeufer, 2015; Senge, 1990). Embodied awareness is a multidisciplinary field exploring how we can nurture well-being by cultivating awareness of our body-mind systems. Awareness-based systems change is an approach drawing on systems thinking, mindfulness and action research which argues that lasting collective change requires shifts in consciousness—and must begin

21 Escobar (2018) refers to creating knowledge from concrete experiences and practices of people within communities (particularly those that have been historically excluded) as post-development or pluriversal epistemologies.

22 I am inspired by Stacy Holman's (Professor at Monash University and PhD mentor) metaphor of literature review as a 'dinner table'. That is, the idea of imagining we host a dinner for some important guests—scholars, researchers and practitioners with whom we would like to be in dialogue. How many guests would we invite so the dinner feels energized enough, yet not crowded? What kinds of conversations would come out from that dinner?

23 I was influenced by a former Professor (Carlos Teixeira) at Parsons The New School for Design (2014-16)—who often told us about the importance of bringing design's voice to decision-making spaces outside of design.

with a deepening of awareness of one's thoughts, feelings and actions (Scharmer & Kaeufer, 2015).

In this regard, I was most influenced by two professional experiences: as a design student in the Master of Fine Arts in Transdisciplinary Design at Parsons School of Design (2014-16); and as a full-time action researcher at the Presencing Institute[24] (2016-21). The reflections that came from these periods reshaped my design practice—asking me to reconsider the kind of designer I was becoming.

This ACT is divided into four sections—each describing a theoretical pillar. Section 1 (*Materiality of Things*) and 2 (*Intangible Experiences*) expand two foundational theoretical perspectives. Section 3 (*Language and Experience*) and 4 (*Transforming Education*), instead raise questions about the implications of the practice. Together, these sections form the theoretical basis for this PhD, and will continue to inform ACT II and III.

1. The materiality of things

Before starting the PhD, I was working full-time at a job that asked me to travel frequently to various global locations. Over the years, the constant flying exhausted me. I recall a day when I was on a beach in Mexico. Sunny weather, transparent, turquoise sea—yet, I felt restless, afraid and unsettled. As I walked toward the water, my attention was drawn to my feet touching the wet sand. When I dived, I picked up a handful of sand at the bottom of the sea and squeezed it with my fingers. There was a pleasant felt sense about doing this multiple times—a sense of groundedness which I so much lacked at that moment.

At that moment of my life I longed for a physical place—a home. A place where I could arrange my things and feel a sense of order, continuity and grounding. Slowly I began setting up an apartment, which happened to be where I first left: my hometown. In this apartment, I placed some little rocks on the balcony. A wooden floor was made to contain the rocks. Whenever I walk to the balcony, I feel the contrast between the soft wood and the sharp little rocks and doing this would sometimes remind me of my experience in Mexico. The living room windows intentionally do not have curtains—so there's limited blockage to the sun and the wind. The sun, wind, rocks and wood are all natural elements that evoke nature. When others come to visit, they are always surprised when they discover the balcony floor covered with little rocks. They become curious about their depth, some are afraid to step on them, while others seem to be in awe.

The materiality of things is intertwined with the intangible aspects of our life. By things, I mean material objects or entities

24 The Presencing Institute is a global community working on "activating and supporting a global movement for planetary healing and civilization regeneration" (https://www.u-school.org).

Fig.6: balcony transition between wood and little rocks. Vitória, 2022.

that are part of our lived experiences and have some degree of agency, significance, resonance and/or vitality (brown, 2001; Bennett, 2010; Bollas, 2009; Miller, 1987). For example, some materials or objects can evoke something else (Bennett, 2010; Bollas, 2009; Brown, 2001; Latour, 2005; Stewart, 1993): bringing us memories (e.g. when I step on the rocks, it reminds me of the restless experience in Mexico) and prompting emotions (e.g. when others feel surprised by the balcony). This way, I wonder: What are the relationships between the tangible and the intangible? That is, how do materials evoke, prompt, initiate, surface, and/or sustain intangible experiences in us? Is it possible to materialize our intangible experiences in tangible, visible forms?

In design research, I first experienced the connection between the tangible and the intangible when I encountered the work of Mattelmäki (2006) on design probes. According to Gaver et al. (2004), probes are evocative tasks that elicit inspirational responses from people. This design research method had a level of subjectivity, open inquiry, an embracing of ambiguity and playfulness which drew me in[25].

25 Mattelmäki (2014) writes that encountering “new types of challenges” has led designers to look for “new approaches to design—approaches that were able to

I remember the first time I saw an evocative image of a few design probes—all symmetrically placed on a table: a disposable camera, an audio recorder, maps, a workbook, and postcards.

As a researcher who values subjectivity and uncertainty, I also enjoyed the fact that the probes did not offer comprehensive information, but fragmentary clues about people's lives and thoughts (Gaver et al, 2004). The probes asked me to suspend my conclusions and leave meaning-making to a later stage—leaning into surprise, curiosity, openness and playfulness.

Once I graduated and started working full-time as an action researcher at the Presencing Institute I was asked to research social systems change using an embodied awareness methodology called Social Presencing Theater (SPT) (Hayashi, 2021)[26]. Back then, I was the only designer at the institute and my core intention was to bring design to embodied awareness and awareness-based systems change. The embodied awareness work touched upon intangible aspects of personal and societal transformation. Hence, my initial hunch was that design probes (i.e. something physical and tangible) could potentially balance out the subjectivity inherent to it[27].

The literature revealed that probes could be of different kinds—such as cultural, communication, domestic, technology, and empathy (Gaver, 2004; Hutchinson et al., 2003; Mattelmäki, 2006, 2014). However, after a few months of prototyping, I learned the word probe was often challenged by embodiment practitioners[28]. A colleague (trained in theater and dance) told me the word probe evoked an intrusive idea—like when a doctor probes a patient with an instrument. I soon realized the community of practitioners was sensitive to any associations of intrusiveness. Since then, I have used the word prompt and have found it to be more suitable in spaces outside of design that I have worked in.

I use materiality as part of my methodology in two ways: 1) when I introduce Awareness-based Prompts in ACT II—which have a tangible and/or visible aspect, including images, sketches, videos, photographs, and the body itself. And 2) when I seek to expand the notion of making which has been extensively associated

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dive into more ambiguous topics, such as experiences, meaningful everyday practices and emotions" (p. 67). While Gaver et al. (2004) writes that probes value "uncertainty, play, exploration, and subjective interpretation" (p.53).

26 Hayashi (2021) defines SPT as "an individual and group practice rooted in embodiment, meditation, and systems thinking" that "engages the body's physical and spatial intelligence."

27 These intangible aspects of individual and/or societal transformation might include: shifts in awareness or consciousness; new ways of seeing; shifts in values, beliefs and/or attitudes; increased sense of interconnectedness; shifts in culture; new forms of collaboration and collective action; and so on (Scharmer, 2009).

28 This refers to practitioners of embodied awareness and systems change—coming from fields such as leadership development, systems thinking, theater and the arts.

in design and arts with making objects, functional products and/or other tangible and digital outputs (Dreyfuss, 2003; Loewy, 1979; Papanek, 1974; Pinther & Weigand, 2018; Rams, 1995).

2. Intangible experiences

Before addressing the question of how to make intangible experiences visible, I must clarify what I mean by *intangible* and by *experience*. In this PhD, I refer to intangible simply to indicate that something cannot be perceived by the senses (e.g. sight, hearing, taste, smell and touch). By experience, I refer to the wide range of sensory, emotional, felt, and cognitive responses—resulting from the active, dynamic and interconnected engagement with one another and the larger world (Dewey, 1938; Heidegger, 1962; Merleau-Ponty, 1945). This way, an experience can involve both tangible and intangible aspects. For instance, referencing the example above, to step on the rocks can be a tangible experience while recalling a meaningful memory is intangible.

The first time I encountered the notion of intangible experiences was during my Masters. My project group was asked to design a learning tool for K12 teachers from a private school in New York City (McEntee et al., 2016). The project was based on research saying that changing the architecture of a school is not enough to improve learning. Therefore, schools must also work on the set of beliefs, attitudes and assumptions teachers hold about teaching and learning (Bradbeer et al., 2019; O'Neill, Williams & McInerney, 2016)[29].

The idea of working with teachers' mindsets through a physical game interested me. Our design group started by clarifying eight to ten key growth mindsets (Dweck, 2012; Yeager, 2022). Those included, for example, what teachers thought about success or failure, and/or in what ways they considered effort as a path to mastery. At the end, we co-designed a game based on the metaphor of teachers traveling to an *Archipelago of Possibilities*, which represented their future. The game asked them to 'pack their luggage' (i.e. include a mindset they wished to carry and one to leave behind), 'make a travel plan' (i.e. choose growth mindset activities to do while traveling), and, finally, 'create a souvenir' (i.e. make an object to remind their commitment to a new mindset) (McEntee et al., 2016).

In this project, I considered the teachers' mindsets as intangible experiences because those could not be physically grasped or perceived by the senses. Meanwhile, the physical prompts of the game were tangible and visible. This way, co-designing *Archipelago of Possibilities* was a formative professional experience to me because it helped me understand that I could intentionally design to connect the tangible and the intangible—therefore, provoking

29 According to Dweck (2012), mindsets are sets of beliefs and assumptions that profoundly affect the way we live.

unexpected new associations, meanings, interpretations. For the first time I asked questions such as: How to make teachers aware of their mindsets? How to make space for fresher ways of thinking? How to help teachers make sense of their teaching so far—as well as going forward?

In this PhD, I focus on four types of intangible experiences: **thoughts, emotions, felt senses, and sensations.** Here, it is important to observe that the individual experience is inseparable from the experience of a larger group—that is, our experiences are inherently social because we are always interconnected with others (humans and non-humans) within larger social and cultural contexts (Dewey, 1938; Haraway, 2016; Ingold, 2011; Kimmerer, 2013; Shiva, 1991; Viveiros de Castro, 2014).

By thoughts, I mean the mental process of thinking—including, for example, our ideas, beliefs, assumptions, values, etc[30]. A mindset, for instance, is a thought. For example, the belief that problems must be urgently resolved or challenges should be avoided because they are risky. Thoughts can have a positive, negative or neutral influence (Hanh, 2008; Kabat-Zinn et al, 2015). Dweck (2012), for instance, refers to negative beliefs as fixed mindsets, and positive ones as growth. Repeating thoughts can create patterns of thinking that become ingrained in ourselves and in society—and therefore are difficult to change (Dewey, 1938; Foucault, 1977; James, 1890; Freire, 1970; Scharmer, 2009).

By emotions, I refer to emotional states[31]—i.e. what Davidson (2012) defines as “the smallest, most fleeting unit of emotion” (p. xiii). For example, the passing experience of anger, fear, disgust, enjoyment or sadness (David, 2016; Ekman, 2023; Taylor, 2008). I am inspired by how Smith (1999) argues that emotions are an essential part of community life and culture—and therefore, should be recognized as a legitimate form of evidence for research.

By felt senses, I mean the pre-reflective bodily experiences that are difficult to articulate in words. They often start as fuzzy and unclear experiences—which then can take form and change (Gendlin, 1978; Hayashi, 2021; Petitmengin, 2007; Rome, 2014). The felt senses carry a wealth of information about our experience of the world

30 Indigenous scholars argue that thoughts are not just the result of mental activity—but are rooted in people’s relationship with community, spirituality and the natural world. Therefore, they call upon the need for research approaches that respect and honor the interconnectedness of all aspects of life (Alfred, 2005; Little Bear, 2009; Smith, 1999; Wilson, 2008).

31 Davidson (2012) argues that emotional states usually last only a few seconds while emotions last longer. Emotional states can be triggered by an experience or arise from mental activity (e.g. daydreaming, introspection, or anticipation of the future). In all cases, these states tend to dissipate and transform. In this PhD, I choose not to emphasize emotions because of the vulnerable and therapeutic work that surfacing them would require. Therefore, I privilege emotional states for their fleeting and passing nature.

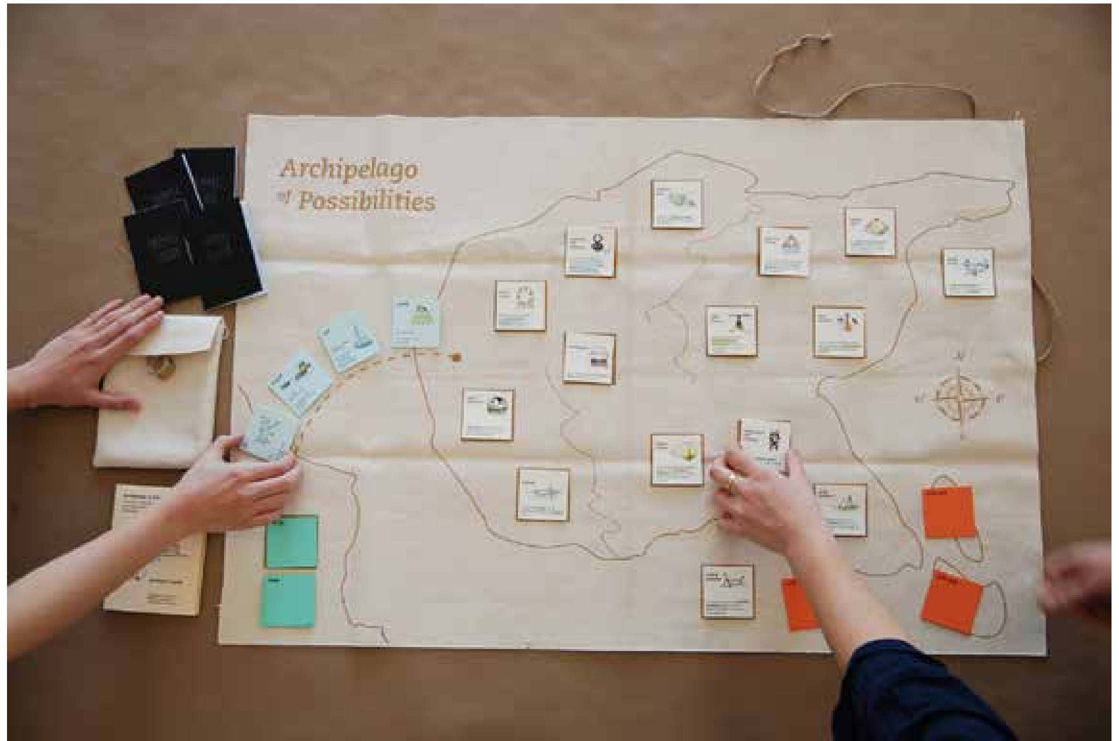


Fig.7: Archipelago of Possibilities, New York City (McEntee et al., 2016).

Fig.8: Souvenirs from the Archipelago of Possibilities, New York City (McEntee et al., 2016).

(Petitmengin, 2007). This way, they are an embodied way of knowing (Gendlin, 1978).

As compared to emotions, felt senses are different because they present more subtle and nuanced bodily experiences (Gendlin, 1978). For example, a tightness in the chest can be a felt sense while anxiety is an emotion. Or a feeling of expansiveness can be a felt sense while awe and wonder are emotions. Petitmengin (2007) argued that felt meanings are a more complex structure of felt senses—which emerge when we begin engaging with pre-reflective experiences and ascribing words to them. Therefore, by becoming aware of our felt senses, we transform our pre-reflective embodied experiences into conscious forms of embodied knowing.

By sensations, I refer to the initial, immediate and elementary units of consciousness resulting from perceiving the world with our body-mind senses (i.e. sight, taste, touch, hearing, and smell) (James, 1890). This way, sensations are where knowledge starts (Kant, 1781; Locke; 1960). As compared to felt senses, sensations are different because they indicate a direct and raw physical response to a sensorial experience. For example, a sense of unease while walking through a dark alley can be an example of felt sense. While, feeling the texture of a rough surface or the heat from the sun are examples of sensations.

Based on prior applied practice, I have observed five characteristics common to all these intangible experiences—those are: their (2.1) non-verbal, (2.2) embodied, (2.3) relational, (2.4) subjective, and (2.5) creative dimensions.

2.1 Non-verbal experiences

In writing the biography of the artist Robert Irwin, Lawrence Weschler (2008) named his book *Seeing is Forgetting the Name of the Thing One Sees*. The title describes well what it is to experience something beyond words. It is like looking at a painting in a museum: it feels a certain way. Intangible experiences are often non-verbal because they are tacit (i.e. known without being directly expressed) (Polanyi, 1967) and pre-reflective (i.e. present prior to reflection and sense-making) (Merleau-Ponty, 1945; Depraz, Varela & Vermersch, 2003).

In this PhD, I acknowledge that working with the field of the intangible means accepting that our lived experiences are always beyond words and cognitive descriptions (Hanh, 2017; Heidegger, 1962; Varela, Thompson, & Rosch, 1991). This research, therefore, is not an attempt to provide literal interpretations of the intangible, nor do I assume that people's experiences are entirely captured by the prompts. Inspired by the work of Varela, Thompson and Rosch (1991), I focus, instead, on developing methods situated at the birthplace of meaning which assist both the sensible (i.e. the sensory and perceptual aspects of experience) as well as the sense (i.e. the meaning and significance which are created through reflection and sense-making).

Fig.9: Big Bang Fountain, Olafur Eliasson, Tate Modern. London, 2019.

2.2 Embodied experiences

In 2019, during a visit to London I heard that the artist Olafur Eliasson was hosting a large exhibition at Tate Modern—which I considered impossible to miss. In one of the artworks, *Big Bang Fountain*, people entered a dark room. At some point, a flashing light hit a fountain—making a sculptural shape of the water visible. For a brief moment, the room came out from the darkness and we were in awe of the form the water took. As a viewer, I became not only aware of the fountain, but of my own embodied presence as well.

Embodied presence simply means being present in our bodies (Hayashi, 2021; Rome, 2014). We are embodied because we have a body-mind system (Varela, Thompson, & Rosch, 1991), and through our senses we experience the world[32]. The word *presence* refers to the quality of attention of being present with the moment-to-moment unfolding of things (Kabat-Zinn, 1994). Embodied presence, though, is not only a concept, it is an actual experience (Hayashi, 2021). Right now, you are reading this text. If you pause and attend to your body, you can notice a sense of embodied presence. I will end this paragraph so you can try.

Alongside attention, Vygostky (1978) said we are born with other mental functions including sensation, perception, memory, imagination,

32 Steiner (1920) spoke of twelve senses: ego, thought, speech, hearing, warmth, sight, taste, smell, touch, balance, movement, and life. He divided these according to those senses that are more outwardly directed (ego, thought, speech, hearing, warmth, sight, and taste) and those that form the interior quality of a person's being (touch, balance, movement, and life).

thinking and language. Before I discuss embodied presence further, I need to expand an understanding of sensation and perception—that is, our ability to perceive the world through the senses and our capacity to organize, make sense and interpret sensory information.

To perceive is to be near and yet far, or, as Merleau-Ponty (1945) argued, perception is our absolute proximity, and yet, irremediable distance to this world. Perception is where knowledge begins[33] (Abram, 1997; Dewey, 1938; Gibson, 1979)—that is, to perceive is to be present when beliefs, values, meanings, and actions are constituted (Merleau-Ponty, 1945; Varela, 1991). This way, perception is not truth itself, but rather, our very access to it (Merleau-Ponty, 1945).

If perception inaugurates knowledge (Merleau-Ponty, 1945), then I agree with Hayashi (2021) that the quality of our embodied presence affects how we make sense and meaning of the world. For instance, our embodied presence can be relaxed, open and spacious, or tight and closed-down. It can be focused and attentive, or scattered and lost (Hanh, 2008; Hayashi, 2021; Kabat-Zinn et al, 2015; Suzuki, 2011). The implication of this to transformative education is important because it means that the quality of our presence matters as it can yield very different experiences of sense-making[34].

In Western culture, our presence and attention are constantly disrupted and disputed by the media and what Odell (2019) refers to as the 'attention economy'. In *How to Do Nothing*, Odell (2019) argues that the attention economy has financial incentives to keep us hooked to social media—continuously producing and reacting in a state of anxiety. Therefore, if we are to cultivate a sense of embodied presence, we must reclaim our presence and attention[35]. We must cultivate embodied ways of knowing and being (Hayashi & Gonçalves, 2023)—which can, ultimately, help us meet the world with more openness, curiosity, and freshness (Freire & Macedo, 1970; Hayashi, 2021; Santos, 2019).

Western-centric approaches to research and education have emphasized rational cognitive ways of knowing. However, there is a lot of unexplored value in embodied knowing. By acknowledging how we might be cut off from our bodily life (Varela, 1991), we can learn to appreciate the value which lies in our simple presence (Hayashi, 2021; Rome, 2014). This way, embodied knowing can include, for example, how we attune, sense and lean into a present experience—instead of pre-defining it with fixed ideas and concepts (Gendlin, 1978).

33 According to Dewey (1938), "all learning begins with experience, and it is there that it finds its end" (p. 25).

34 Here I am referring to the notion of sense-making and/or meaning-making as a core pursuit of education (Dewey, 1938; Freire, 1970; Rinaldi, 2009).

35 "In a world of distraction," brown (2017) writes, "the heart is a front line and the fight is to feel" (p. 70).

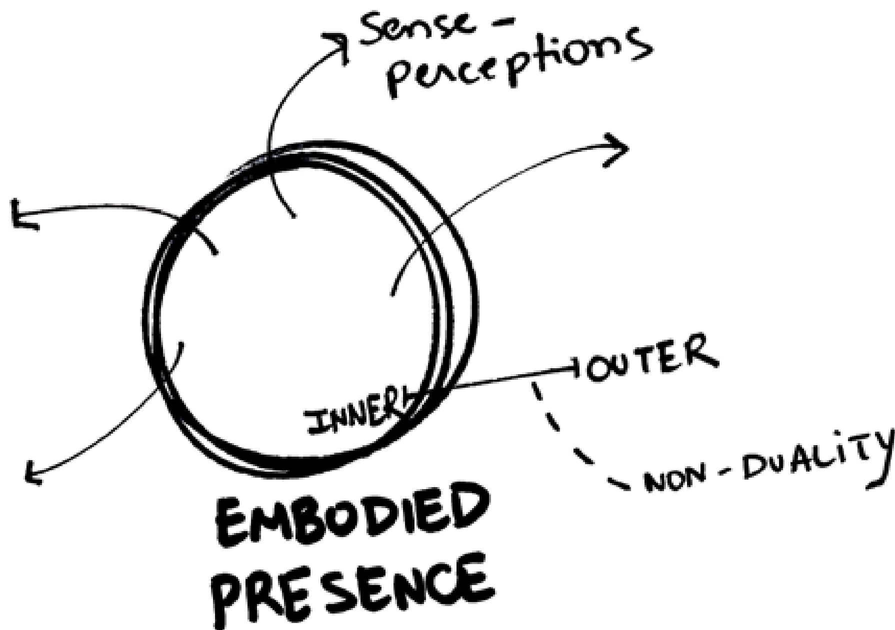


Fig.10: Embodied presence.

In this PhD, I am inspired to explore embodied knowing as a valid approach to practice-based research—and to question the privileges often given to cognitive, objectivist ways of knowing. Here I join forces with authors such as Santos (2019) to confront the premise that scientific knowledge is superior to other ways of knowing, including those that are more practice-based and/or intuitive. This PhD is, in that way, an acceptance of Santos' invitation to construct new habitats for thinking and acting and to consider knowledge as a profound experience of the senses (Santos, 2019)[36].

I recognize that in order to develop and offer embodied practices for others, I must be grounded in my own embodied experience first. Hence, I also develop and use embodied awareness approaches for working with myself—that is, with my own emotions, thoughts, felt senses and sensations. This way, I feel more prepared to bring embodied awareness methods for working with others.

36 Santos (2019) questions the current Western paradigm of knowledge production based on separating knowledge from experience—therefore, reducing experience to a set of measurable facts. Instead, he proposes more holistic, experiential forms of knowing that recognizes the subjectivity and relationality of the individual and the group. Some examples of these new *habitats for thinking* that Santos (2019) proposes includes: community-based forms of education, decolonizing the curriculum, embodied knowing, and participatory action research.

2.3 Relational experiences

An essential point of view for this PhD is that an individual is never alone because human experience is inherently social and embodied (Merleau-Ponty, 1945; Spurling, 1977). That is, we are always interdependent to others: humans and non-humans (Bennett, 2010; brown, 2017; Haraway, 2008; Santos, 2019). Different authors have explored the notion of interdependence. For instance, Merleau-Ponty (1945) has introduced the terms intercorporeality and embodied intersubjectivity, Hanh (2017) spoke of interbeing and Schutz (1951) used the term we-relationship.

The fundamental implication of taking relationality as a core premise is that we must work with ourselves while we work with others. That is, we are collective, social, relational bodies—and we transform both individually as well as collectively (brown, 2017)[37]. This way, relationality ultimately points at a dissolution of duality and the notion of separation (i.e. me vs. the other)—leading to what Gadamer (1989) referred to as a fusion of horizons. Therefore I work from the premise that the feeling of separation of oneself from others is a form of illusion[38] (Buber, 1970; Heidegger, 1962; Levinas, 1969; Nancy, 2000).

An immediate relational context can be, for instance, a social group like a team at work, our family, or even the people riding the metro alongside us. These are what Hayashi (2021) refers to as our social bodies. These social groups are not isolated entities but rather embedded within larger social systems[39] (Meadows; 2008; Scharmer, 2007; Senge, 1990). Social systems have an inner felt dimension, which is what Scharmer (2007) refers to as a social field[40]. Pomeroy and Herrmann (2023) define social field as “the water we swim in”—that is, “a social-psychological space that exists in between and through individuals and in which patterns of interpersonal and collective behavior are embedded” (p.2).

During the inaugural *Generative Social Fields Gathering* (2018)

37 “As we change societies, we must change from (...) individualism to community centeredness. We must ‘walk our talk.’ We must be the values that we say we are struggling for and we must be justice, be peace, be community” (brown, 2017, p. 141).

38 Bohm (1980) writes that fragmentation (i.e. division of subject-object, me-other) is an illusion which has led to the growing and urgent crises that we are confronting today (e.g. pollution, imbalance of relationship with nature, economic disorder, etc.). He argues that although integrity and wholeness is an absolute necessity, we have often lived in fragmentation.

39 Systems theory emerged with studies in computer engineering (Forester, 1968). In other fields, Meadows (2008) pioneered studies in the context of sustainability, while Senge (1990) explored learning organizations as social systems and Scharmer (2007) attended to the interior felt qualities of social systems (i.e. social field).

40 The word field can evoke a sense of ground, soil and/or open land. In that way, a social field is like a soil of human relationships. When the soil is cultivated “out of the nutrients of sunlight, water, and everything that dies”—it can be made fertile (brown, 2017, p. 74).

Fig.11: A social body—i.e. a physical grouping of people (Hayashi, 2021).

at the Garrison Institute, I had a conversation with MIT lecturer Peter Senge, who was one of the conveners. Senge told me that “the most personal is the most systemic” [private conversation][41]. This interconnected notion of individuals and social systems is present across various cultures. For example, when Santos (2019) calls for the affirmation of the epistemologies of the South, he often discusses the implications of otherness. Santos (2019) argues that we need, therefore, an expanded shared terrain of knowing and being which is based on relationality.

Coming from the Global South, it is important to recognize that systems theory has been influential in my work—however, it is not the only way of framing the interconnection of oneself and others. Systems theory has been primarily proposed by researchers from the Global North, initially drawing on technology and engineering as the basic framework of understanding interrelationships. However, I acknowledge that many cultures have a deep understanding of relationality embedded in their communal wisdom already.

41 In this PhD, I acknowledge the immense value of private conversations I had with many of the people that I cite. Therefore, I acknowledge the importance of these people in shaping my worldviews and design practice.

For instance, other examples of relational epistemologies include *ubuntu* (Nguni Bantu notion of *I am because you are*) and pachamama (revered goddess Mother Earth by the Indigenous people of the Andes) (brown, 2017; Santos, 2019). In Buddhist studies, Hanh (2017) expresses relationality as *interbeing*. He introduces the non-duality character of relationality by questioning separation and otherness—arguing that all phenomena co-arise interdependently and, hence, do not have separate identities. I think Hanh (2017) beautifully expresses the understanding of interbeing as the insight that will bring us to the other shore.

In the context of transformative learning, relationality shows up, for instance, through social learning—as learners construct knowledge from social experiences (Ackermann, 2004; Malinverni et al, 2016; Vygotsky & Kozulin, 1934). Rinaldi (2009) argues that to know is a relational process in a social context in which meaning is attributed in meeting one another and the world[42]. This way, based on the social constructivist context of the schools of Reggio-Emilia (Italy), Rinaldi (2009) explains that "the subject of the school is no longer the child, but the child in relationship" (p. 25).

42 In a similar way, brown (2017) describes coevolution as the idea that "we evolve in relationships of mutual transformation" (p. 122).

In this PhD, relationality forms the very fabric of my onto-epistemological perspective. The notion of relationality appears, for example, when I introduce awareness-based prompts for working with self *within* a social field; when I explore the inherent inter-relationship of individual and societal transformation; and/or when I work with groups to make visible the intangible felt qualities of a social field. Through this research, I am motivated to ask: How could non-dualistic notions of relationality inform design theory and practice? And how could design contribute to promoting non-duality?

2.4 Subjective experiences

If our experiences are inherently relational, how then might we position the subject in this research? According to my own professional applied practice, the primary reasons I call upon the role of subjectivity within a relational onto-epistemology are twofold: (1) to honor that as subject we have a point of view and access towards the world (i.e. our direct lived experiences); and (2) to propose a methodology which takes in consideration the subjective description of the lived world (Heidegger, 1962; Husserl, 2001; Merleau-Ponty, 1945; Schutz, 1967; Varela, Thompson & Rosch, 2016).

At the start of the PhD I attended a workshop on micro-phenomenology interviews (Petitmengin, 2023) at the Center for Healthy Minds (University Wisconsin-Madison). Micro-phenomenology interviews are a research method

to investigate subjective, first-person experiences—identifying underlying structures that give rise to thoughts, feelings and perceptions (Petitmengin, Remillieux & Valenzuela-Moguillansky, 2019).

At the beginning of the workshop, Claire Petitmengin (the facilitator and creator of the method) handed us a tiny piece of paper. The single words on the paper were *black bird*. In pairs, she asked us to share what our experience of reading these was like. She advised us to be precise and stick to the exact moment when we saw the words.

During the group reflection, some people said that as they read, the words showed up in their minds: B L A C K B I R D. Others said the words evoked the visual memory of a bird. However, they discovered their birds looked different in each person's mind. For example, a person saw a bird standing against an empty background, while another saw a bird in nature. I was surprised by the diversity of experiences people shared. I wondered, how could a simple moment of reading two words be so rich and full of subjectivity? This exercise made me understand that there is a dimension of our experiences which is subjective. Therefore, if we are to honor subjectivity within embodied ways of researching, then we must train in how to describe lived experiences (Depraz, Varela & Vermersch, 2003)[43].

Subjective experiences have an internal dynamic—that is, they are always unfolding and shifting (Bohm, 1980; Petitmengin, 2007; Rome, 2014). According to Petitmengin (2007) subjectivity can include both (conscious and/or unconscious) passive and active inner acts. The inner acts are tiny and subtle inner movements performed by our body-mind systems. The passive and involuntary inner acts, Petitmengin (2007) calls *micro-moves*. For example, an involuntary twitch of a facial expression accompanying a feeling of confusion or surprise. While the active inner acts towards becoming aware of our experience, she calls *interior gestures*. For instance, an active shift from attending solely to oneself to noticing others.

In this PhD, I specifically hope to make the interior gestures of subjectivity visible—through an adapted protocol of micro-phenomenological interviews (Petitmengin, 2007), which I refer to as *Moments of Experience*. In ACT II, I share the adapted version of the protocol as well as the data analysis from using it with groups in India and Chile. The analysis reveals how the workshop participants performed inner (often unconscious) gestures towards becoming aware of their thoughts, emotions, felt senses and sensations.

43 For Depraz, Varela & Vermersch (2003), everything perceived, theorized, believed, researched, and known is done so by an observer (referred to as first-person).

2.5 Creative experiences

Attuning to emergence

The previous sections explored the non-verbal, embodied, relational and subjective dimensions of lived experience. This section is dedicated to the creative dimension of intangible experiences. By creative, I mean that each experience is always giving rise to the next, that is, human experience is constantly unfolding in a state of becoming[44].

For example, an emotion like anger is not static: it unfolds and changes (David, 2016; Davidson & Begley, 2012l; Taylor, 2008)[45]. Our thoughts constantly shift like waves (Hanh, 2008). Although we can hold onto some beliefs and points of view, even those can change as we develop new ways of making sense of the world (Dweck, 2012; Kegan & Lahey, 2009). Our sensations and felt senses are constantly shifting as well (Rome, 2014). For example, in 2018, I suffered from acute neck and back pain. My physiotherapist recommended making a diary of how the pain shifted (Lhullier, 2022). The diary prompted me to become aware that even though these shifts were unnoticed, they existed. In that way, it made me hopeful that change was indeed constant (brown, 2017).

If our experiences are in a constant state of change (Butler, 2017), then attuning to emergence becomes a core transformational skill (brown, 2017; Davidson, 2011; Johnson, 2001; Ojha, 2006; Rinaldi, 2009; Scharmer, 2007). Emergence is a way of being that emphasizes the interconnectedness of all things—therefore, attuning to it means working with complexity and uncertainty by tapping into collective wisdom and creativity (brown, 2017)[46]. Scharmer (2009) refers to the skill of attuning to emergence as sensing, that is, the ability to attend to fresh knowing, bringing forth healthier conditions for an emerging future. Here, I do not mean the future as a fixed destination but rather as a constantly evolving process of becoming. By learning to attend to such a process of becoming, we can participate in it in creative and transformative ways (Bhabha, 1994).

If we hold ourselves to our lived shared experiences of the present moment, sensing emerges as an intuitive response from the very solicitation of what we encounter (Bhabha, 1994; Dewey, 1938; Mbembe,

44 The notion that life is a creative act contrasts with the conventional understanding that creativity is a special talent of a solo artist (Hayashi & Gonçalves, 2023). Instead, I am inspired by the premise that everyday living is creative by itself—that is, the way we make a cup of tea, how we sit, how we talk and walk (Hanhardt, 2018; Janevski & Lax, 2018; Trungpa, 1996).

45 In *The Emotional Life of Your Brain*, Davidson (2012) explains that emotional states last for a few seconds and tend to dissipate on their own. In *My Stroke of Insight*, Taylor (2008) speaks that an emotion lasts for about 90 seconds and that we re-enact it over and over by overthinking it.

46 brown (2017) writes about six elements of emergence: fractals, adaptive, interdependence and decentralization, non-linear and iterative, resilience and transformative justice, and creating more possibilities.

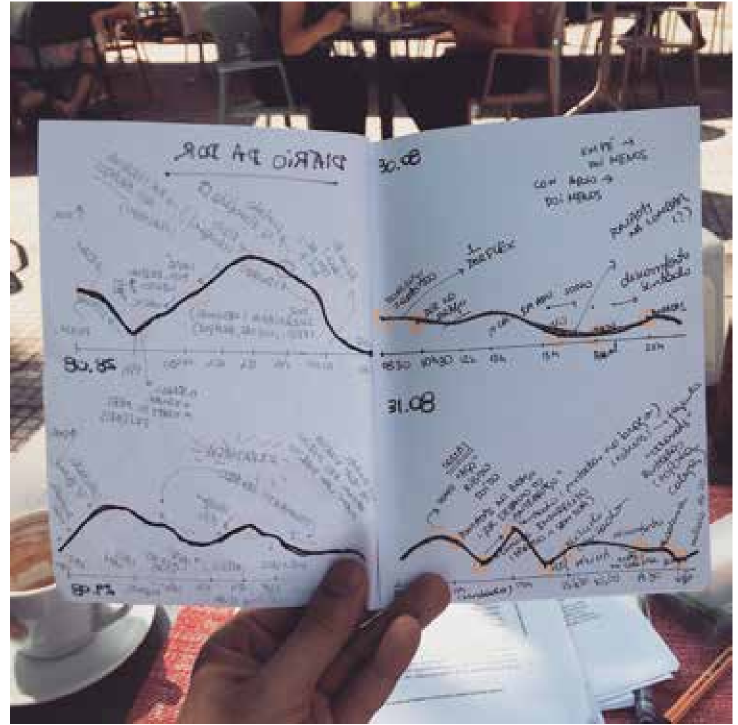


Fig.12: personal diary of pain.
São Paulo, September, 2018.

2019; Merleau-Ponty, 1945)—that is, a lived-world which Merleau-Ponty (1945) called a *spectacle*. In that way, Merleau-Ponty (1945) argued that sense is not derived from intellectual acts, but as an intuitive response to “question(s) merely latent in the landscape” (p. 58). In this PhD, I am interested in sensing which can allow for fresh knowing—and, if possible (why not?), for blasting open our condition of being captivated-in-acceptance[47] (Husserl, 1970; Merleau-Ponty, 1945). How do we bring the ability of attuning to emergence to education?

In 2015, during my Masters in the Transdisciplinary Design program at Parsons the New School for Design, I spent a month with Sonali Ojha in Mumbai. Sonali was an awarded educator and social entrepreneur, whose work has been transformative for thousands of young people in India (Ojha, 2006)[48]. During the month, we hosted conversations and workshops with K12 teachers. I observed that Sonali’s practice was rooted in the principle that education should be grounded in emergence. During our sessions, we

47 Husserl (1970) argued that we are captivated because we are often held captive by our assumptions, worldviews and biases—therefore, he called for the development of critical self-reflection and awareness of our experiences. The term captivatedness-in-acceptance has been proposed by Heidegger to describe how individuals become captivated by cultural and social narratives without awareness of it (Glock, 2016).

48 Sonali Ojha passed away in August 2021.

referred to the emergent future as the emergent next (Gonçalves & Ojha, 2016)[49].

For this PhD, I returned to Mumbai for a new round of workshops with K12 teachers—with whom we shared that learning to see and sense emergence is a skill in itself (Hayashi, 2021). Sensing emergence can help educators understand where their students are, what is possible that is new, what is invisible that is seeking to be made visible, and what is unvoiced that is seeking to be voiced. If teachers can sense what wants to emerge, this can help them define new trajectories and pathways for learning. If the process of becoming is at the base of authentic education (Rinaldi, 2009), then, by embracing emergence, an educational setting can transform into a space of "promise and possibility" (hooks (sic), 1994, p. 4).

The value of not knowing

In one of the Social Presencing Theater practices, the Field Dance (Hayashi, 2021), a group of people sit in a semicircle facing inwards. The person at the edge gets up and mindfully walks to the center, turns and faces the group. For a brief silent pause, the group stays with an open moment. From that openness (which could feel awkward), the person makes a gesture, pauses, lets the gesture dissolve, and walks sideways, exchanging places with the next person at the edge of the semicircle—who re-initiates.

The Field Dance asks us to let go of our thoughts, ideas and judgments to welcome awkwardness, not knowing and spontaneity. From practicing this embodied activity for many years under the guidance of Arawana Hayashi, I internalized that not knowing is a great source of creativity (Hayashi, 2021). In *Zen Mind, Beginner's Mind*, Suzuki (2011) says that there are many possibilities in a beginner's mind; while in an expert's mind, there are fewer. To cultivate a beginner's mind, Hayashi (2021) emphasizes the importance of the open gap of simply standing in the middle, not knowing what is going to happen. From that gap of not knowing, something new can arise[50] (Doi, 1971; Hayashi, 2021; Keats, 1917).

In Japanese arts, the aesthetic principle of Ma captures this notion of an open space or gap[51]. Ma has both objective (i.e. as intervals in space and time) and subjective meanings (i.e. pointing towards a cultural paradigm of no-action)

49 brown (2017) has a beautiful expression for the emergent next, which she calls the "next elegant step"; that is, "in any moment of life, there is a next elegant step—one that is possible and strategic based on who is taking it and where they are trying to go. Find it and you cannot fail" (p. 138).

50 Varela (2000) spoke of three gestures towards becoming aware—those included *suspension* (i.e. suspending or dropping habitual patterns; taking a break), *re-directing* (i.e. directing attention to what is emerging, what starts from the space of not knowing), and *letting go* (i.e. the light touch of not holding on to what arises).

51 "[Ma] can be translated into English as space, spacing, interval, gap, blank, room, pause, rest, time, timing, or opening…" (Pilgrim, 1986, p. 257). Pilgrim (1986) also refers to Ma as a "pregnant nothing" (p. 258).

Fig.13: The emergent next (Gonçalves & Ojha, 2016).

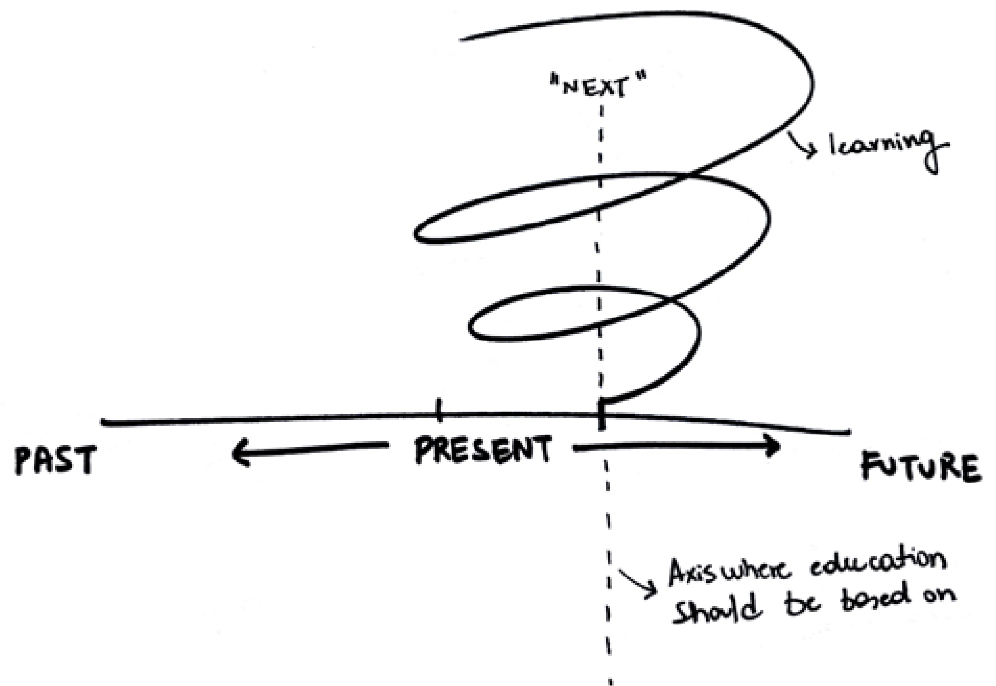
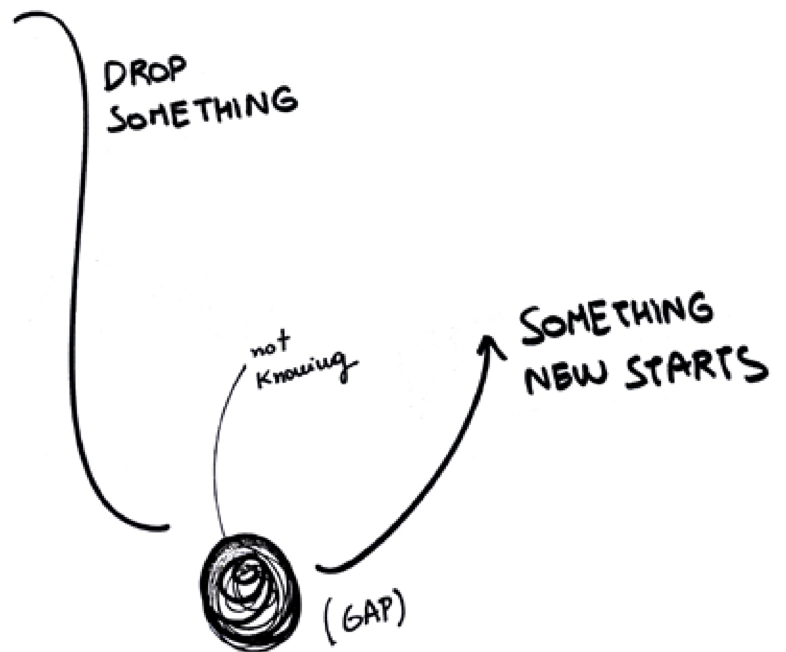


Fig.14: Something arises from not knowing (Hayashi, 2021).



(Doi, 1971; Kuki, 1981; Mishima, 1955). Pilgrim (1986) says that Ma resides in the between-ness which continually shatters the literal and descriptive worlds—therefore, inviting direct experiences of the inarticulate and deconstructed world of immediate reality. Experiencing Ma, though, does not function without an experiential sensitivity. That is, a sensitivity in which the self is emptied into the immediacy of each passing moment (Pilgrim, 1986).

The open space of not knowing is often a zone of discomfort. And because our tendency is to avoid discomfort, learning to stay with an open space is a skill which needs to be learnt and cultivated (Brown, 2017). In this PhD, I recognize that embracing the value of not knowing means learning to stay with the discomfort of open spaces. I describe how I intentionally designed gaps, pauses, silences in the methods introduced in ACT II. This was done both to offer groups the opportunity to consciously practice staying with the discomfort of not knowing—as well as to yield unexpected (and often surprising) experiences within groups.

3. Language and experience

The Social Presencing Theater sessions we ran at the Presencing Institute were based on the embodied and felt experience of people[52]. The embodied activities asked participants to attend to and stay with their moment-to-moment experience without immediately labeling it with a word. In that way, delaying meaning-making. By attuning to their bodies and privileging the voice of the body (Hayashi, 2021), participants reported feeling transformed (Lemle, Gonçalves, Hayashi, & Yukelson, 2019). However, during group reflections, they often struggled to find the words to describe their experiences (Gonçalves & Hayashi, 2021; Diatta, Gonçalves, & Grocott, 2022). Their descriptions "were often habitual, interpretive (i.e. conceptual), vague (i.e. hard to follow), generalized (i.e. not specific), or psychological (i.e. sharing of personal, emotional states)" (Gonçalves & Hayashi, 2021, p. 43).

At that time, we sought a language to describe people's experience within an emergent social reality, that is, a language for the "multi-layered, underlying patterns and intangible qualities that were present in the social field." By paying attention to the groups, "we noticed how people co-created a social reality together" through embodied choices which seemed to repeat themselves (Gonçalves & Hayashi, 2021, p. 43). For instance, doing the same as or different than someone else. At times, a person would start a movement, leading

52 These sessions happened during the Social Presencing Theater Advanced Training, a yearly program with three in-person meetings (five immersive days each). The sessions were hosted in New York and Berlin between 2016-2019; and co-facilitated by Arawana Hayashi, Angela Baldini, Beth Mount, Kate Johnson, Manish Srivastava and myself (https://arawanahayashi.com/courses.html).

Fig.15: Participants make a lying down pattern during a SPT practice (Presencing Institute Archive).

others into it. Hence, following, initiating, mirroring, repeating or contrasting movements became visible patterns of the group (Gonçalves & Hayashi, 2021). This choice-making was, in essence, a micro-experiment of social-reality making (Goffman, 1967; Mauss, 1935).

Vocabulary for speaking of our subjective experience is very little explored in Western culture (Gendlin, 1978). Therefore in order to do embodied research, Varela (2000) argued that researchers must become black belts, competent observers and describers of their own experience. In the context of this PhD, how then can we understand the interrelation between intangible experiences and the verbal description of our experience?

For instance, Vygotsky's research has emphasized the specific relationship of thought and language. Vygotsky (1934) argued that language does not originate thought, because thought already exists since a child is born. Neither is language a byproduct of thought, carrying out its meaning into the world[53]. Vygotsky (1934) found that the connection of thought and language is, however, interrelated because the acquisition of language alters thought[54].

53 Vygostky (1934) argued that words cannot be simply put on by thought as if dressing up a ready-made garment.

54 In social-emotional research, it is often said that

Looking back, I can see that our applied practice at the Presencing Institute also revealed that language can alter and deepen our understanding of embodied experiences. For example, by co-designing an *aesthetic language* (i.e. a language based on felt experience)[55], we discovered that language is not only a matter of communication (Gonçalves & Hayashi, 2019), but actively refines and changes the understanding of our experiences (Gonçalves & Hayashi, 2019; Vygotsky, 1934). We noticed the aesthetic language drew people's attention to meaningful memories of their embodied experiences and scaffolded their descriptions, thereby revealing nuances. Ultimately, the aesthetic language increased "self-awareness, awareness of the collective, and of the creative potential of the group" (Gonçalves & Hayashi, 2021, p. 54).

When I ask in this PhD, how to make intangible experiences visible?, the question of language becomes of primary importance. What must be the attributes of a language to support, enhance, deepen our understanding of embodied, felt experiences? From my previous practice and embodiment research, I learned that language must strike a gentle balance between words and felt experience because rigid language can easily throw us off by objectifying the dimension of our experiences which is, anyway, beyond words (Gonçalves & Hayashi, 2021).

Language must allow us to stay longer in an open space with the felt quality of our experience (Gonçalves & Hayashi, 2021) and only then insight must be slowly brought into being (Varela, Thompson, & Rosch, 1991). This way, clarity rises like the sun in the early morning. With steadiness and presence, language can gently bring clarity across the entire landscape of our inner experience.

4. Transforming education

In this PhD I locate my material and embodied explorations within the field of transformative education (Dewey; 1938; Freire, 1970; hooks (sic), 1994). Transformative education is the opposite of transmissional learning which emphasizes the transmission of knowledge from an educator to a student (Dirkx, 2006; Mezirow, 1991)—that is, an approach based on a worldview that believes the students should be learning from knowledge that has been accumulated (by adults) in the past[56] (Freire, 1970; Gonçalves & Ojha, 2016).

labeling (i.e. naming) our emotions brings us awareness and changes the ways we discern and process our feelings (Brackett, 2020; David, 2016).

55 The visible embodied shapes people made, how they felt as part of the group, and their deeper awareness of themselves and others became the three pillars of the aesthetic language (Gonçalves & Hayashi, 2019). The visible structure (yellow cards) included, for example, spatial levels (i.e. sitting, standing, lying down), proximity, symmetry, and rhythm. The relational structure (light blue cards) included, among others, connection, empathy, inclusion, and playfulness. And the deep structure (dark blue cards) included relaxation, spaciousness, not knowing, spontaneity, and surprise.

56 Freire (1970) referred to transmissional learning as banking education—i.e. learning models that ask students to memorize and repeat information.

Fig.16: Aesthetic Language Cards (Gonçalves & Hayashi, 2019).

If society is constantly changing, then education should prepare students to engage with complex futures rather than only conform to knowledge from the past (Dewey, 1938; Freire, 1970; hooks (sic), 1994; Gonçalves & Ojha, 2016). Hence, we need educational models that are based on emergence (Csikszentmihalyi; 1996; Malaguzzi, 2016; Osberg & Biesta, 2010; Rinaldi, 2009). We need to create learning environments that hold nurturing and safe spaces of possibility, curiosity, and imagination for young people (hooks (sic), 1994; Ojha, 2006).

Prioritizing transmissional learning has taken our educational systems thus far. However, to prepare students to address the complex issues of the present and emerging future, we need new and deeper forms of learning—that is, towards a transformative learning that shifts what is at the roots of our individual and collective behaviors: our ways of being, thinking, feeling, relating and creating[57] (Dirkx, 2006; Henriksson et al, 2020; Mezirow, 1991, 2009; Senge, 1990; Sullivan, 1999).

In the context of transformative education, I consider the shifts happening both at an individual and a systemic level. The iceberg model (Hayashi, 2021; Meadows, 2008; Scharmer, 2007; Schein, 1985; Senge, 1990) is a helpful framework to understand these shifts. The model introduces the underlying structures beneath visible events (i.e.

57 brown (2017) writes “change doesn’t simply come from thinking differently. The process involves shifting what we understand, what we can feel, and what we practice, reconnecting us with the incredible data and resilience of the body” (p. 128).

behaviors)—which can provide leverage for individual and societal change[58].

For instance, Meadows (2008) spoke of system structures as places to intervene in a system, including the rules, goals, flows, and power dynamics of a system. Towards the bottom of the iceberg, Scharmer (2007) speaks of patterns of thoughts and relationships (e.g. mental models, relational experiences); and of the *Source* of creativity (i.e. connecting with the essence of what's possible; with an emergent future) as the deeper levers for change.

This PhD focuses on the bottom two parts of the iceberg: patterns of thoughts and relationships; and Source of creativity. I explore these by focusing on the intangible qualities of experience previously outlined in section (2)—i.e. thoughts, emotions, felt senses, and sensations. Researchers across fields of psychology, systems change, and neuroscience[59] demonstrate that the first essential step on a scale towards transformative learning is to become aware of our experience[60]. In the transtheoretical model of behavior change, becoming aware of our experience is indicated as a move from precontemplation (i.e. when we are still unaware) to contemplation (i.e. when we begin to recognize our experience) (Prochaska & DiClemente, 2005). Hence, making people aware of their intangible experiences is an important part on the journey of shifting behaviors and societal structures[61].

Leading up to this PhD, my design practice was mainly centered within education and learning—in particular around youth development, professional education and life-long learning. Therefore, the research projects later introduced in ACT II include working with K12 teachers and undergraduate students. The question I ask then is: How to make the intangible experiences that occur during transformative learning visible? And will making these experiences visible lead to an increase in awareness (i.e. a move from precontemplation to contemplation)?

58 I believe brown (2017) summarizes the core essence of the iceberg model when she says, "as we are, so it will be" (p. 73).

59 Kegan & Lahey, 2009; Senge, 1990; Petitmengin, Remillieux & Valenzuela-Moguillansky, 2019; Polanyi, 1967; Prochaska & DiClemente, 2005; Varela, Thompson & Rosch, 2016.

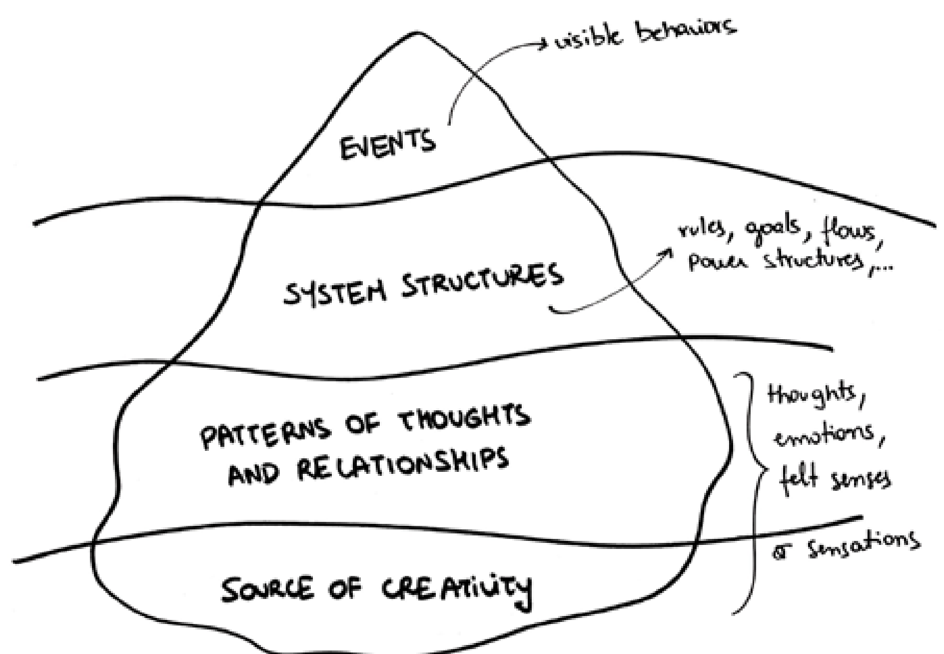
60 I agree with brown (2017) that: "transformation doesn't happen in a linear way, at least not one we can always track. It happens in cycles, convergences, explosions" (p. 66). I reference the transtheoretical model only as a way of pointing to the stage of bringing something from precontemplation to contemplation. I also agree with Strozzi-Heckler (2007) that transformation requires repetition.

61 Souza (2019) says that strong ideas are at the root of social change—he argues that widespread ideas drive entire societies towards one direction or another. While Butler (1995) said, "belief initiates and guides action—or it does nothing" (brown, 2017, p. 38).

"Shifting our way of being is our tangible outcome. Systems change comes from big groups making big shifts in being."

—adrienne maree brown (2017, p. 135)

Fig.17: Iceberg model. Adapted from Hayashi (2021), Meadows (2008), Scharmer (2007) and Senge (1990).



Closing

Drawing from formative practice experiences, I outlined four theoretical pillars that guide my PhD. The sections *Materiality of Things* and *Intangible Experiences* expanded the key foundational theoretical principles which introduce the idea that our embodied and material world holds vast and intangible sense and meaning. By intangible experiences, I focused on thoughts (e.g. mindsets, beliefs, values), emotions, felt senses, and sensations. These intangible experiences are non-verbal (i.e. tacit and pre-reflective), embodied (i.e. living in one's body-mind system), relational (i.e. always within a social context), subjective (i.e. experienced by a subject), and creative (i.e. constantly unfolding in a state of becoming).

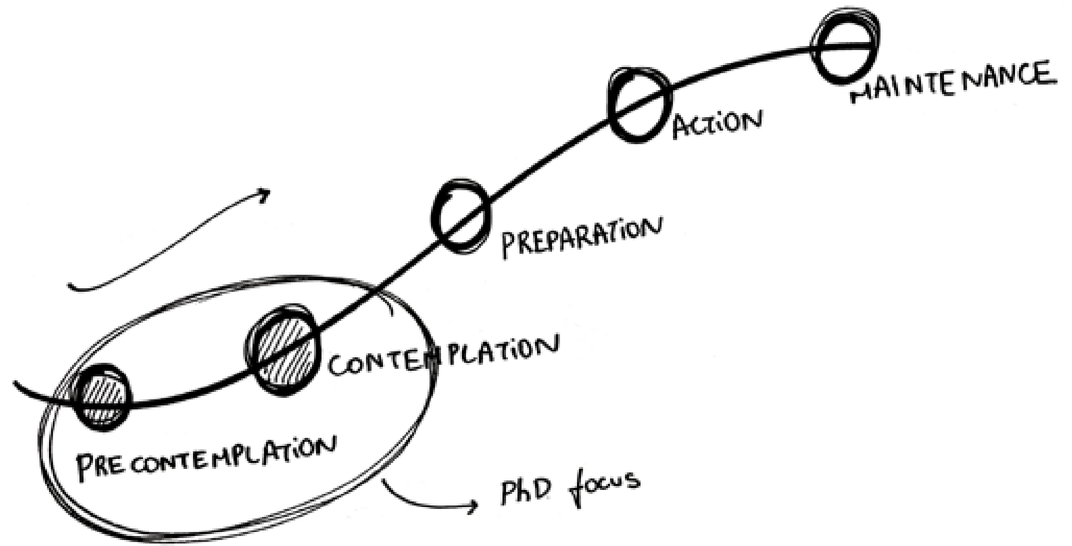
In the sections *Language and Experience* and *Transforming Education*, I considered the implications of the practice of designing for the intangible and raised questions. For example, what language can be used to best describe intangible experiences? I shared that the use of language is not only a matter of communication—because language alters the ways we think and feel. Drawing on insights from my embodied design practice, I called upon the need to stay longer with our lived, embodied, non-verbal experiences—as we then, assist the birth of sense and meaning. I highlighted the importance of language based on felt, sensorial experiences—rather than only relying on vague, conceptual, generalized and/or psychological descriptions.

I closed ACT I by bringing the previously outlined theoretical pillars to transformative education (Mezirow, 1991). I introduced the iceberg model to illustrate that the work of shifting our ways of thinking, being, doing, relating and creating happens across multiple layers and includes patterns of thought, relationships, and (even) the very source of creativity. With the transtheoretical model, I then located the specific shift I focus on in this research—that is, a shift from precontemplation (i.e. unaware or unconscious) to contemplation (aware or conscious) of intangible experiences.

In this PhD, I have primarily worked with K12 educators and undergraduate students. I believe, however, that the questions being asked can be expanded to adult and life-long learning. Therefore, this research can be of interest to facilitators, trainers and coaches, adult development experts, change practitioners, leaders, learning designers, and psychologists. The questions being asked by this PhD, ultimately, sit within an expanded field of human development towards societal transformation[62].

62 I relate to brown's positionality regarding societal change: "I am not of the belief that everything happens for a reason—at least not a discernible one; it comforts me sometimes to know there is chaos, there is nonsense. But I believe that regardless of what happens, there is an opportunity to move with intention—towards growth, relationship, regeneration" (brown, 2017, p.47).

Fig.18: Transtheoretical model. Adapted from Prochaska & DiClemente (2005).



The theoretical pillars I outlined in ACT I inform the onto-epistemology guiding the methodology in ACT II. Making sense of my previous practice has helped me clarify what are the questions I still hold as a practitioner-researcher. Those are now the questions I bring to this PhD: How to make the intangible visible? What does making visible help us become aware of? How do we become aware of our experience? How can awareness lead to fresh knowing? What roles do material and embodied prompts perform in making the intangible visible?

I offer ACT I as a tribute to all mentors, teachers and scholars who influenced me and many of whom have been introduced in this chapter. Your questions, doubts, ways of being have inspired me—leading me into pathways I could have never imagined.

Fig.19: Embodied exercise during the Social Art Residency (Yucatán, Mexico, 2020).

awareness-based design

ACT II *(Ha)*

bringing embodied awareness to design

In Japanese Theater, *Ha* is the shattering middle—that is, the moment when the performance goes in different directions. Ha is the breaking point like when a mirror shatters into many pieces. I call this act Ha because now is the moment when, from key questions formulated in ACT I, I go in many different directions to explore, harvest and make sense of insights and discoveries. ACT II is, therefore, dedicated to formulating the research design, uncovering the main findings and articulating the core contributions of the PhD.

In ACT I, I drew on my previous professional practice to arrive at a set of questions—which I then brought into the PhD. The main question is: **how to make the intangible visible?** And, considering the learning orientation of my practice, it has become: **how to make intangible experiences that occur during transformative learning visible?**

After bringing design to embodied awareness (ACT I), I now explore the PhD's main question by bringing embodied awareness to design. By this I mean: bringing awareness-based methods, practices, and approaches (Depraz, Varela, & Vermersch, 2003; Diatta, Gonçalves, & Grocott, 2022; Hayashi, 2021; Petitmengin, 2007; Rome, 2014; Scharmer & Kaeufer, 2015) to the making orientation of design (Cross, 2006; Grocott, 2022; Kolko, 2011; Mattelmäki, 2006). By *Awareness*, I wish to evoke the sense perceptions of how we come to feel, experience, sense the world inside and all-around us while by *Making* I evoke the embodied, conceptual and material aspects of giving form to the intangible.

Acknowledging how our culture is cut off from its bodily life (Varela, Thompson, & Rosch, 1991), I look at practices where the body and mind can become more attuned. They often feel separated because we tend to live in our heads, that is, we daydream, have opinions and constantly think of what has happened (i.e. the past) or of what is to come (i.e. the future) (Chödrön, 2003; Hanh, 2008; Hayashi, 2021; Kabat-Zinn, 1994). Becoming aware is the act of cutting through the mind-chattering and returning to the present moment[63]. Awareness therefore enables the integration of body and mind (Hayashi, 2021; Siegel, 2010; Varela, Thompson, & Rosch, 1991)—that is, the feeling that the body and the mind are naturally coordinated (Varela, Thompson, & Rosch, 1991).

If this dissociation of body and mind, awareness and experience is the result of habit (Varela, Thompson, & Rosch, 1991), then we can train ourselves in new habits through mindfulness-awareness methods. In this PhD, I respond to Varela's call for researchers in the fields of human development to train in becoming black belts in first-person experience (Varela & Scharmer, 2000). That is, training

63 In that way, awareness is a disruption to mindlessness (Varela, Thompson, & Rosch, 1991). According to Varela, Thompson, & Rosch (1991), cutting through and letting go are the two actions which allow the mind to know itself and to shine forth.

in recognizing the value of subjective intangible experiences, attuning to them and letting the awareness of lived experiences inform individual and collective choices and actions.

The main contribution of this PhD is a method-pedagogy which I refer to as a form of awareness-based design. By awareness-based design, I do not mean a toolkit—but a living curriculum that includes a set of literacies, comprehensions and sensibilities[64] as well as the practice of embodied-reflective activities for working with self and others within a social field[65]. This method-pedagogy has emerged from the work in two sites of inquiry: Workshop A (Mumbai, India) and Workshop B (Temuco, Chile).

Workshop A includes a series of one-day experiential workshops I co-facilitated (in-person) with my PhD colleague Sonali Ojha in January 2020 (Mumbai, India). We worked with 48 K12 teachers to make the emotional landscape of the school visible[66]. By landscape, we mean the social-emotional field of the school (Böll & Senge, 2020; Scharmer, 2007).

Workshop B refers to a weeklong online session I hosted for students from Universidad Católica de Temuco (Chile)—within a university-wide seminar called *Co-creating the Emergent Future*[67]. In this workshop, entitled *Future Imaginaries: If Not This, Then What?*, the students made tangible artifacts to embody their longings and hopes for the future of the city of Temuco.

Grocott (2022) introduces four “sites of inquiry to hold onto when designing for transformative learning” (p. 62): surfacing, envisaging, experiencing and driving change (SEED). Here I choose to focus on the surfacing and envisioning qualities (Grocott, 2022) of awareness-based design.

These workshops were designed on a combination of different variables; which are, truly speaking, practice-based creative hunches. For instance, the variable of hosting in-person (Workshop A) or online sessions (Workshop B). Another variable was the group size for each activity: that is, individual, pairs (duets), small groups (3-5 people), and large groups (10-20 people)[68]. Here I wonder, what does the group size afford in terms

64 The sensibilities refer to our capacity of perceiving individual and collective ways of knowing, being, doing, relating and creating.

65 From practice, I learned that in order to facilitate awareness-based work for others, I must start from working with myself. That is, working with the simple, direct, everyday ways I attend to, tune into and stay with my own embodied and felt experiences.

66 R.N. Podar School (Mumbai, India—https://www.rnpodarschool.com).

67 FAAD workshop 2021 at Universidad Católica de Temuco (https://www.faadworkshop.com/workshops/faadworkshop2021).

68 I learned to work with groups of different sizes with choreographer Arawana Hayashi, who referred to pairs as duets and large groups as villages. Arawana’s performative work has helped me look at group formations as visible structures of people moving across time and space (Hayashi, 2021).

of personal experience and sense-making? Following a practice-based hunch, I intentionally designed learning activities that varied from individual work to small and large group engagement.

A third variable was the tangible form(s) (e.g. body, photographs, videos, drawings, etc.) through which intangible experiences were explored[69]. Building upon the insight that the transition and combination of multiple modes of inquiry can support the creation and consolidation of sense (Rinaldi, 2009), I intentionally designed learning encounters that combined embodiment with two or more other modes of inquiry. For example, a learning activity combining embodiment with photography; embodiment with imagery; or embodiment with writing. Here I wonder, how can different tangible forms make transformative learning visible? Is there a difference, for instance, in combining embodiment and photography versus embodiment and drawing? What does a tangible form afford in comparison with the others in terms of making the intangible visible? Can they enhance one another if combined?

ACT II is organized in three chapters. In chapter 1, I introduce the methodology and the onto-epistemological perspectives sustaining it. In chapters 2 and 3, the findings and emergent questions of workshops A and B mentioned before are discussed.

It is important to notice that I consider the workshops as exploratory learning encounters and practice-based sites of inquiry. Therefore, the presented findings are not meant to be read as universal truth. Instead, the open-ended orientation of the learning activities were intentional, as they sought to reveal (often at surprising moments) literacies, comprehensions and sensibilities that could be nurtured in order to sustain individual and collective transformation.

69 By tangible form, I include embodied and/or material forms (e.g. the body, a paper drawing, a collage, etc.), digital forms that can be seen and manipulated (e.g. digital photography and video) and writing.

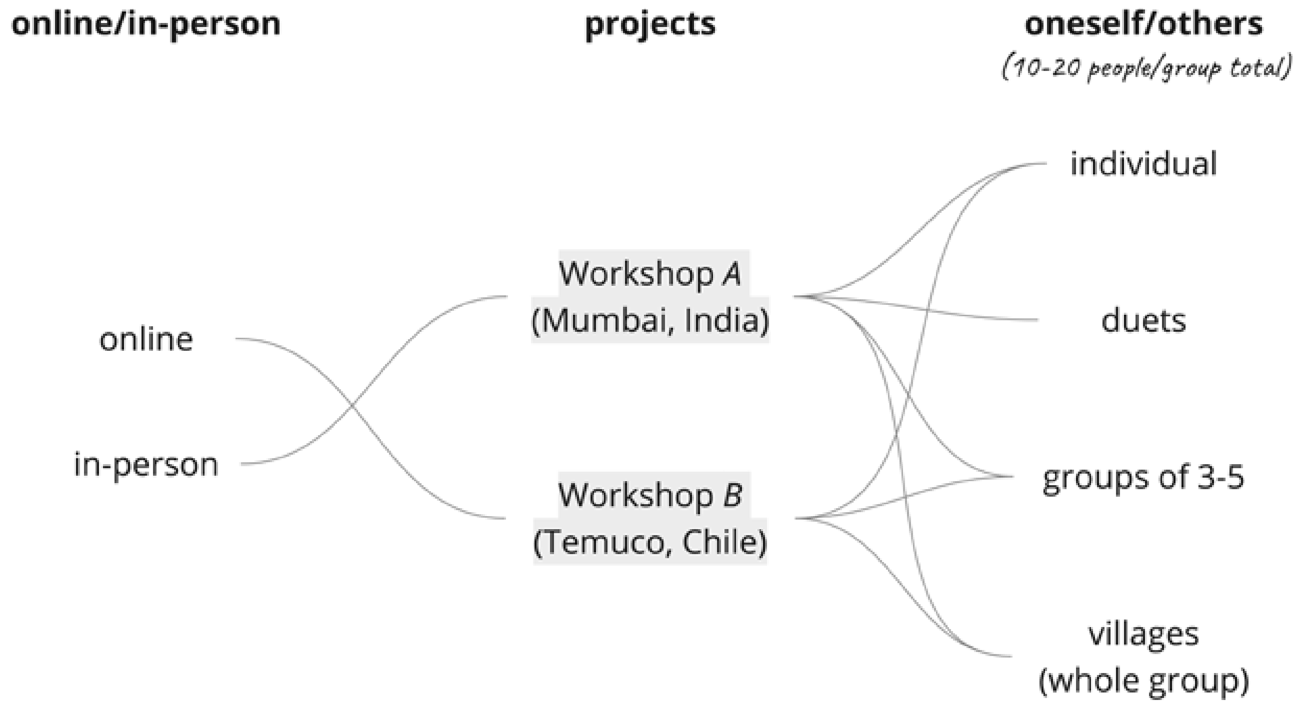


Table 1: Workshops (format and group size).

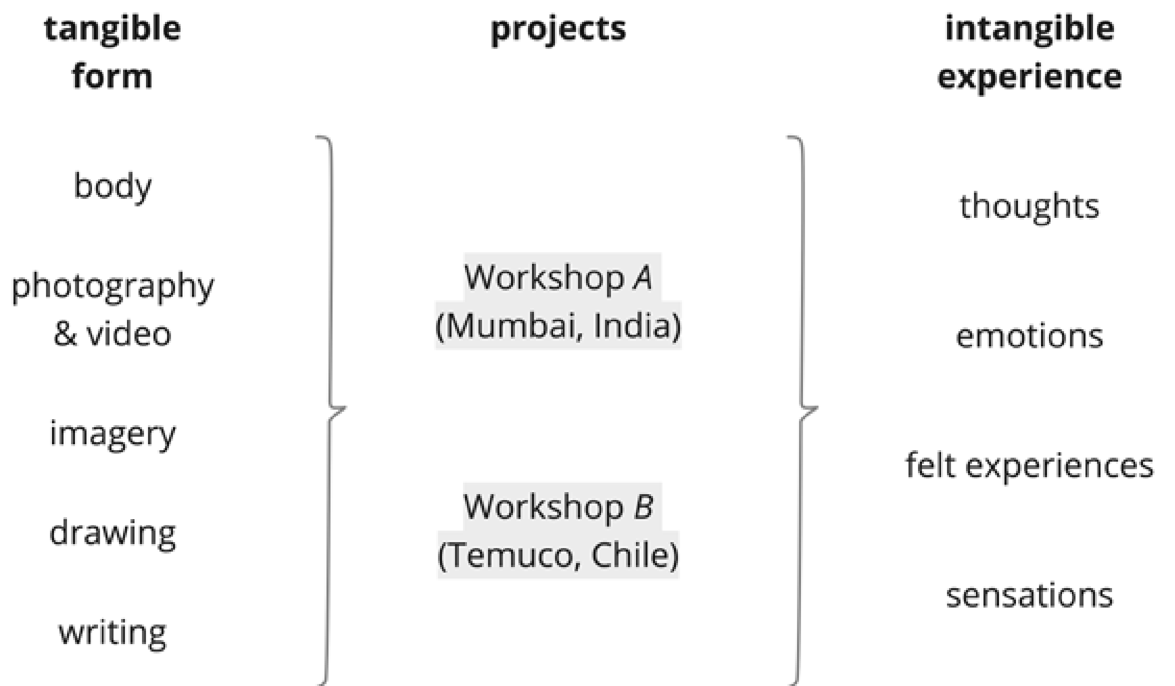


Table 2: Workshops (tangible form vs. intangible experience).

Chapter 1: Awareness-based Design

1. Situating the practice

I came to the field of design during my Masters. At that time, I was an environmental engineer working with social change in project incubators in Brazil and India. I believe the acceptance of my application to design school was then the perfect definition of a lucky strike. It was also a demonstration of my ability to reach beyond my disciplinary field and imagine what other forms of knowledge and practice could be possible. I recall wondering: What field of knowledge might be interested in giving form and shape to the future? Design was the answer that often popped into my mind.

At that time I still worked with social innovation in India and I observed that social entrepreneurs with innovative ideas were often seen as stars in the social sector[70]. But I rarely encountered anyone asking what skills and mindsets led change makers to new ideas? And what systemic structures allowed these ideas to flourish and be taken forward? I noticed that innovative ideas were often treated as exceptional and happenstance—therefore, primarily linked to the talents of a single individual.

The desire to explore future-making was then my first motivation to enter the field of design—and move from Mumbai to New York City. Until then I had never worked closely with designers. In New York, I remember always marveling at the designers' making skills. Once I saw students in the Design & Technology program at Parsons The New School for Design create the sculpture of a large human head out of laser-cut wood. The students hang the immersive structure in the middle of a common area at the university. Every time I would come to class, I saw them tweaking it. This ability of making things tangible deeply impressed me at that time.

Being in touch with architects, technologists, product and graphic designers inspired me to learn about the affordances of making tangible products, while also discovering the limitations of my own crafting skill set. I had then to consider what kind of making I was going to be involved in. Once I realized that design was increasingly moving towards dematerialized realms (Hunt, 2012; Grocott, 2022; Teixeira, 2013), I understood it was a good timing and opportunity to be there—and feel confident to call myself a designer[71].

Currently I often introduce myself as a social designer.

70 Between 2009 and 2014, I lived in India and worked with the social entrepreneurship incubator Unltd India (https://unltdindia.org/).

71 For example, Manzini (2015) has theorized the design of services, Thackara (2005) discusses the design of social innovation, Kimbell (2011) explores design thinking as the design of intangible experiences, Buchanan (2011) explores the design of cultural and social values, and Mau (2004) writes on how design can create intangible experiences that shift the ways we think and act. In education, Dewey (1997) explored how arts and design can create meaningful transformative learning experiences by shifting the ways people interact with the world.

I situate my design practice within the intersection of social design[72], embodied awareness and transformative education[73]. By practice, I include research, teaching and applied projects. My practice is, in essence, transdisciplinary, situated, reflective, relational and emergent. My ultimate wish is to contribute to individual and societal transformation towards cultures of well-being, collective agency and planetarian citizenship.

In the light of social, cultural and technological changes, designers might feel called to generate not only material objects but also systems interventions, services and experiences (Buchanan, 2011; Davis, 2008). When I look at the types of outputs that my practice often creates, I find experiences, tools, spaces, shifts, models of engagement, processes, protocols, routines, and even pattern languages[74].

In regards to situating my research, I am interested in practitioner-led models for researching practice through design (Frayling, 1993)—which are project-grounded (Findeli, 1999), performative (Haseman, 2006)[75] and reflective (Schön, 1983). For many years, this PhD has sat alongside with other applied projects I was involved in—as a consultant, action researcher and educator. Therefore pursuing a PhD initially appealed to me as a site of reflective inquiry (Simon, 1981) that could deepen my understanding of my own applied practice[76].

In this PhD, I am particularly inspired by Schön's notion of a reflective practice—that is, one that seeks to "integrate thought and action, theory and practice, the academy and the everyday world" (Schön, 1992, p. 123). I specifically apply his notion of being in conversation with the materials when I propose the awareness-based design prompts (section 3 below). The main function

72 Here, I consider social design as a field addressing social challenges and wicked problems (Buchanan, 2011) through design-led ways of knowing, being and doing. Social design can deliver various tangible as well as immaterial outputs: new routines, habits, behaviors; both at an individual as well as at a systemic level.

73 Within transformative education, I have worked with both youth development (e.g. agency, citizenship, empowerment, 21st century skills and future-making abilities) and adult learning (i.e. life-long learning through immersive experiences).

74 You can read more about samples of my applied practice and work here: http://www.ricardo-dutra.com/.

75 In this PhD, I attempt to generate new knowledge through a performative artistic inquiry. I consider my practice-based design research approach as performative because it values and uses embodied knowledge. For instance, I explore embodiment as a creative form of knowing to articulate complex individual and systemic phenomena—including emotions, sensations, thoughts.

76 By reflective inquiry, I mean a site for rigorous examination of my own beliefs, biases, assumptions, values, ideas and approaches—in close dialogue with other reflective practitioners (Simon, 1981). In this PhD, the sustained process of self-reflection sat alongside an applied practice which I was already carrying out. Therefore, I hoped that the PhD would allow for a depth of understanding around my practice to emerge.

of these prompts is to provoke a situation to *talk back* to an individual and/or group, leading them towards new frames and meanings (Schön, 1983).

Another important guiding interest is to apply design outside of design—that is, situating it as a social practice in collaboration with architects, educators, creative practitioners, change makers, social entrepreneurs, leaders, and so on. Therefore my emphasis in this PhD is not on positioning design within design—but on drawing a transdisciplinary, emergent body of work which is rooted in design but springs out to other fields, domains and practices[77].

2. Situating the research

I situate this PhD within practice-based design research (Buchanan, 2011; Cross, 2006; Sanders, 2006; Schön, 1983), rooted in an ontology of becoming and in constructivist and pragmatic epistemologies (Gray, 2014). I am interested in doing research which is embedded and in dialogue with the world—that is, the applied research that comes out from the social practice of creating, proposing and reflecting upon designed interventions. As a Latin American gay man, I am also inspired by the desire to carry out research that is inspired by what Santos (2019) calls the *epistemologies of the South*[78].

A primary guiding epistemology to my research is constructivism—that is, the understanding that "truth and meaning are created by the subject's interaction with the world." Therefore, "meaning is constructed and not discovered" (Gray, 2014, p. 20). In ACT I, I introduced a formative professional experience working with awareness-based systems change practitioners. In that period, I was extensively exposed to research and applied practices rooted in phenomenology (Depraz, Varela & Vermersch, 2003; Husserl, 2001; Merleau-Ponty, 1945; Petitmengin, 2007). Considering that phenomenology is based on constructivism (Gray, 2014; Patel, 2015), by bringing embodied awareness to design, I draw on phenomenology as a key theoretical perspective.

As a designer, my work is in fact rooted in an epistemology of pragmatism, that is, I am constantly "renegotiating, debating and interpreting reality in the light of its usefulness in new unpredictable situations" (Patel, 2015). Framing (and reframing) problems, finding (temporary) solutions, embracing

77 I am inspired by the vision of cultivating transdisciplinary ways of knowing, which includes: the notion that multiple perspectives are needed to address complex societal challenges (Nicolescu, 2002; Stehr, 1994) and the belief that all forms of knowledge are interconnected (Laszlo, 2003; Morin, 2001).

78 Santos (2019) advocates for a decolonization of knowledge and recognition of what he calls the *epistemologies of the South*. I agree with Santos (2019) that Western forms of knowing have homogenized epistemologies and therefore marginalized the ways of knowing and being of those coming from non-Western cultures. This way, I am inspired by the vision of co-creating new forms of knowledge that are not solely rooted in Western views of the world.

change and learning by doing are pragmatic guideposts for my design practice. These onto-epistemological perspectives are so present in my work that I often need to remind myself not to take them for granted—particularly considering the multidisciplinary contexts of the projects I work on[79]. The ways I design, tweak, try out, learn and adapt (or even pivot directions) are therefore my practice—that is, my ways of knowing and doing research through design.

I call the bringing of embodied awareness to social design within applied contexts *awareness-based design*. I refer to awareness-based design as a method-pedagogy to elicit that this practice is a form of craft (Sennett, 2008)—which is not about acquiring technical expertise but about learning a mode of pedagogy which emphasizes experimentation, adaptation and development of a set of material-based and embodied literacies, comprehensions and sensibilities (Diatta, Gonçalves & Grocott, 2022). This way, awareness-based design is a method-pedagogy seeking to become a living curriculum—which is dynamic, changeable and responsive to current and emergent needs of a situation[80].

In the table below, I compare the principles of awareness-based design with two other forms of research: objectivist-positivist experimental research and human-centered design research. I have chosen those for comparison considering that my PhD might be read by people outside of design—that is, those who are interested in transformative education, youth agency, social arts and awareness-based systems change. Therefore, given these transdisciplinary aims of the research, the reader could be from a science-based background or from another non-design background. In these cases, based on my professional practice, I have observed that non-designers often think of design research through a lens of human-centered design—which they often refer to as *design thinking*.

By bringing embodied awareness to social design, I recognize the value of designing methods that help people "revisit immediate experience for new meaning to emerge" (Gray, 2014, p. 24). In a phenomenological sense, the methods proposed in this chapter are "an exploration, via personal experience, of cultural (i.e. social, relational) understandings" (Gray, 2014, p. 24). They seek to support people to "find an internal logic" (p. 24)—which is subjective, embodied, relational

79 I often work with practitioners who are not designers. In the past, for instance, I worked with architects, choreographers, artists, psychologists, teachers, social entrepreneurs, and activists.

80 I am inspired by the notions that learning is experiential, dynamic and ongoing (Dewey, 1997), by how a pedagogy can sustain a political stance such as in Freire's work—reinforcing the importance of dialogic participatory processes towards the development of critical consciousness and empowerment of marginalized groups (Freire, 1970). Another pedagogy which inspires my research is the work of Vygostky and the notion that learning is socially mediated (Vygostky, 1978). Vygostky's work helped me understand that awareness-based design is a process of social mediation.

Orientation	**Human-centered design**	**Awareness-based design**
Theory & practice	Practice-based: emphasizes prototyping and iterative design.	Practice-based: emphasizes making as a way to ground embodied, felt and sensorial awareness.
Research question(s)	A research question emerges from discovering what the community needs or desires: an empathy-based research phase of design.	A research question emerges out of applied practice. The research question might also evolve as a consequence of a direct, reflective conversation with the situation.
Objectivity & subjectivity	Looking *outwards*: the researcher looks outside to ask and investigate what others think and feel. The subjectivity of the researcher is absent.	*Looking outwards-inwards*: there is a disciplined reflexive practice of inquiring into, staying with and describing subjective and relational experiences within a social field.
Time	Linear.	Depth of time.
Truth & meaning	Solution-oriented: it does not seek a universal truth, yet it seeks to propose a solution for a problem.	Pluriversal: the research does not attempt at pinning down a single truth. It recognizes that meanings, paradoxes and interpretations co-exist.
Ways of knowing	Relies on pragmatic ways of knowing.	Relies on embodied, relational and creative ways of knowing.
Researcher's perspective	*Second-person*: based on a researcher's empathy for a group of people.	*First-person*: based on one's lived experience within a social, relational context.

Orientation	Human-centered design	Awareness-based design
Context	Context-specific—yet, it tends to cluster and label the needs of diverse groups.	Situated and embedded—yet attempts to work with universal qualities of being human. The context is both inner and outer.
Data	A design researcher draws insight out of data—which informs choices while prototyping solutions.	Data is owned by people and serves primarily their own process of learning and growth. Data is qualitative and *warm* (Bateson, 2000).
Methods	Qualitative and practice-based methods.	Using mixed methods to establish different views of a phenomenon, situation, experience.
Dissemination	Research findings and dissemination privilege written form—and often integrate imagery.	Multimodal approaches (oral, written, embodied, audio-visual, material) are equally valid.
Power dynamics	From power centers towards the margins.	From the margins to multiple centers—sustained by practices of resistance.

Table 3: Research approach—loosely adapted from Bateson (2000), Gray (2014), Patel (2015) and Santos (2019).

and often non-verbal. The research results then often portray people's discoveries and surprises—as they formulate "new meaning, fuller meaning or renewed meaning" (Gray, 2014, p. 24).

Awareness-based design is a method-pedagogy that draws on creative design moves (e.g. prototyping, making, figuring, etc.) and embodied/relational moves (e.g. sensing, evoking, attending, etc.). This forges two primary methods: (1) awareness-based prompts for working with the relational self (section 3.1); and (2) awareness-based prompts for working with groups (section 3.2).

The core function of these prompts is to surface tacit experiences which are momentarily frozen in a visual, tangible or embodied form (Ackermann, 2007). Grocott (2022) refers to this act as *temporarily fixing* while Akama & Agid (2012) make a distinction between "fixing to make static" and "freezing as a temporary state to trace and orientate our movements" (p. 800). I believe that temporarily freezing in a tangible form is ultimately a prototypical action that is not about making a tangible object or output, but rather about surfacing an awareness of an intangible experience. The tangible/visible artifacts then permit documentation and encourage reflection (Tassinari & Franinovic, 2013; Sanders & Stappers, 2014).

Among other de-materialized approaches to design[81] I consider that awareness-based design sits in closer relationship to social systems design—a field of research and practice which primarily emphasizes understanding of complex social contexts, interdisciplinary collaboration, co-design of systemic interventions and social change (Buchanan, 2011; Manzini, 2015; Thackara, 2005). I believe social systems design often lacks the subjective inner dimension of systems change—which includes the inner world of the individual and the enacted relationships forming social fields (Böll & Senge, 2020; Kahane, 2010; Pomeroy & Herrmann, 2023; Scharmer, 2009). Therefore I believe awareness-based design can offer an aesthetic, felt, poetic, relational and subjective dimension to social systems design[82].

From practice, I realized that I should always be doing inner work in concert with asking others to do hard, vulnerable work. There are two primary reasons for this belief. First, I believe we cannot ask others to be vulnerable in ways we are not prepared to be (hooks (sic),

81 For example: human-centered design, participatory design, emotional design and experimental design.

82 During a conversation, I asked Peter Senge what he believed was the main problem with social systems theory today. He responded that social systems change theory often misses the inner dimension of individuals. Therefore the interconnection of inner and outer dimensions was the next stage for social systems research—he told me that, "The most systemic is actually the most personal."

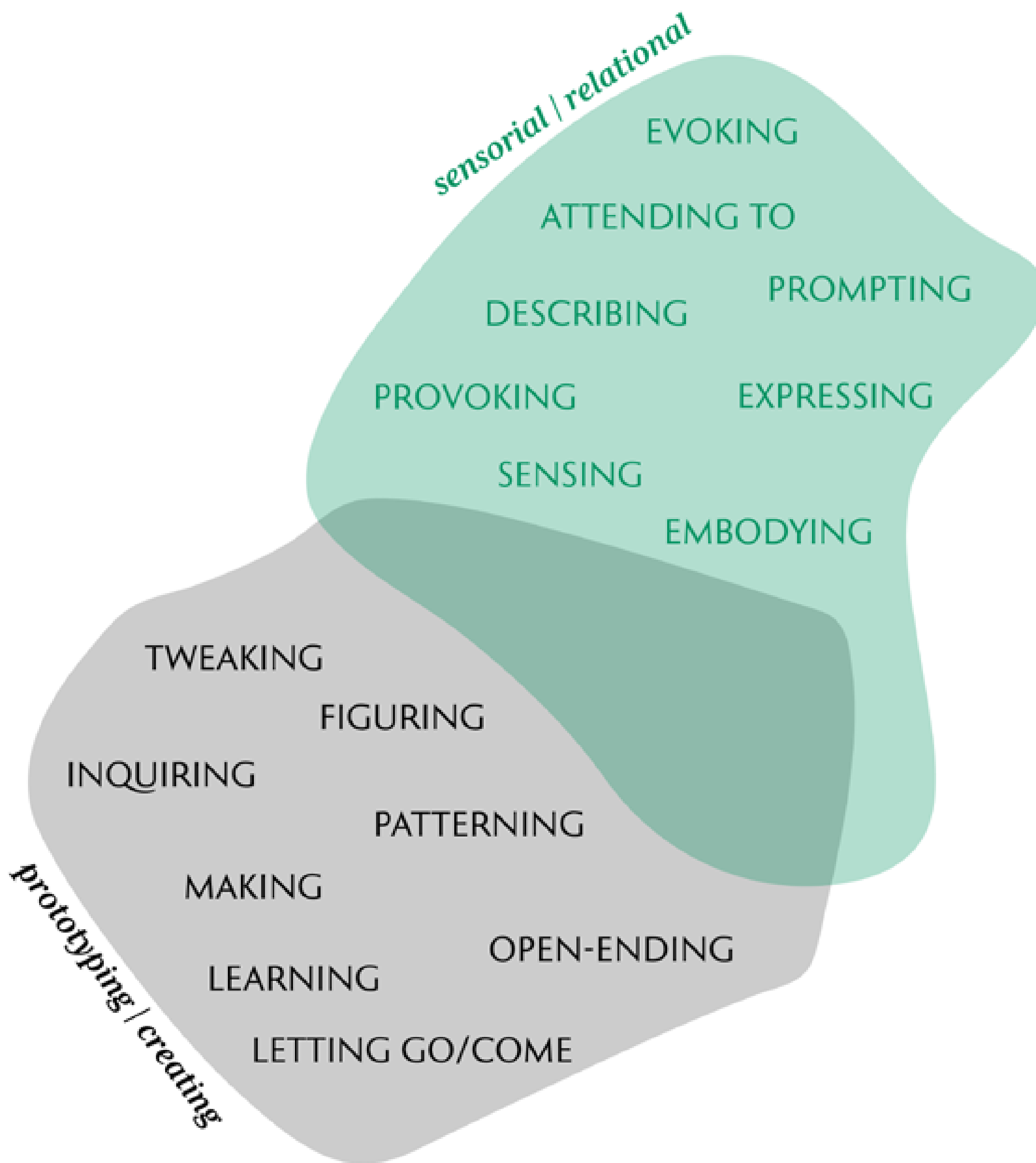


Fig.20: embodied, relational and creative design moves (Gonçalves, 2020).

1994). Therefore, I would not ask others to do something that I am not willing to try. The second reason is that to make changes in a system we need to work with ourselves because we are not separate from the system[83] (Auckland Co-design Lab, 2022; Böll & Senge, 2020; Hanh, 2017). Therefore, working with oneself in concert with working with others is a lever for systemic transformation which counters the notion of always trying to force change on others (people, situations, places) (Hayashi & Gonçalves, 2023).

3. Awareness-based prompts

The word *prompt* refers to assisting, encouraging causing or bringing about (an action or feeling). In this PhD, I introduce awareness-based prompts as non-intrusive sensitizing tools to support individuals (including oneself) to attend to and become aware of non-verbal and embodied experiences. I argue that the prompts can take us on a path to investigate and communicate tacit and experiential knowing (Grocott, 2022). Therefore, provoking and assisting the emergence of awareness and sense.

I design awareness-based prompts to help people maintain attention states of both focused and open awareness at different times during a learning activity[84]. By focused awareness, I mean bringing one's focused attention to an object—which could be physical and tangible; or ephemeral and intangible (e.g. a belief, thought, emotion, felt sense or even the sensations in their bodies) (Kabat-Zinn, 1994)[85]. By open awareness, I mean keeping a panoramic perspective—that is, as if our mind was like the sky and our thoughts, ideas, emotions, feelings were like clouds. This way, open awareness is a form of attending to ourselves that recognizes the forming, passing, and transitioning nature of our experiences (Hanh, 2008; Siegel, 2007).

The understanding of open awareness allows us to take relationality into account and notice the quality of the relationships in a group—that is, in the social field. To notice the social-relational quality of a field, one must keep an open awareness (Scharmer, 2009). When facilitating embodied activities, Hayashi (2021) often asks people to

83 In an online lecture, Dickie Humphries looked at the individual/societal transformation through an indigenous and decolonial lens. He asked "What is the system's starting point for change? And what is our starting point for change?" Humphries argues that the illusion of separation between ourselves and the (social, natural) systems is a colonial mindset. How do we break away from this illusion of separation? How might we join together myself and others? "How might we meet in the middle of this apparent gap of separation?" (Auckland Co-design Lab, 2022). He concluded that "our relationship with the system is not one of domain and control"—it is, instead, one of "interdependence and non-separation."

84 I believe this sense of being open and focused connects with Reggio-Emilia schools' pedagogy of listening—which emphasizes openness and curiosity towards our experience and a kind of listening which is not only done through our hearing "but with all senses: seeing, touch, smell, taste, orientation" (Rinaldi, 2009).

85 In Eastern traditions, focused awareness tends to begin from a noticeable fact in one's immediate experience—for instance, noticing one's breath, or the simple sensations in the body (Kabat-Zinn, 1994; Siegel, 2007).

relax into the space. In a group, open awareness can feel like a sense of relaxation, of being available to one another in that very moment.

When looking back over my reflective notes, I found a *figuring* sketch (accompanied by a postcard) that describes my understanding of open awareness from the perspective of an individual[86]. I sketched the individual as an amorphous shape, but where they are not closed in on themselves (i.e. locked in their worldviews, opinions, emotions). Instead, the individual is porous (Hayashi, 2021). By porous, I mean open and available to one's environment and to others. Underneath the sketch, I had written: "You have to be there, but it is not you".

Cultivating the quality of our attention allows us to return to ourselves, to things themselves, to phenomena—and ultimately to the birthplace of our ideas, notions, feelings, and meanings (Depraz, Merleau-Ponty, 1945; Varela, & Vermersch, 2003). By returning to ourselves and others, we counter the habit of trying to get rid of our experiences, particularly the difficult thoughts and emotions (Chödrön, 2003; David, 2016). By turning our attention towards our experience, we let it come forth. This way, I design prompts to help people attend to and stay with meaningful aspects of their lived, subjective, non-verbal and relational experience(s).

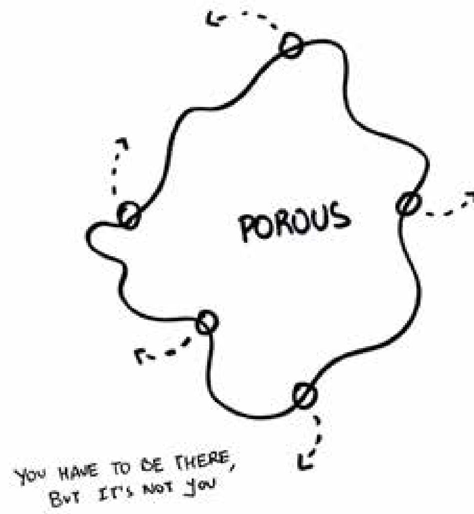
Once people have experienced moments of focused and/or open awareness, they then reflect on their experience by sharing what they noticed. A common way to do so is by asking people to complete sentences. For example, in some activities, people are asked to reflect on their experience by saying: *I did… I saw… I felt…* By placing the I at the beginning of the sentence, I emphasize the importance of returning to one's own experience, rather than projecting onto others what theirs ought to be.

The awareness-based prompts include combinations of photographs, videos, objects, drawings, metaphors, embodiment, and writing. In working with different forms of embodiment and materiality, I make a distinction between the prompts that are 2D (e.g. drawings, writing, photographs), 3D (e.g. objects), and 4D—i.e. referring to our body (three-dimensional) moving across time and space (Hayashi, 2021).

As opposed to human-centered design research, the tangible, embodied and material prompts are not empathy-based because I believe such discourse on empathy (Chapman & Light, 2018; Desmet & Hekkert, 2007) is a form of othering. To be empathic means to think or feel from the perspective of another person. But is it really plausible to base my research on people's capacity

86 I borrow the term *figuring* from Grocott (2010): "a designerly way of drawing, emphasizing how the visualizations operate as performative research artifacts" (p. 67).

Fig.21: Figuring sketch from personal diary. Postcard image by Kansallisgalleria (Kiasma, Helsinki).



"To understand is ultimately always to construct, to constitute, to bring about here and now the synthesis of the object."

—Merleau-Ponty (1945, p. 751)

for doing that?[87] From practice, I have observed that when asked to be empathic, people often default to ascribing their opinions and judgments onto others (Gonçalves & Hayashi, 2019; Zembylas, 2018). Personally, it has been a rare experience to find someone with a real depth of skills that empathy requires. Therefore, in this PhD I choose to rely on subjectivity which considers the interdependence of one-another—yet, focuses on the person's own description of their experience of a situation[88].

The important distinction here is that a human-centered designer might bring empathy to others in the context of designing a service or product—while the focus of my practice has been to work with people to bring awareness to their own lived experience. Therefore, it is not just a critique of empathy but a shift that proposes a dematerialised practice and a simultaneous focus on oneself/others in the system.

My choice of redirecting people's attention to their own subjectivity is based on the belief that people's inner worlds are very rich—and therefore, the role of the prompt is to surface this richness of perspectives, interpretations, meanings, feelings and senses. In the context of running embodied learning exercises with people, instead of guessing or imagining what others think and feel, people are asked to share what they think and feel.

It is important to notice that the prompt is not an object of education—i.e. an object to be studied by itself for the sake of acquiring knowledge. I agree with Rinaldi (2009) when she says that a prompt is a relational site, that is, the relational context which is born out of the reciprocal curiosity between subject and object. This way, prompts make soft demands or solicitations for subjects and objects to meet one another (Rinaldi, 2009). Therefore the subject must bring themselves to an encounter, they must be willing to step into a vulnerable space of accessing their thoughts, beliefs, values, feelings and emotions[89]. Prompting can then become dialogical, affective, and poetic (Rinaldi, 2009).

As discussed in section 1 of ACT I, the prompts are designed to be intentionally open, ambiguous, playful and subjective—hence, often revealing rich, diverse, surprising

87 Here I am speaking to my own research which is primarily addressing a field which is intangible, embodied, subjective and yet relational—therefore, often vulnerable.

88 There are different ways this shows up in a prompt. For instance, I avoided using the word empathy or asking people to 'put themselves in the shoes of someone else'. Instead, I asked workshop participants to experience something or evoke a memory of a time they had experienced a particular emotion, thought and/or feeling. The prompt then explored the subjectivity of their own lived experience—rather than what they imagined someone else might have felt.

89 In ACT III, I will trouble this notion—based on practice observations that people often resist stepping into vulnerable spaces (which is a premise for the success of the prompt).

and unexpected insights (Gaver, Dunne & Pacenti, 2003; Gaver et al., 2004; Koskinen et al., 2011; Mattelmäki, 2006). In this PhD, I intentionally design prompts to allow for multiple interpretations, to hold space for ambiguity, to inspire and motivate people to relate to them, to engage the senses, to allow for a variety of modes of expression, and to foster collaborative making and sharing of reflective insights (Koskinen et al., 2011; Sanders & Stappers, 2014).

3.1 Working with the relational self

Our subjective experience is a rich site of inquiry. I personally enjoy swimming in the waters of the inner world. I often observe my mind wavering (up and down), even though noticing my own experience (i.e. suspending judgments and stories about it) is itself a hard task. At times, I notice how unsettled I feel and I observe what it would take to stay with it (Chödrön, 2003)[90]. The experience of staying with, whatever it is, has certainly been a core inner capacity I have learned to grow over time (and continue to do so).

From collaborating with Buddhist choreographer and embodiment expert Arawana Hayashi, I have learned that we can relate with ourselves in simple, direct ways by appreciating, for example, our everyday experiences—i.e. the ordinary acts of living: cooking at home, walking the dog, listening to a friend, riding the subway, or drinking a cup of coffee. These acts can be filled with simple presence (Hanh, 2014; Hayashi, 2021; Suzuki, 201; Trungpa, 1996; Yongey & Tworkov, 2014).

At an inner level, working with myself means relating to my subjective experiences: thoughts, emotions, felt senses and sensations. By bringing the principle of ordinariness to heart, I practice not to create special stories around my lived experiences—and, instead, attend to them as natural parts of being human (Chödrön, 2003). At times, I have tried awareness-based practices that have been recommended to me but did not work for me. Other times, I have used practices which turned out to be more natural for me and to which I gravitated.

Consequently I shall start this section by introducing awareness-based prompts that I have primarily used on myself as a way of developing and cultivating embodied awareness. I (attempt to) practice these exercises at home regularly. As an individual, I recognize that I am always a part of social-relational fields—that is, groups and social systems. Therefore I refer to these exercises as methods for working with self within a social field[91].

90 Studying the teachings of Buddhist nun Pema Chödrön for many years has taught me the importance of suspending stories around my experience (i.e. what I think about it) and welcoming the direct felt experience of it.

91 Although these are methods that I primarily use with myself, I have also adapted or drawn from them to create awareness-based prompts for groups. For example, when working with others, I have referenced some of these practices at the start of a session as a way of priming myself and the group; at the end, as a way of making sense of what happened; and/or

Below I outline what the prompts are—drawing on a paper I have co-written (Diatta, Gonçalves & Grocott, 2022)[92], and on reflection notes (field notes and personal journals). Ultimately, these are practices that help me show up by staying true to myself and reminding me of attuning to the emergence of each moment.

My intention though is not to offer a practice guide to all of these prompts, but to simply outline their functioning so you (the reader) can have a deeper insight into me as a whole person—as well as an example to how one may work with self through awareness-based prompts. This way, how I work with myself then becomes the background context to the work with others (which I shall introduce in the next section).

20-min Dance

The 20-min Dance is an embodied exercise I learned from Arawana Hayashi (Hayashi, 2021). It is, by far, one of my most transformative personal practices. It basically includes lying down on the floor—and over the course of 20 min, allowing the body to move where it wants to go. The movement should, however, be interspersed with stillness. In this way, I learned to appreciate gaps, pauses, and intervals. Through my embodied presence, I realized that from stillness, movement arises (Hayashi, 2021). From lying down, I transition into sitting postures and end by standing up. The 20-min Dance offers my body the main stage—and I can leave my thoughts aside for a moment. On occasions I felt overwhelmed, lying down was an effective, kind and self-compassionate act that often brought me back to a sense of groundedness.

(Haiku) Poems

By practicing the 20-min Dance, I was inspired to use poetry as a way of expressing embodied insights in verbal language[93]. By the time I finish a 20-min Dance, I immediately pick up a notebook and write down a short haiku poem. As I connect to the freshness of my experience, words come to mind—and I jot them down as a sequence of three phrases. Over the years (alongside the PhD), I have kept a personal notebook with these short poems, a few of which I share below. I believe the poems gently capture an essence of the embodied experience. Every time I read them, I remember and feel once again some of what I previously experienced.

interspersed throughout an intervention as a way for the group to attune to themselves individually.

92 A Family of Sensibilities: Toward a Relational Design Practice Grounded in Materiality and Embodiment. Journal of Design & Culture (https://doi.org/10.1080/17547075.2021.2018539).

93 I have also used these short poems as a method for synthesizing embodied tacit insights. Together with a PhD colleague, Myriam Diatta, I interviewed a group of six creative practitioners on how materiality and embodiment show up in their work. We then wrote poems—forming sentences from their own words. We organized the poems around five families of sensibilities—i.e. ways of being a practitioner, ways of understanding and deciding, ways of working with the materials, ways of being with, and ways of moving across/through/to/between the small and large. (Diatta, Gonçalves & Grocott, 2022).

Fig.22: 20-min Dance practice, São Paulo, 2019.

racing through a morning,
jumping over gaps,
beware!

cold walls
go with the wind,
on the verge of crying.

a sea of thoughts
touch fear,
under the waves.

pain, resting pain,
lives in the body,
still.

clouded in thoughts,
wandering in a fog,
stillness whispers.

clarity rises
on the horizon:
come back!

lying on the ground,
strength comes,
pushing me out.

—Haiku poems (2018-23).

Stuck

The Stuck is instead an embodied practice that helps me lean into a situation in which I feel stuck (Hayashi, 2021). The Stuck is a rich site of inquiry and discovery—because it holds the very seeds of wisdom and of healthier conditions (Hayashi, 2021)[94]. I start by bringing to mind a situation in which I feel stuck. The situation can be an inner (e.g. a difficult emotion or thought) or outer experience (e.g. a work relationship, a dispute in a group, or even a larger systemic problem) (Hayashi, 2021). I then attend to the felt quality of the situation, leaving the storylines aside for a moment. I watch as the felt quality takes form through an embodied posture[95]. Once the embodied shape is present, I stay in it for a few moments allowing a short gap until some words come out. I conclude by making a sketch. When practicing in groups, I ask others to take a photo of my Stuck shape—which I later use to evoke the experience.

Looking back at my reflective notebooks and diaries, I find countless sketches and polaroid photographs of embodied Stuck shapes. One such photograph says the Stuck is called "Forces at Play." On the left page, I see notes explaining elements of how the Stuck felt. The Stuck shape is at ground level. I see the Stuck tries to go forward (future) but is held back (past). The notes say my legs feel tight, and my body is unbalanced and strained.

I have learned I can do this exercise anytime I am in trouble. Sometimes, I am sitting at my desk and feel the urge to get up and embody a Stuck shape. Or I might be facing a difficult situation and wish to explore it from a different perspective. The Stuck is a practice that truly honors the intelligence of the body (Hayashi, 2021) because it is not a problem-solving method like most reasoning and cognitive approaches (Hayashi & Gonçalves, 2023). Instead, the Stuck often brings me closer to my experience and opens up unexpected paths forward.

Figuring Sketches

Over the past five years (alongside this PhD), I have kept, at least, twenty different reflective notebooks. These diaries are where I sketch rough thoughts which are not meant to represent finalized ideas[96]. Instead, they help me make sense of an emergent reality while acknowledging that things will change soon. The times I feel most confused are the times I sketch most. I refer to these as figuring sketches in reference to Grocott's notion of *figuring* (Grocott, 2022): "a creative method conceived to amplify the backtalk of designing in the service

94 The Stuck is not ourselves—that is why I refer to the Stuck as *it*.

95 Here it is important to notice that the Stuck shape is not a representation of a situation or feeling. It is its *embodiment* itself.

96 I have also used figuring sketches to make sense of difficult emotions. I notice I gain clarity simply by sketching the elements of the situation I am in (and their relationships)—therefore, helping me shift the quality of my emotions.

of evolving one's understanding of a situation" (p. 63).

Other practices

There are quite a few other exercises I practice for working on/with myself (within social-relational contexts). Some of these include: setting personal boundaries[97], intentional rest[98], mindfulness of breath meditation (Hanh, 1994; Kabat-Zinn, 1994; Yongey & Tworkov, 2014), open awareness meditation (Yongey & Tworkov, 2014), physical exercising (i.e. beach volleyball and biking)[99], meaningful friendships—i.e. *woes*[100] (Brown, 2017), honoring and respecting my own well-being, listening to music (or sounds), spending time in nature, and cultivating awareness of change.

It is important to say these are all practices I attempt to cultivate. I acknowledge the privileges of currently having the time and space to pursue them—even though at times, I fail to do so. When this happens, I am reminded of their importance and assert (to myself) that they are the embodied foundation of all that I do.

3.2 Working with groups

I designed awareness-based prompts to fundamentally make something visible or tangible. Making tangible enables what Ackermann (2007) refers to as an act of distancing—that is, the prompts facilitate an outward projection, and by externalizing our thinking (and feeling), these become accessible and manipulable. I agree with Ackermann (2007) when she says that temporary distancing is like a paradox because by making something exterior, it becomes easier to re-engage at an intimate level. Put more simply, "we objectivize our experience to better understand it. We project it to better internalize it" (Ackermann, 2007, p. 03).

Ackermann (2007), for instance, speaks of how reading is different from writing—because writing leaves an observable mark thereby rendering the invisible visible, whereas reading is a silent act. By designing prompts that use different modes of learning (e.g. body, materials, language, metaphor and memory), my intention has been to increase the power of expression of educators and learners (Ackermann, 2007) and their ability to make a

97 In *Set Boundaries, Find Peace,* Tawwab (2021) outlines the importance of understanding and setting boundaries with others (and ourselves). Her work has influenced my understanding of what boundaries are, how they function and what I can do—which has enabled me to set clear boundaries in my own relationships, and free up my time to dedicate to what matters to me (meaningful dialogues, working on this PhD, etc.).

98 I learned from my therapist Sangeeta Bhagwat (https://serenereflection.wordpress.com/) to cultivate intentional rest. That is, deciding for myself that "now I am going to rest" (e.g. sleep, lie down)—and being aware that I am intentionally doing that. Sangeeta told me that such awareness is itself an act of deep rest.

99 My hometown (Vitória, Brazil) is an island with a beautiful sea and mountains. Playing beach volleyball (as an adult) is one of my favorite hobbies—as it takes me back to my memories as a teenager. While running on the sand is an intense exercise, playing volleyball is also deeply restful at an inner level.

100 That is, "people with whom we work on excellence." Here, Brown (2017) refers to those friends with whom we grow together—co-evolving over time.

Fig.23: Personal diary with sense-making notes on the Stuck "Forces at Play" (April, 2018).

Fig.24: Figuring sketch (February, 2019).

mark. In this way, I find resonance in (and am inspired by) the Reggio Emilia approach that emphasizes that children have one hundred languages" (Rinaldi, 2009)[101]—that is, children can explore, find and express sense through a multitude of ways.

According to Rinaldi (2009), the transition and combination of these different languages is what creates and consolidates sense. While Sumeracki (2020) refers to the reinforcement of memory as *dual coding*[102]—that is, combining two different modes of inquiry (e.g. words and visuals) provide different representations and, therefore, help students understand the information better.

I wish to go further than Sumeracki (2020), as I not only explore the combination of visual components and language, but also the use of embodiment and photography; or verbal language and sketching, and so on. I refer to these as primary and secondary modes of prompting. In some cases, I use a tertiary mode. For example, a group of people may be asked to embody a gesture (primary), then take a photograph (secondary) and finalize by giving a word to each other's photographed gestures (tertiary).

It is important to notice that researchers in the field of multimedia learning have emphasized the role of combining multiple modes of learning in order to enhance memory retention (Clark & Mayer, 2016; Mayer, 2014; Mayer & Arroyo, 2014; Paivio, 2007). In my PhD, however, my intention is not to use multiple forms of media to support learners retain information. Instead, I bring multimedia to transformative learning in order to support educators and learners to access and become aware of inner and outer dimensions of their lived experiences. This way, enabling individual shifts within social-relational systems. How can the combination of multiple modes of inquiry then enhance transformative learning? Does combining three or more modes afford *triple encoding* of new memory traces?[103] What role does embodiment play in shaping new forms of thinking, feeling and acting?

Another function of the awareness-based prompts is that they not only permit something to be made visible, they also allow documentation of a learning process—by recording on external supports which can then be preserved. The heuristic function

101 I believe we can say adults also have "one hundred languages". However, as Malaguzzi (1996) writes it, "the school and the culture separate the head from the body", therefore "they steal ninety-nine." In that way, many children grow into becoming adults that rely on one language—which is often verbal and rational.

102 Dual-coding is not the same as learning styles (e.g. verbal, visual, auditory, and kinesthetic). Sumeracki (2018) argues that learning styles are flawed because they mislead learners into thinking they can only learn in a certain way (e.g. reading versus using their bodies; or making tangible objects rather than discussing a topic).

103 Or does it generate confusion and overwhelm? Researchers have referred to cognitive load as the overwhelm caused by introducing too much information. In such cases, cognitive load impedes learning (Paas & Van Merrienboer, 1994; Sweller, 1994).

Fig.25: a personal tattoo inspired by Sonali Ojha's work (Ojha, 2006)—hopeful yet consistent awareness of change.

"You can always begin again"

Sonali Ojha's philosophy of agency and change has infused the Lighthouse programs (https://punecityconnect.org/lighthouse/). The main idea behind their programs (which Sonali helped to develop) was the notion that "you can always begin again." In working with marginalized Indian youth, this sentence brought vitality and genuine significance to a learning program.

of the prompt is precisely "to temporarily fix or freeze" an aspect of our experience "in order to better manipulate it" (Ackermann, 2007, p. 03). In this case, what is documented is not the object itself (e.g. a photograph, a sketch, a gesture) but a process or a path of inquiry (Rinaldi, 2009).

To document serves however, not only to register a learning path—but also to make learning possible (Rinaldi, 2009). This is because each time we re-engage with the documentation, it becomes an object to think with (Ackermann, 2007). The value of documentation relies on its ability to re-evoke meaningful aspects of our experience—therefore offering possibilities for reflection (Rinaldi, 2009). This way, documenting serves what Rinaldi (2009) refers to as a research for sense. In the specific case of education, documentation is what then allows the assessment of a learner's experience (Rinaldi, 2009).

4. Research Design

The research design includes experiential workshops—that is, facilitated sessions where the awareness-based prompts were introduced and used. As a way of stepping outside my own subjective experience and understanding how the experiences are being understood by others, I used qualitative surveys at the end of every workshop (Appendix 5.1). I also interviewed a proportion of the participants using an adapted version of micro-phenomenological interviews (Petitmengin, 2023, 2006)—which I refer to as *Moments of Experience* (Appendix 5.2, 5.3 and 5.4). Through this research, I ask: what are the prompts making us aware of (both during and/or after an encounter)? And how are we made aware of this? In chapter 2, the Workshops A and B will explore these questions.

This research has been approved as low-risk. The surveys were kept anonymous and the interviews were de-identified once insights were coded. The workshop participants also had the choice of offering or withholding the documentation of their awareness-based prompts. For instance, they could choose not to offer consent on the use of material artifacts they made and keep those for their own learning record. The participants reflected on general low stakes daily happenings in their contexts—within their class, community and/or school environment. I recognize that, at worst, there could be some discomfort when asked to engage with more vulnerable personal or group issues. I discussed that if challenging emotions or insights emerged, we would offer support and a safe holding space.

Research Inquiries	Methodologies	Methods
(I) How to make the intangible experiences that occur during transformative learning visible? And what intangible experiences are made visible?	Practice-based design research; Phenomenological research	Awareness-based design prompts; Experimental workshops;
(II) How does making intangible experiences visible support transformation of individuals and groups?		Qualitative surveys; Micro-phenomenological interviews (i.e. *Moments of Experience*)
(III) What are the implications of bringing embodied awareness to design within different contexts of practice (i.e. research, teaching and consulting)?	Reflexive first-person writing	Practice narratives

Table 4: Research methodologies according to inquiry.

Appendix I: Survey

Title: *Making Aware: Designing to Make the Intangible Visible*
Ricardo Dutra Gonçalves
Supervisors: Lisa Grocott, Cameron Rose, Rowan Brookes
WonderLab, Monash Art, Design, and Architecture. Melbourne, Australia

Research Question: How do awareness-based prompts help make transformative learning visible for educators? What do different prompts afford?

Survey

1. Demographics: grade/ country/ gender/ age

2. In a scale from 0 (lowest/not useful) to 5 (highest/very useful), to what extent did the awareness-based prompt (listed below) assist you in becoming aware of your experience?

prompt	*0*	*1*	*2*	*3*	*4*	*5*
Prompt 1						
Prompt 2						
Prompt 3						
(Other)						

3. For the prompt that was used in your workshop, what insight shifted for you?

4. How did the prompt shift something for you?

5. During your workshop, what surprised you when using the prompt?

6. What were the qualities of the prompt you enjoyed?

7. What were the qualities of the prompt you did not enjoy?

8. From everything we did in the workshop, what would you say is your greatest learning?

9. From everything we did in the workshop, what would you say it is something you could continue using as an educator?

10. What would have made the prompt used in your workshop (listed below) more helpful?

11. What other prompts do you think would be useful?

Appendix II: Pre-interview Template

Pre-interview template

At the start of the interview, the interviewer hands out the pre-interview template to the interviewee—who must recall and write down three meaningful moments of their workshop experience.

-

Please recall and write down 3 key moments when you used an awareness-based prompt. Those must be meaningful moments to you from the day when we met for the workshop. Describe: how did the moment begin? How did it end?

	moment	how it began	how it ended
1			
2			
3			

Appendix III: Interview Notes Template

Interview notes template

	phase	description	question
1			
	sub-phase 1.1		
	sub-phase 1.2		
	sub-phase 1.3		
2			
	sub-phase 2.1		
	sub-phase 2.2		
	sub-phase 2.3		
3			
	sub-phase 3.1		
	sub-phase 3.2		
	sub-phase 2.3		
4			
	sub-phase 4.1		
	sub-phase 4.2		
	sub-phase 4.3		
5			
	sub-phase 5.1		
	sub-phase 5.2		
	sub-phase 5.3		

Appendix IV: Moments of Experience

Moments of Experience (interview template)

Title: *making Aware: Designing to Make the Intangible Visible*
Ricardo Dutra Gonçalves
Supervisors: Lisa Grocott, Rowan Brookes & Ricardo Sosa
WonderLab, Monash Art, Design, and Architecture. Melbourne, Australia

Research Question: How do awareness-based prompts help make transformative learning visible for educators?

Semi-formal Interview

(30-40 min each)

Beginning

Here are some printed images of the awareness-based prompt we used in the workshop you participated in. I suggest you go back to your memory of our workshop session using this particular prompt. And write down three moments from the workshop that were significant for you. I would like you to think of the moment as if it had a beginning, middle, and end. This moment might be when you noticed something you were not aware of, a moment of surprise, or a sudden discovery or insight. When were they? Please write them down.

Thank you for writing them down. To begin, I will suggest the moment X for us to explore further in this interview. When was it? Where were you?

(X - moment using the prompt)

_

Questions to Clarify the Chosen Moment

Visual question: when you were there at that moment, what do you see?

Kinesthetic and emotional feelings: at that time, what is the position of your body? What are you feeling? Retrieve the bodily sensations and the emotions…

Beginning of the chosen moment: how do you know how to begin? How do you start? What happens first? (questions could be one of these three)

Sequence of the chosen moment: what do you do then?

End of the chosen moment: what happens at the end? What do you end with?

Test: did the prompt help you know when it was finished? And when you don't know, what do you know?

Appendix: Moments of Experience

Questions to Deepen the Chosen Moment

Could you come back to X? When you do X, what do you do? How do you go about doing X?

Could you come back to this feeling / sensation? And when you feel this, what do you feel? If you had to teach me how to feel it, what would you tell me?

How did the prompt shift something for you?

_

Ending of the interview
Please come back to this moment. Thank you.

Chapter 2: Workshop A

As I begin writing this chapter, I can almost hear Sonali Ojha's voice. I met her, then an Ashoka Fellow and founder of Dreamcatchers Foundation, an education NGO in Mumbai (India) ten years ago. She mentored me and was my friend for many years. At major thresholds in my life, Sonali taught me the value of opening space for paradox, embracing not knowing, and attuning my senses to what wants to emerge. The work outlined in this chapter comes from a series of experimental workshops Sonali and I co-designed and co-led for teachers at a private school in Mumbai in early 2020. The workshops were intended to help teachers explore the social-emotional environment at their school by tuning in first to themselves and then to others[104]. In July 2021, Sonali passed away. Her loss/departure/disappearance has left a gap, pause, open, unfilled, blank space which continues to be present.

The ways in which Sonali and I co-designed work followed a pattern. I often had no idea what we were about to be doing. In our first collaborations, Sonali would bring a full embrace of not knowing. Meanwhile, I would bring a restless wish to organize and structure. I would travel from Brazil to Mumbai to work with her but upon meeting we would spend hours looking for delicious meals, having open conversations or remaining in silence, as if we were waiting for something to arrive. The blank spaces, silences, pauses were the primary texture of our encounters. I learned from Sonali that staying with an open space means embracing the value of not knowing—and staying with not knowing is a skill which we can grow.

In this chapter, I explore how to make the tacit, ephemeral, paradoxical dimensions of emotions visible. I consider emotions to be primarily non-verbal experiences which are embodied (i.e. manifesting in our body-mind system) and relational (i.e. taking place in relationships with others).

In the context of transformative learning (TL), making embodied and relational experiences visible is important because it helps us become aware of these and make sense of them in a fresher way (Dewey, 1938; Greene, 1985; Kolb, 2015; Mezirow, 1991; Prochaska & DiClemente, 2005; Reason, 1990; Varela, 2003; Vermunt, 2003)—which will permit deeper learning. By deep learning, Sonali and I focused on how educators (and therefore students) learn to make meaning for themselves (Chickering & Gamson, 1987; McTighe & Harvey, 2020; Merriam, & Bierema, 2013; Mezirow, 1991; Rinaldi, 2009) and move towards transformed behavior (Mezirow, 1991; Prochaska & DiClemente, 2005).

In Mumbai, we worked through the lens of the school as a place of learning where teachers both teach and learn at the same time. We

104 We were invited to run these workshops by the principal of R.N. Podar Santacruz (Mumbai, India), Avnita Bir. I met Avnita through Sonali a few years before—and was impressed by how open and interested she was in design-led and whole-education approaches. Avnita came across as someone who was willing to try things out and who cared for teachers and students.

shared with the teachers our belief that the current school system needs to be made more human (Dewey, 1938; hooks, 1994; Kohn, 1999; Noddings, 1984; Palmer, 2007; Rogers, 1969)—that is, what the teachers and students feel, value and believe needs to be at the forefront of their learning.

1. Research design

Experiential workshops

We hosted 4-hour workshops over a week with four groups of twelve K12 teachers. These workshops combined two learning pathways: 1) asking the teacher to notice their own personal experience (journey, self-exploration, values, who they are); and 2) directing their attention to the relational world of the children (i.e. how they might learn by exploring this world).

When designing these workshops we asked ourselves a series of open questions (Appendix I), including: how can a teacher build self-awareness about their emotions and mindsets? Where can a particular emotion take us? Are there any opportunities for different responses to an emotion? These questions were not meant to be answered—but simply stated to provoke thinking, to seed a creative intentional space and to discover the terrains that the experiential workshops could cover.

The workshops were designed iteratively—that is, we did not prepare a single workshop and repeated it with all groups. Instead, after asking ourselves questions to explore our core intentions (Appendix I), Sonali and I met to sense where to start from in the first workshop. That is, what embodied activities would we include? What tangible and material elements would we choose to try out and explore? How should we help teachers reflect and apply their insights and discoveries?[105] After running each session in the morning, we spent the afternoon discussing what we learned and pivoting to a new workshop direction for the following day. The workshops ended up becoming very different—and some teachers even approached us afterwards to say how they wished to have participated in all of them[106].

Awareness-based prompts

As discussed in the previous chapter, the main role of the prompts is to sustain an open inquiry while helping surface intangible experiences. We decided to introduce at most two design prompts in each workshop—as a way of keeping the workshops focused around

105 These questions emerged during our creative meetings prior to the workshops—and they contain a core belief to this PhD: design can help us ground personal and collective intangible experiences in tangible, visible forms. Therefore, we considered both what embodied activities would help surface the teachers' beliefs, feelings and thoughts around emotions at the school.

106 In my practice, I believe that to create a generative space (e.g. a workshop), we need to sense into the needs of a situation and be in constant dialogue with that situation. Therefore, what we end up creating is never prescribed. Instead, it unfolds from conversations, intuitive hunches and moment-to-moment prototyping of options.

a limited range of materials/modes of inquiry. The prompts included imagery, photographs, drawing and embodiment[107].

It is important to notice that these prompts were not pre-designed months before and brought into this context. They emerged from my creative interactions with Sonali—and were designed in response to the needs of a particular day (based on intuitive hunches, our own expertise and learnings from the previous day). Therefore, the prompts are the result of an emergent and generative creative process—and are not intended to be interpreted as finalized tools or products.

Images (Navarasa Cards)

We designed the Navarasa Cards as a set of nine cards based on the Indian classic dance Kathakali (Gopalakrishnan, 2016; Zarrilli, 2012)[108]. In this art form, the dancer's facial expressions vary and are associated with different clusters of emotions. We asked the teachers to choose up to three cards individually, and to go to a place within the school to observe the students' facial expressions and embodied behaviors.

The teachers filled in their observations on the back of the card: *"When I saw… I felt..."* On the front, they marked the intensity of the emotions they perceived. When they returned, they co-created an emotional map of the school—specifying the emotions they had noticed and where they had observed them.

Photographs

We relied on photographs to elicit, evoke, and capture moments of people's experience. The awareness-based design prompt asked the teachers to embody the facial expression of the Navarasa Cards and have a partner take their photograph. Once all the teachers had embodied multiple facial expressions, the photographs were collected and shown to the group. After this, the teachers shared what they had noticed.

Drawing

The teachers were handed a list of questions representing all the Navarasas. In pairs, they interviewed one another about their emotions. The questions were interspersed with drawing. After every cycle of asking and listening, there was a short gap in which both teachers drew in silence. This process was repeated until all the Navarasas were complete—the final drawing represented a landscape of emotions.

107 Embodied activities included, for example, asking teachers to work on their quality of attention by doing stillness and breathing exercises, using improvisation and/or engaging in movement-based action such as performing a task, taking part in an embodied task or a group ritual.

108 The Navarasas include: Love (Shringara), Compassion (Karuna), Rage (Raudram), Humor (Hāsyam), Fear (Bhayānakam), Courage/ Willpower (Veeram), Awe/Wonder (Adbhutam), Peace (Shantam), Aversion/ Disgust (Bībhatsam). To these, we added *Hope*—drawing from the work Sonali (co-author) has done in India for over 20 years.

Embodiment

Material resources are often limited in marginalized communities, but our bodies are our most immediate and available resource—so we used them as a prompt in our inclusive design[109]. We introduced the teachers to five embodied prompts. It is important to notice that all embodied activities are done in silence, as a way of redirecting our attention from spoken cognitive language towards noticing and tuning in to our bodies[110].

It is also important to clarify that the embodied activities we tweaked, generated and played with drew primarily from awareness and mindfulness-based practices (Hanh, 2014; Hayashi, 2021; Kabat-Zinn, 1994; Ojha, 2006; Rome, 2014). Therefore, the learning exercises are different from acting and/or miming because the participants are not asked to act out or represent something they are not—that is, something external to them (e.g. a character or a situation). Instead, our embodied prompts sought to emphasize people's quality of attention and ordinary presence. The primary request was that they turned towards themselves and one another, leaning into vulnerable spaces and staying with their felt experiences.

The first embodied prompt was an adapted version of a 20-Minute Dance (Hayashi, 2021). The teachers were asked to lie down and gradually get up in a standing position. Their movement was interspersed with stillness—so that they were always aware and mindful of their bodies.

The second prompt included warming-up exercises such as rolling on the floor which were designed to invite joy into the room and lift the group's mood and energy.

The third embodied prompt invited the teachers to improvise interactions between emotions, discovering how emotions interact and move forward towards emergent, transformed situations[111]. This awareness-based prompt addressed the complexity and paradox of how emotions never appear alone in one's body-mind experience (Davidson, 2012).

The fourth embodied prompt was named *Voices of the Emotions*. The Navarasas were written on pieces of paper and placed across the room.

109 Here, I am inspired to practice Escobar's notion of "designing for the pluriverse"—that is, I acknowledge that "Western-centric approaches often fail to take into account the diverse cultural, social, and environmental contexts in which design is practiced" (Escobar, 2018). Therefore, design must be grounded in the experiences, resources and worldviews of marginalized communities.

110 As well as to the bodies of other people in a space—that is, we are present to our own bodies and to the relational space of being with one another.

111 Standing in a semicircle, teachers were prompted to improvise. The request was that one teacher (at a time) would come to the front and embody an emotion (without saying what it was or speaking)—another teacher would then join and embody another emotion (in response and relationship to what was already there). As many teachers as they wanted could join the front of the room. When embodying an emotion, the teachers were not meant to remain static, but to move in response to another person's embodied shape. Therefore, the audience could watch the emotions interact throughout the improvisation.

Fig.26: Teachers picking up Navarasa Cards. Mumbai, India, 2020.

Fig.27: Teachers embody facial expressions and photograph one another. Mumbai, India, 2020.

The teachers were asked to move across the space with an awareness of the room and of one another. Once they had reached one of the Navarasas, they tuned into what that emotion had to communicate to them—writing it on a piece of paper.

The fifth prompt was an adaptation of the Field Dance (Hayashi, 2021) to explore how teachers could attune to the feeling quality of a shared space (such as the classroom). Classroom teaching is often about a teacher standing up while students are sitting down. In this awareness-based prompt, instead, the teachers were asked to sit in a semicircle. One person stood up at a time and walked from the sideways towards the center. Upon arriving in the middle, the person turned towards the group. In silence, all were asked to notice what the presence of one another felt like. We emphasized that everyone had to be considered, not just the person standing up.

2. Designing for the intangible

During the interviews (Appendix, chapter 1), the teachers were asked to choose one meaningful moment from the workshop which they then had to describe. Through guided introspection, we began by eliciting their sensorial memories (what the teachers saw, felt and heard) and gradually re-directed their attention to how they experienced that moment in time[112]. The chosen moments of four teachers are outlined in the appendix at the end of this chapter. These moments help us to dive into the teachers' lived experience at a very specific point in time. The tables demonstrate a way of recording their insights on a linear timescale.

I started this PhD with the understanding that design can help people ground intangible experiences in tangible and/or visible forms[113]—and that, in doing so, making visible helps us to become aware of the intangible (Depraz, Varela & Vermersch, 2003). Therefore, the prompts were primarily designed to make intangible experiences visible.

However, based on the interviews, the clustering of emergent themes revealed nuances in the act of making the intangible visible. That is, while designing to make the intangible visible, I discovered we also designed to **make space** for, to **make** ourselves **aware** of, and to **make sense** of the intangible. Here I draw inspiration from Grocott's Make Constellation (Grocott, 2023) as the way of framing the research insights—and in particular, highlighting and defining words that most resonate with my practice.

112 The micro-phenomenology interviews focus on redirecting the interviewee's attention from the what (i.e. context and data surrounding the experience) to the how (i.e. their actual experience) (Petitmengin, 2007).

113 Ackermann, 2007; Bollas, 2009; Cross, 2006; Diatta, 2015; Diatta, Gonçalves & Grocott, 2022; Gaver et al., 2004; Hunt, 2012; Mattelmäki, 2006; McEntee et al., 2016.

Fig.28: Teachers rolling sideways on the floor. Mumbai, 2020.

Fig.29: Teachers improvising how emotions meet and relate with each other. Mumbai, 2020.

Fig.30: Teachers walking across the room to "listen into" the Voices of the Emotions. Mumbai, India, 2020.

2.1 Making visible

When discussing the Images (Navarasa Cards), one theme which pervaded the teachers' reflections was the need to *look deeply*. One teacher shared that by looking deeply, we notice that "there are emotions under emotions". Others said that the cards made visible the fact that some emotions which they had initially thought of as conflicting could in reality paradoxically co-exist: "It made visible to me that in our school we can see happiness and joy; and, at the same time, anger and sadness coexisting". The teachers appreciated the evocative nature of the design prompt saying the images were "visually strong".

When the photographs were taken, the teachers noticed there was a moment just before the click when the embodied shape took form. The teachers noticed that it felt like the camera was asking them to pause and clarify how they expected their bodies to be seen. This way, the photographs helped the teachers make their emotions visible as embodied shapes—opening up new realizations, surprises and discoveries. When discussing the limitations of the photograph as an awareness-based design prompt, the teachers spoke of how difficult it was to capture the image sometimes because "one has to be quick to photograph an expression". They shared how they would have liked "to be in larger groups to discuss and reason" and "to see all photos and expressions, and not just the ones in their small groups". One teacher shared that she had difficulty embodying facial expressions because she thought she was "not very expressive".

Drawing as an awareness-based prompt helped the teachers to engage in deep listening. Although some teachers seemed preoccupied with the act of drawing itself, they discovered that the essence of the prompt was to listen. At some point, two teachers suggested going through all the generative questions to each other first—and then, having a pause for both to draw the emotions together (instead of iterated talking and drawing). At the end, the teachers placed their drawings on the floor and we silently walked around while contemplating them. The teachers shared how that moment evoked a feeling of "being in an art gallery" and that they enjoyed seeing their "drawing as if it was a work of art".

Through the embodied prompts, the teachers improvised how emotions could interact with one another in a constant state of becoming. The teachers began these embodied activities in pairs (duets) and evolved into groups of five to ten. As the size of the group increased, so the complexity of how emotions can interact and interrelate became visible.

2.2 Making space

The teachers reflected on how the images created space for care: "When I observed the students' emotions, I felt like helping them out or connecting with them". The range of interpretations made space for ambiguity. The teachers observed that one of their favorite qualities of the prompt was the opportunity to make new choices: "I enjoyed observing the cards and making a choice".

Just before taking a photograph, the teachers noticed there was a pause. In this pause, they recalled the bodily shape and facial expression of their students while playing in their minds what to do for the camera. The teachers then suddenly dropped thinking to make an embodied shape at the "immediate request of the camera"[114]. The moment after the photograph was taken, we noticed the teachers relaxed—letting go of the embodied shape, and returning to their normal selves. The teachers shared that taking photographs was a playful invitation to be vulnerable. In the space of a click, they found themselves "stepping into the shoes of their students and how they felt".

We initially framed the drawing prompt as an activity for "listening to each other's world". This way, the teachers were invited to make space for one another simply by suspending the habit of offering opinions or advice—and so becoming an empathic sounding board. The teachers commented on how this was a "different kind of space" from their everyday work routines. They emphasized how the drawing activity as an awareness-based prompt opened up "new ways of relating to each other and of getting to know each other".

When recalling their embodied experiences, the teachers spoke of "staying with" a felt experience: "We were meant not to speak but rather to tune in to the vibe we were getting"; "It is important to understand the unspoken words''. They then reflected on how staying with non-verbal experiences made space for what others were offering: "I had to accept what I receive from, and give to others" while simply "enjoying the presence of others".

2.3 Making aware

The teachers said that the cards made them aware of a range of facial expressions—therefore, realizing that "the school is full of emotions which are often overlooked". They said they became more observant, as if their observation skills had become more nuanced: "Initially, I had an impression of what emotions the children had, but the more I observed the more insight I gained into the emotional space experienced by them". Many teachers shared that they had "not experienced more than three or four out of the nine clusters of emotions on the cards"—which made them aware of their limited vocabulary for accessing, expressing, and sharing about their emotional lives.

The teachers also said that taking photographs made them aware of how they observed: "The time before making the facial expression for the photograph was really important for reflection on what I observed. The prompt made me more conscious of my observation". The photographs deepened their observation skills by making the nuances of how emotions can be expressed visible.

114 Photojournalist Henri Cartier-Bresson refers to "the decisive moment" to introduce the idea that taking a photograph is about presence, an affirmation, a sense of enjoyment in saying yes to the moment (Scott, 2015).

In addition, the teachers pointed out that "the photos had a candid quality"—evoking a sense of kindness, sweetness, and relatability in the group. Photographs often ask us to bare ourselves momentarily for the camera and bring us into a vulnerable space. The teachers realized an interesting discovery about the group as a relational space: "we become aware of a shared sense of humanity". They concluded that "to observe children's emotions can actually become a part of the school routines".

The embodied prompts emphasized a "sense of relaxation"—that is, the act of resting in simply being with one another. This made the teachers aware that the quality of being together in a school could be shifted and transformed. For instance, the school environment could feel light, present, relaxed or even enriched. The teachers became aware of the quality of their own presence in the space; and of the importance of cultivating the quality of the school environment. It became clear how important it is to create and maintain a relaxing space.

2.4 Making sense

Given the image cards were intentionally ambiguous, they did not provide a straightforward connection between an emotion and a facial expression. Hence, the teachers interpreted the cards in different ways. Noticing the differences in their interpretations, they reflected on how "people can misinterpret an expression as it may take time and effort to see from a different perspective". One teacher said: "the prompt made us think in different directions".

They appreciated the fact that the images offered "opportunities for making sense": "Although emotions are difficult to categorize into separate boxes, the cards gave us a method to begin from". On the other hand they felt the range of representations was limited: "Some emotions were not represented in any of the cards"; "I felt constrained by the number of cards to choose from". Some teachers felt that the cards were difficult to categorize and commented, "Even in a short span of time in the classroom, I could see a range of emotions and I find it difficult to identify a predominant one". Finally, they suggested adding a detailed explanation describing the emotions.

The marking scale on the back of the card helped the teachers realize that their "approach should vary" because "some emotions might be clear, others may be hidden, repressed or very subtle". One teacher said, "Marking the intensity on the card helped me see that even a mild expression can be important". They emphasized the importance of looking deeply and "not taking things as they appear".

Taking photographs prompted a feeling of curiosity in the room atmosphere. By playing with each other through embodying the different expressions, the teachers wondered: "There could be a hidden meaning in the expression and behavior of students". The teachers also reflected on how the

photographs felt more relatable than the card images: “Seeing a photograph, I could actually feel or sense the emotions of the others”; “I think the variation in interpretation is lesser as compared to the cards”; and “There was visual clarity because the photographs were the perfect expression”.

Observing the diversity of facial expressions, the teachers reflected on how their “perception can vary significantly” and that many times they “don’t pay enough attention, and hence interpret incorrectly”. Some, though, shared that the ambiguity in interpretation was their favorite quality of the prompt: “The variety in understanding and perceiving the emotions differed greatly and gave us an opportunity to discuss and reflect”. Finally, they reflected on the design prompt’s ability to promote sense-making through social learning: “Identifying my colleague’s expressions helped me learn about my students’”.

As the drawing prompt was intended as an exploratory process of sense-making, we shared with the teachers that there was no right or wrong way of drawing. Initially, we observed a tendency to prescribe meaning to their experience, and then to draw it. To counter this, we invited the teachers to explore meaning *while* drawing. Therefore, revealing unexpected associations and fresh meanings (e.g. “I drew a volcano and thought ‘I will erupt like a volcano’”; “I drew fear like an ameba because amebas are always changing their shapes”); and learning edges (e.g. “I had a difficult time answering the questions, yet it seemed like a good struggle”; “I felt confined, agitated (...). What others will think of me? They won’t understand my drawing”).

In regards to the embodied exercises, we observed that the teachers did not speak of their embodied experience as an abstract idea of what they should be feeling or as a theoretical concept, but directly and personally.

3. Types and qualities of experience

What intangible experiences were then made visible? In essence, I discovered the *what* refers to *types* and *qualities* of experience. By type, I mean the general or broad category of an experience based on its content or form. For example, some awareness-based prompts made space for empathy, vulnerability[115] and/or new ways of thinking/relating[116]. At times, some prompts made teachers aware of their own observation or of the school environment as a social field[117].

115 This takes me back to a moment during the drawing prompt, when teachers were asked to engage in an activity of deep listening—afterwards some reflected how they missed spaces to be vulnerable and to share openly during the busy school days.

116 This reminds me of a moment when trying to represent the emotion of fear, one teacher drew it like an amoeba. The teacher shared that the unexpected drawing allowed for a new way of thinking as the teacher suddenly realized that “just like an amoeba, the shape of emotions are permanently changing”.

117 This takes me back to a moment when the teachers had used the Navarasa Cards to guide an exploratory walk around the school—and one teacher

Other prompts encouraged surprise—for example, when a teacher discovered an emotion she didn't know existed. At another time, by embodying the interaction of different emotions, the teachers were made aware that emotions often co-exist.

By quality, I mean the subjective attributes or aspects of an intangible experience such as its duration, intensity and valence. For example, by marking the intensity of the emotion on the back of the Navarasa Cards, the teachers shared that they became aware that "the intensity of an emotion shifts". The implication of this finding is that once teachers are aware that intangible experiences have different qualities, they can feel empowered to play with these attributes while knowing that the experience is in a constant flux. For example, if a teacher feels an intense emotion, they can experientially know that this intensity varies and will soon change.

As discussed in ACT I, I believe these types and qualities of experience are inherently non-verbal, embodied, relational and creative. Here the qualities that the teachers reflected upon are summarized. For clustering purposes, I used the different acts of making (visible, space, aware and sense) which surfaced in section 2. This way, I view clustering as a playful visual exercise to help me make sense of what is emerging as a finding. Therefore, not meant to be a definitive association.

noticed, "there are many emotions going on in the same day at the school".

4. Interior gestures

How is an intangible experience made visible? The interviews revealed that once prompted in the workshop, the teachers often performed tiny inner actions—that is, micro-actions such as accessing information, tuning into others, noticing, reflecting, clarifying and anticipating answers. For example, one teacher said that by "offering words to describe a feeling", she became aware of the very existence of an emotion. Another teacher shared that by "leaning into an uncomfortable feeling", she discovered something new. This way, subtle actions like "offering words" and "leaning into" are what I am referring to as inner tiny actions.

These inner acts were often performed unconsciously. I believe the teachers were able to articulate them because of the guidance of adapted micro-phenomenological interviews (Chapter 1, Appendix 5.4) (Petitmengin, 2007). Through guided introspection, I asked the teachers to evoke meaningful moments (memories) that happened during the workshop. The interviews' emphasis was then in discovering how the teachers became aware of and attributed meaning to their experiences.

The clustering exercise below is not meant to be all-encompassing of the teachers' inner experiences. Instead, it is a sense-making exercise for myself as a

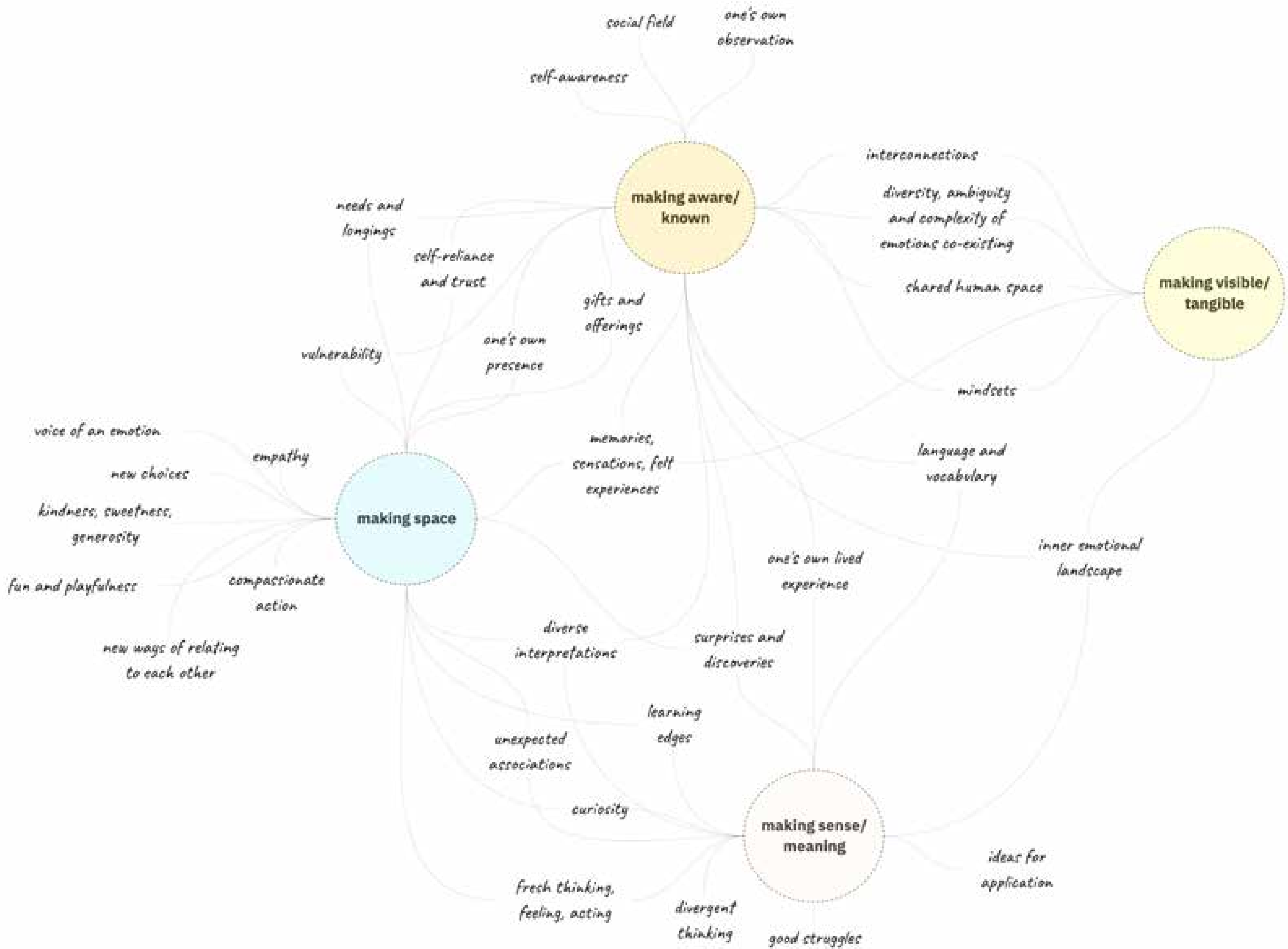


Fig.31: Grouping qualities of non-verbal experience as a sense-making exercise.

researcher—which made me aware of the incredible richness of the teachers' inner lives. That is, the richness of sense and meaning which is already present and was made explicit through the prompting activities.

5. Closing

ACT I discussed ideas, approaches and theories drawn from applied practice prior to this PhD which led into the inquiry of how design might help make the intangible tangible or the invisible visible? Workshop A emphasized working with emotions within a school's social field. Awareness-based prompts were then designed with the purpose of grounding emotions, beliefs and actions in tangible/visible forms.

The application of the prompts revealed nuances to the act of making visible. That is, making the intangible visible was not an act that manifested in isolation. Instead, it surfaced alongside *making space for*, *making oneself aware of*, and *making sense of* the intangible.

Workshop A demonstrated that the awareness-based prompts made types (i.e. broad categories of experience based on their content and form) and qualities (i.e. attributes or aspects of the intangible) visible. With the support of qualitative interviews and guided introspection, Workshop A revealed that the teachers became aware of their emotions and thoughts through performing unconscious interior gestures (Petitmengin, 2006)—such as by remembering, leaning into, figuring, interpreting, etc.

These findings and reflections raise new questions: What is the nature of the relationship among the different acts of making? Are they always interrelated? Is there a sequence to how these acts are performed? What are the tangible or material affordances of each awareness-based prompt? These questions will continue to be explored in Workshop B (chapter 3).

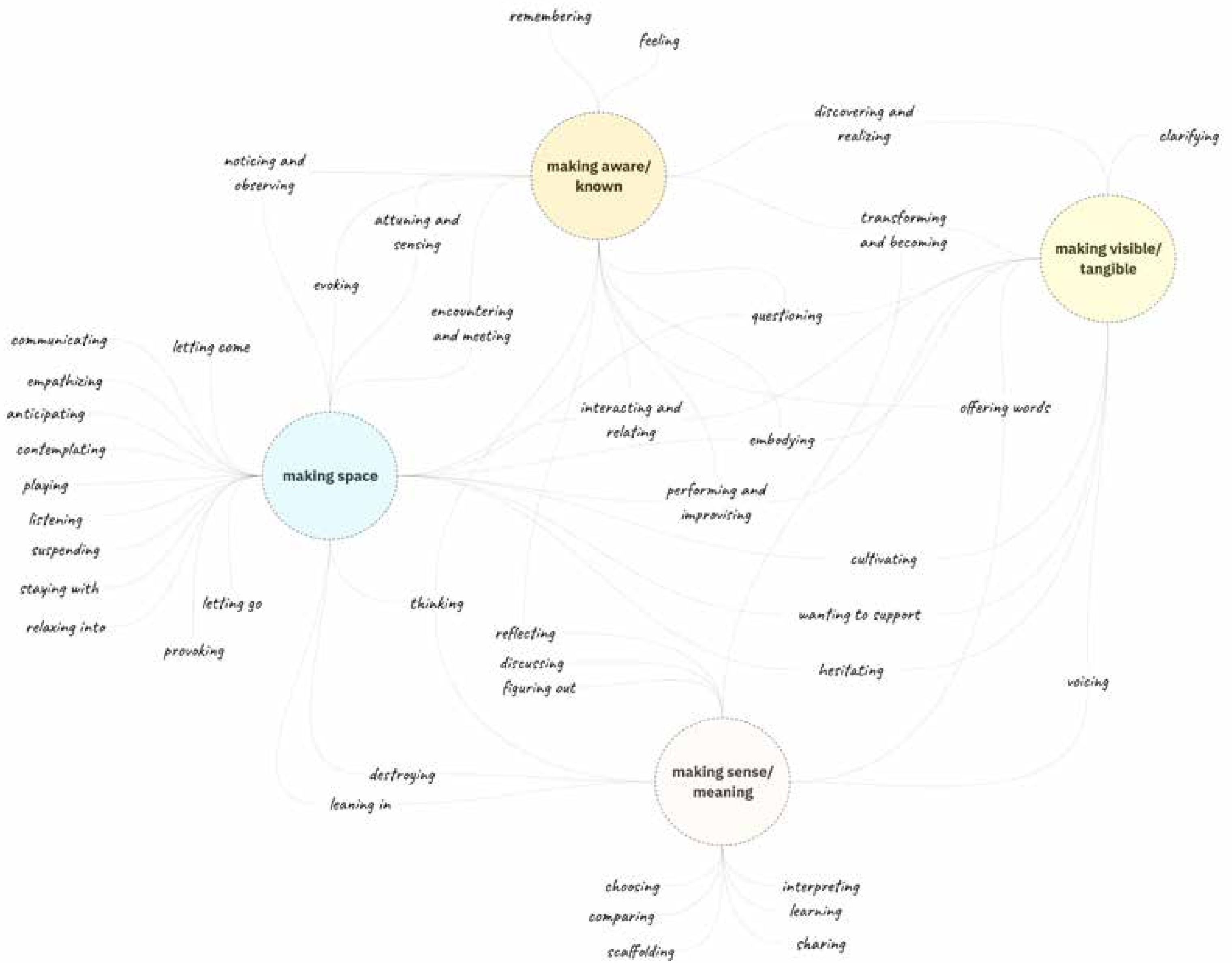


Fig.32: The interior gestures hint at the richness of their inner lives.

Appendix I: Questions & Survey Results

Questions to delineate the core learning design intention

Intention-setting through questions

How can we learn about the ways in which emotions are being expressed?

How can we build self-awareness about our emotions and mindsets?

What does a particular emotion (e.g. anger, fear, joy) feel like? How does it play out?

Are there any opportunities for different responses to an emotion? What can be done?

Where can a particular emotion take us?

What becomes visible?[15]

What is invisible that is seeking to be made visible?

Survey results

Workshop	Prompt	0	1	2	3	4	5	Median
1	Navarasa Cards				1	6	5	4
	Photos				3	6	3	4
2	Body					8	3	4
	Photos			1		8	2	4
	Drawing				2	4	3	4
3	Drawing				1	7	2	4
4	Body				1	4	3	4

Table: Survey results on how useful the teachers found the prompts to be.

Appendix II: Moments of Experience

A teacher's chosen moment of experience (Images)

	Moment-to-moment	Teacher's insights
1	When all the cards were put on the board to create an emotional map of the school based on the teachers' observations	"I was trying to *figure out* the cards", the teacher said, "and it was intriguing to see how they were interpreted differently by different people".
2	As the teachers discussed and clustered cards	"I was curious about why others clustered in one way or another", the teacher pondered, "Who is wrong? What mental state do I need to be in to observe? What does it take to understand someone's feelings?". "Understanding can be tricky", the teacher concluded. "First what I thought the feeling was about, then I related it to others as they categorized the cards", the teacher compared as she sought validation for her interpretation of an emotion.
3	Wrapping up a learning from this moment of experience	The teacher realized there will always be some emotional challenge somewhere in the school: "It ended up surfacing the fact that on any given day, there will always be a few kids who are having trouble emotionally", and reflected, "how do we help out?"

Table: A teacher's chosen moment of experience—"Clustering cards".

A teacher's chosen moment of experience (Photographs)

	Moment-to-moment	Teacher's insights
1	When the teacher looked back at her own photo embodying the facial expression of an emotion	"I myself have that emotion", the teacher said. Seemingly surprised, the teacher continued, "I never saw my face smiling like that. I saw the teenager in me and thought, 'I look so good!'".

2	When all the photos were shown on the computer screen to the whole group	"People might interpret in different ways", the teacher concluded, "because what I thought to be one thing, people spoke of as something else".

Table: A teacher's chosen moment of experience: "Looking back at my own photograph".

A teacher's chosen moment of experience (Drawing)

	Moment-to-moment	Teacher's insights
1	Immediately prior to initiating the activity	"First I thought love is a *heart* or fear would be represented by a certain emoji", the teacher said—making her way of thinking visible.
2	During peer dialogue	"I have different kinds of fear that I will encounter. Not only one. It became more profound to me", the teacher said—noticing there were nuances in her experience. "Some of our fears are connected. I became aware of the other person's fears", she noticed.
3		"When I talk about the emotion, I felt it one more time", the teacher realized that *to remember* is to feel an emotion again.
4	During drawing	"Instead of using an emoji, I drew fear like an ameba", the teacher said, "because amebas are always changing their shapes"—making a fresh sense of her previous interpretation.
5		"I felt nice and happy by drawing it. I drew by venting it out", the teacher concluded by explaining how she expressed an emotion visually.

Table: A teacher's chosen moment of experience: "Shifting my preconceptions of how to represent an emotion".

A teacher's chosen moment of experience (Photographs)

	Moment-to-moment	Teacher's insights
1	Stepping into the shoes of an emotion to give it voice	"I realized I can't find words", the teacher said.
2	The teacher began to read what the others had written down	The teacher noticed there was a wide range of words ascribed to an emotion, and thought, "we need to work on how to articulate, offer language to an emotion".
3	The teacher concluded by making meaning out of her memory	"It is important to see behind what is said. If I can't express, I can't assume others know either", she concluded.

Table: A teacher's chosen moment of experience: "Walking around and reading the *Voices of the Emotions*".

Chapter 3: Workshop B

In April 2021, I was invited by the Universidad Católica de Temuco (Chile) to host an online workshop for undergraduate students as part of a seminar called *Co-Creando el Futuro Emergente* (Co-Creating the Emerging Future)[118]. Building on learnings and emergent questions from Workshop A, I designed a week-long workshop entitled *Imaginarios Futuros* (Future Imaginaries). This workshop was facilitated by myself alone while Workshop A was co-hosted with my PhD colleague, Sonali Ojha.

By the time of the seminar, we were right in the middle of the Covid-19 pandemic. The rampant cases and widespread fear of the infection had turned most of our lives upside down. I remember wondering: What perspective to take towards the future in such a moment of disruption? To design this workshop, I started by recalling the worldviews and approaches to future-making that had been most formative for me by then.

I realized that in the context of future studies, I had been mostly exposed to two major approaches: either relying on a logic of predict-and-control—for example, by quantifying trends and attempting to predict what's next (Armstrong, 2010; Armstrong & Green, 2013; Silver, 2012; Tetlock & Gardner, 2015)[119]; or relying on the speculative power of one's imagination (Dunne & Raby, 2013; Montgomery & Woebken, 2016; Sterling, 2005)[120]. The former tends to yield one single version of the future, and the latter often yields multiple. I argue, however, that both approaches are often cognitive-based and disembodied. By emphasizing the cognitive aspects of futuring, these approaches tend to leave aside the heart-level and felt qualities of being human[121].

Let's look at the example of futuring through imagination. Montgomery & Woebken (2016) argue that most of the futures-thinking embedded in Western culture today comes from places like Hollywood and the film industry. This way, imagination is present as a form of fantasy and science-fiction (Bleecker, 2009; Dunne & Raby, 2013; Sterling, 2005).

118 The 5-day workshop was part of an online seminar—open to all students at Facultad de Arquitectura, Artes y Diseño (FAAD) and international guests. Due to the global COVID-19 pandemic, the seminar was completely online and featured speakers including Otto Scharmer and Arawana Hayashi (https://www.faadworkshop.com/workshops/faadworkshop2021).

119 These authors have primarily explored future-making as forecasting—that is, making predictions about the future based on data and trends from the past. It is also interesting to notice that these authors come primarily from business, economics, statistics and data analysis backgrounds.

120 The field of speculative design uses critical design to create and propose alternative futures. Researchers across this field have extensively drawn inspiration from science fiction (Dunne & Raby, 2013; Sterling, 2005). Through these imagined alternative futures, designers provoke discussion and debate around cultural, political, social, technological and environmental issues, dilemmas and implications.

121 I believe that feminist approaches to speculative design are an exception to this (Butler, 1979; Imarisha & Brown, 2015; Phillips, 2015).

Instead, when proposing speculative design, Montgomery defends that by envisioning different futures, we are better capable of "filling out a future space that is likely more realistic" [private conversation][122] as opposed to imagining a single version for the future.

I believe that both the speculative-oriented as well as the Western culture forms of imagination extensively rely on thinking as its primary way of knowing. In the case of speculative design, thinking is often associated with critical making—that is, "the creation of physical products which situates future scenarios within the familiar language of the objects that surround us in our everyday lives" (Montgomery & Woebken, 2016, p. 10).

In the context of imagining alternative futures, I believe that feminist approaches to futuring are an exception to the disembodied outputs of speculative design—because they recenter the embodied voices and experiences of black women. Some of these authors have explored design fictions to discuss race, gender, and power. In doing so, futuring becomes a way of challenging structures of oppression (Butler, 1979; Imarisha & Brown, 2015; Phillips, 2015). For example, Gumbs (2018) and Shawl (2016) write about futures in which black women reject white supremacy, rebuild their communities and re-imagine their relationships to their lands and bodies. While brown (2019) explores how black bodies can be decolonized through embodied practices of joy, pleasure and self-love.

As an action researcher at the Presencing Institute (2016-21), I directly worked with professor Otto Scharmer (MIT Sloan). Through Theory U, Scharmer (2009) proposes engaging with future-making through the lens of sensing into the emergent future. Scharmer's approach to futuring is rooted in a practice of emergence. Varela & Scharmer (2000) described two foundational moves that facilitate a future to come into being—those are the acts of *letting go* and *letting come*. Scharmer (2009) argues that to allow for an emergent process, we must cultivate the capacity of *presencing*—that is, the ability of "connecting with the Source of the highest future possibility and bringing it into the now." In this case, presencing is the combination of the words (embodied) presence and sensing.

Reflecting back on my own research, Scharmer's idea of presencing an emergent future provokes me to consider: What does it mean to cultivate an embodied presence and capacity of sensing to notice and bring our highest future possibilities into being? How can this be done both at an individual and the collective, relational levels? What forms of collective-based creativity can come out of such an approach to future-making?

122 In this PhD, I recognize the immense value of private conversations I had with many of the people that I cite. Therefore, I acknowledge the relevance of these people in shaping my worldviews and design practice. Elliott Montgomery, for instance, was one of my professors at Parsons the New School for Design—and someone who informed my understanding of design futures (https://epmid.com/).

The reasons why I am more inclined to Scharmer's approach to futuring (as opposed to other prediction-based methods or conventional forms of speculative design) is that it advocates for an emergent way of being-knowing (i.e. the act of sensing), considers futuring as a process of becoming, shifts the focus from future-thinking to future-sensing/making; and emphasizes the importance of embodiment as critical to sense into a future that wants to be born (Scharmer, 2009).

In the workshop *Imaginarios Futuros*, I explored the act of sensing as the birthplace of emergent futures—including noticing, attending to and tuning into our experiences and those of others. I shared with students that noticing our embodied, non-verbal and relational experiences is important because those give us cues to lean into the emergent future (Scharmer, 2009; Hayashi, 2021)[123]. In this workshop, the students followed a path of self-inquiry which ultimately led them into co-creating a collective artifact for the future: a design brief with their longing and hopes for the city of Temuco[124].

The main differences of Workshop B (as compared to A) include that it was completely online (versus in-person) and that I worked with students (and not with teachers). In Workshop B, I was hoping to explore this PhD's main question(s): How to make intangible experiences visible? And what are we becoming aware of? In addition to these, I was also hoping to further investigate the questions raised through Workshop A: How do the different acts of making (visible, space, aware and sense) interrelate?; and what are some of the affordances of the awareness-based prompts towards making the intangible visible?

1. Awareness-based prompts

The primary intention for designing the awareness-based prompts for Workshop B was to take students on a journey starting from inquiring into themselves (e.g. their emotions, feelings, thoughts, ways of knowing) and gradually move towards a whole-group inquiry—that is, sensing into a shared relational space and making their seed aspirations for the city visible. The premise behind this transition is at the core of this PhD's main argument: who we are and the systems we co-create are interdependent[125]. Therefore, I chose to design prompts that built on one another and intended at leading the students from self to

123 One point of view which I gained while working with Arawana Hayashi and Otto Scharmer is to bear in mind what is at the core of one's intention for future-making. That is, do we consider the future as a space of hope and possibility? Are we inclined towards co-creating healthier futures (as compared to the present)?

124 The students created a video by assembling meaningful parts of their self-inquiry process. The video was meant to be a design brief to be shared with stakeholders (government, companies, families)—therefore, making the students' longings and hopes for the future of the city visible.

125 This aligns with Senge's notion that the most systemic is the most personal (Böll & Senge, 2020).

whole—an approach which is grounded in a systems change perspective of interdependency.

The workshop included facilitated activities, gaps for reflection and solo time. The schedule and group size afforded plenty of time for guided introspection. To facilitate the activities, I used Miro boards[126]. Considering the online format of this workshop, I emphasized the use of visual prompts as opposed to relying on embodied ones—such as in the case of Workshop A. Therefore, my intention was also to better understand the value of visual literacies in making the intangible visible; and explore how to run embodiment exercises online.

The awareness-based prompts were designed to build on another. For example, an insight or feeling would surface using one prompt; and be taken as input into the next activity. The order of the prompts was, therefore, extremely important. The awareness-based design prompts were organized around four main sections in the following way:

a. During the first section *Reflection on Keywords*[127], the students were given different words and asked to define what those meant for them. The words included: creativity, sensing, practitioner and intangible. The intention of this prompt was to surface the students' previous cognitive understanding of essential terms that often show up in this PhD.

b. In *Images and Metaphors*, the awareness-based design prompt asked the students to choose from a pool of images, one that represented best how they learn. The images were metaphorical (e.g. photos of children playing, ants on a leaf, etc.)[128]. While the students looked at the images, I asked them supporting questions, such as: "Do you learn best on your own, or in small or large groups? Do you learn by getting your hands in the mud? Or by contemplating nature?" The students then individually chose their images and wrote down a brief reflective sentence.

c. In *Visual Mapping with Collage*, I asked the students, "How do you make sense of difficult things? (i.e. things that feel complex)". In response to this question, the students marked their preferred modes of inquiry on the Miro board—including drawing, imagery, photography, writing, journaling, poetry, music, making objects (artifacts), and/or using their own bodies. The students then created a collage (using personal images and texts) to make their approaches to complex situations visible.

126 Miro is a shared platform that functions like a collaborative whiteboard (https://miro.com/).

127 I got the idea for this activity from Sonali Ojha—who once told me, "ask people what they think about the words you are using, and you will be surprised" [private conversation].

128 I borrowed this exercise from Lisa Grocott—from whom I learned about the value of metaphorical thinking for surfacing intangible experiences (Grocott, 2022).

Part	Section	Prompts
(I)	Check-in and warm-up	(a) Reflection on Keywords (b) Images and Metaphors
(II)	Making sense of how we make sense	(c) Visual Mapping with Collage (d) Reflexive Writing
(III)	Attuning to the emergent future (through felt, embodied, relational experiences)	(e) Future Trends (f) Feelings and Emotions (g) Gestures (h) Evoking a Memory (i) Longing for and Hoping for
(IV)	Assembling a collective piece to integrate everyone's contribution	(j) Video Assemblage

Table 5: Imaginarios Futuros Workshop flow. Temuco, Chile; April, 2021.

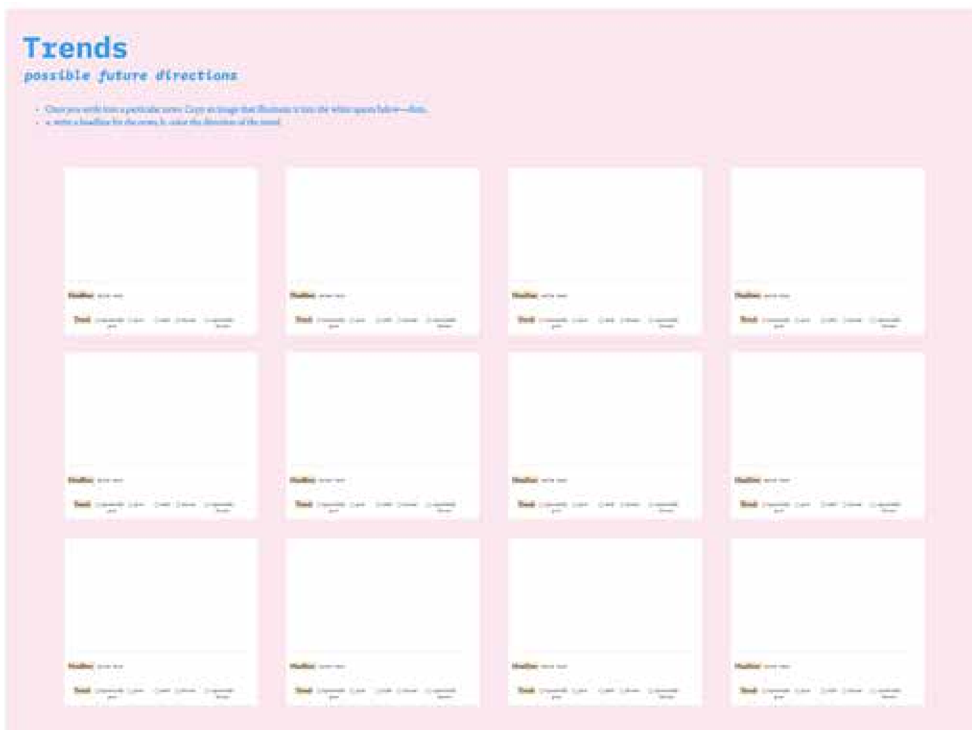


Fig.33: The design of prompts using an online platform—Miro.

d. In *Reflexive Writing*, based on what the students had written in reaction to the keywords prompt, they wrote a three-paragraph text responding to the following writing prompts: Who are you? (paragraph 1), What is your creative practice? What is it that you love doing or wish to do? (paragraph 2), Does your work deliver intangible outcomes? If so, which ones? (paragraph 3). The students shared their responses through blog posts.

e. *Future Trends* was a loose adaptation of a game called *The Thing From the Future* (Candy & Watson, 2014)[129]. The students chose one news item from their favorite news media (i.e. something that made them curious, speculative, worried, or hopeful)[130]. The screenshots of their chosen headlines were posted onto the Miro board.

The students then marked what trend they believed the news was pointing towards: growth (i.e. "a future in which everything and everyone keeps climbing"), collapse (i.e. "a future in which life as we know it has fallen, or is falling apart"), discipline (i.e. "a future in which things are carefully managed by concerted coordination"), or transformation (i.e. "a future in which a profound historical transition has occurred") (Candy & Watson, 2014).

f. In *Feelings and Emotions*, the students clarified what feeling their chosen news prompted in them. Using an adapted version of the mood meter (Brackett, 2020), they identified an emotion and reflected on whether it increased or subsided when considering the news item's trend (i.e. growth, collapse, discipline or transformation).

g. During *Gestures*, the students embodied the emotion they previously described in a gesture[131]. The students photographed their gestures and uploaded the images on the Miro board.

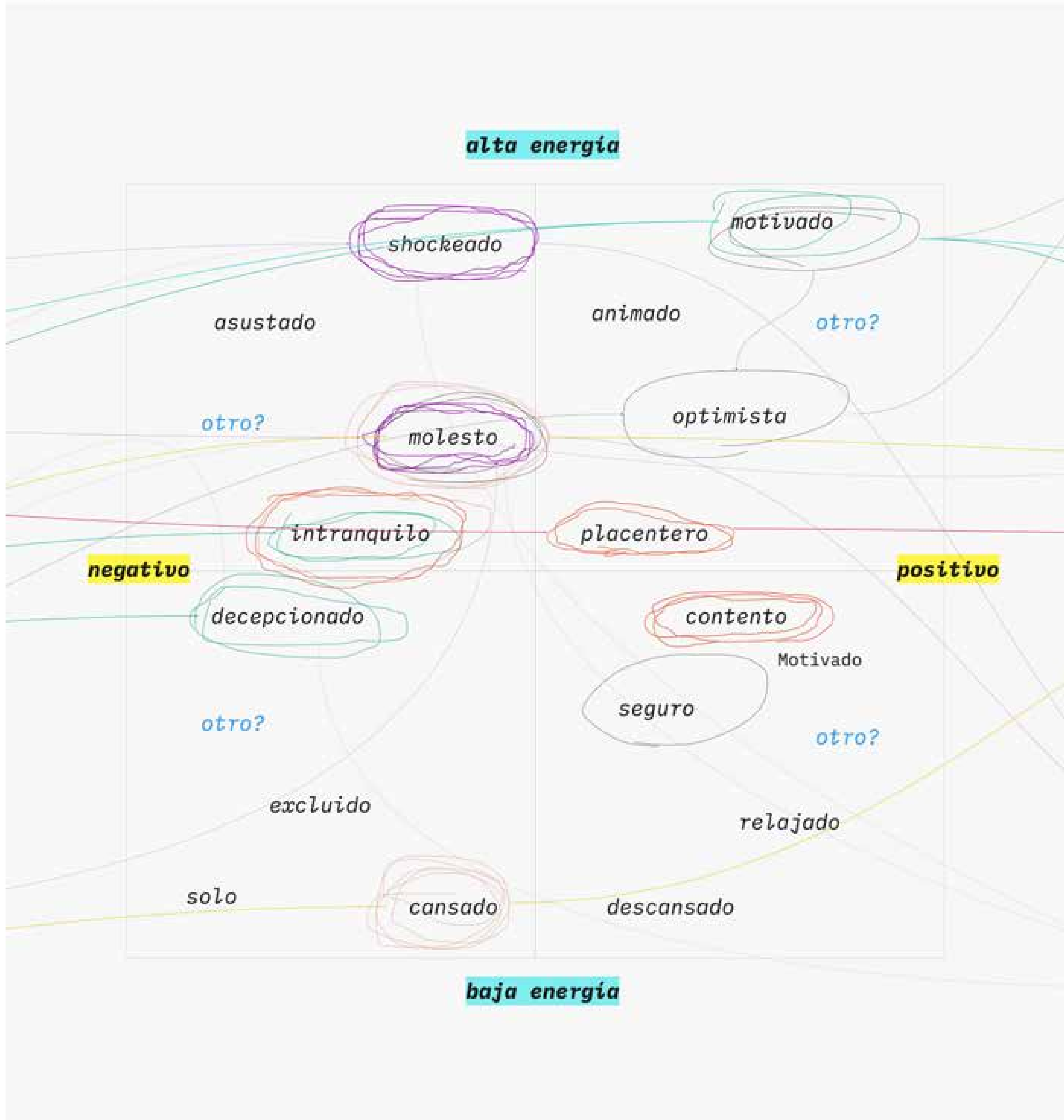
129 This game can be found at: https://situationlab.org/project/the-thing-from-the-future/.

130 I learned from Elliott Montgomery (https://epmid.com) that we can sense for "fragments of the future" in the smallest and most mundane details of life: what we hear on the media, what we shop at stores, and/or what services we subscribe to (Montgomery & Woebken, 2016). Expanding from this insight, I asked students to, then, turn their attention inwards—to notice how something external (e.g. a media news) triggers an inner experience (an emotion or feeling).

131 I had the idea for this activity from a participant in one of our Social Presencing Theater advanced programs (Presencing Institute, 2016-18). The participant was, then, Head of Innovation for a large company in Europe—and he told me the story of how his team gets to "seed ideas" by embodying gestures [private conversation].

Fig.34: "How do you learn?"—students using metaphors to illustrate their learning approaches (b). Temuco, 2021.

Fig.35: One student's collage: "I laugh with or without company"; "I speak out loud in another language to better understand my situation" (c). Temuco, 2021.


Sentir
Qué sentimiento despierta esta noticia en ti? Este sentimiento es exacerbado o reducido cuando piensas en la noticia en términos de su tendencia? Usa las herramientas de lápices para colorear tu/s sentimiento/s más abajo. También puedes elegir añadir sentimientos si es que lo deseas.
alta energía
shockeado
motivado
asustado
animado
otro?
otro?
molesto
optimista
intranquilo
placentero
negativo
positivo
decepcionado
contento
Motivado
seguro
otro?
otro?
excluido
relajado
solo
cansado
descansado
baja energía

Encarnar / Personificar

Si lo que sentiste fuera un gesto, que gesto sería?
Personifica un gesto con tus manos. Luego, toma una fotografía de tu gesto. Agrega tu fotografía más abajo.

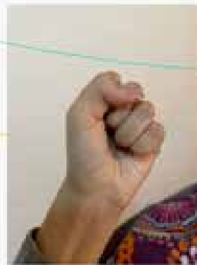


Fig.36: Students embody feelings into gestures (f & g). Temuco, 2021.

h. In *Evoking a Memory*, the students remembered one moment of their past in which a specific and valuable experience took place (in relationship to the topic of the news item they had chosen)[132]. They wrote down the context, situation and what happened. The intention of this prompt was to surface a more direct, subjective connection between the students and the news item they had shared.

i. During *Longing for and Hoping for*, the students wrote one thing they longed for in the present (i.e. a yearning for something which was lacking or missing; for themselves and/or for their city as a whole), and one thing they hoped for in the future (i.e. a desire or dream for a possible future)[133]. This awareness-based prompt aimed at surfacing seed intentions for the future—based on what had emerged from the previous visual, written and embodied prompts.

j. In *Video Assemblage*, the students assembled the different parts of what they had produced through the various prompts during the workshop into a single final video. The video was framed as a design brief for the future of their city (Temuco) drawing on their own lived experiences. As a group, the students listed city-wide stakeholders they would like to be in dialogue with (e.g. mayor, leaders, elders, Nature). The video was then structured as a letter: From the students…to… (the mayor, their families, teachers, the elders, Nature). The students read the sentences of one another (instead of reading their own)—therefore, giving voice to the group as a creative collective[134].

The purpose of co-producing the video was to shift awareness from oneself as an individual towards an awareness of the whole group (as a creative ensemble). Therefore, moving away from individual authorship towards an understanding of creativity as a collective process grounded in relationality. This way, the video assemblage was an example of awareness-based collective creativity, that is, creating social reality from the perspective of the whole (Hayashi & Gonçalves, 2023).

2. Discussion

2.1 Types and qualities of experience

What intangible experiences are then made visible? Based on what the students shared in the survey and interviews (Appendix 4.3), I propose a sense-making exercise of clustering six groups of experiences that were made visible. I recognize

132 The act of remembering relates to the term *evocation* from phenomenologist Claire Petitmengin—to denote the experience of bringing memories from the past vividly into the present moment (Husserl, 1970; Petitmengin, 2007).

133 I learned from Sonali Ojha that longings and hopes are at the core of a human being's ability to engage with the emerging future(Gonçalves & Ojha, 2016; Ojha, 2006).

134 The final video can be seen here: https://vimeo.com/537821214.

Fig.37: Student drawing featured in the final video (j). Temuco, 2021.

“Soy una persona solitaria pero que adora la compañía de los que ama; observadora, introvertida, muy sensible, que se asombra con la simplicidad del mundo”.

“I am a solitary person but I enjoy the company of those who love me; observant, introverted, very sensitive, scared at the simplicity of the world”.

—Student.
Temuco, 2021.

there are limitations in attempting to cluster people's insights and subjective experiences[135]. I also believe there could be multiple ways of forming these groups. Therefore, I propose the clusters below as one way of making sense of what they said—and not the only way:

Inter-subjectivities: emotions, vulnerabilities (and the idea of being vulnerable itself), diverse ways of being, knowing, relating and creating as individuals within a social group[136].

Previous lived experiences: the students spoke of "meaningful memories". They also referred to experiences which "they had never reflected about before" (i.e. pre-reflective experiences).

Emergence: the students became aware of their beliefs around emergent processes. They discovered the felt qualities of emergence—by describing the experience of emergence as openness, discomfort or even creative freedom.

Fresh meanings and new perspectives: as the students "placed themselves in situations they rarely do", and were prompted to engage with emergence and not knowing—they spoke of how new perspectives arrived and new meanings were formulated.

Seed intentions and hopes for the future: the students drew out their insights based on what matters to them in past experiences and in the present moment—therefore, what they wish to carry on towards the future. They reflected about their hopes and longings, and were surprised as to how optimistic they were.

Collective creativity: the students shared "how beautiful it was to discover we can make something together" and "learn from one another".

2.2 Interior gestures

How is an intangible experience then made visible? Based on what students shared in the surveys and interviews (Appendix 4.3), I propose a sense-making clustering exercise which reveals five groups of interior gestures—that is, the inner acts the students performed often unconsciously towards becoming aware and making sense of their inner experiences[137].

Accessing inner experiences: the students spoke of "evoking and remembering" meaningful experiences; of "opening up to, noticing, seeing

135 Here, I am inspired by Barad's notion that it is impossible to separate the researcher and what is researched (i.e. the observer and what is observed)—because, ultimately, "the world is composed of entangled agencies rather than separate entities" (Barad, 2007).

136 I borrow the term *inter-subjectivity* from other fields of knowledge (e.g. philosophy, social psychology, sociology, feminist theories, etc.) to describe the interconnected relational experiences of individuals within a social group (Butler, 1990; Haraway, 1991; Husserl, 1970).

137 Once again, I question my own attempt of clustering people's insights and subjectivities. I recognize there are multiple ways of grouping and what I present is one way (and therefore, not the only one).

deeper and feeling" emotions, thoughts and felt senses.

Discovering inner experiences: "recognizing, clarifying, identifying and labeling" aspects of their lived experiences. The students mentioned "searching for, framing, realizing, finding ways, and becoming aware of" important aspects of their lived experiences.

Expressing inner experiences: when prompted to give material and/or embodied form to intangible experiences, the students spoke of "enjoying, expressing, and communicating"[138].

Sharing inner experiences: the students reflected on how they were "questioning, reflecting, connecting, bridging, thinking about, interpreting, and understanding" emergent experiences.

Co-creating based on their inner experiences: the students spoke of "placing themselves in a situation"; "taking positions and finding interests"; and "holding optimistic perspectives, longings and hopes". When describing how they made something together, they mentioned: "by sharing, learning, adding, contributing and appreciating".

138 Expressing refers to the act of giving form—that is, the moment of expression is what makes it observable and changes how people sense and/or feel it in terms of its inner dimension/qualities.

2.3 Affordances of the design prompts

In Workshop A, I discussed how the prompts made non-verbal qualities of experience visible through provoking and revealing a sequence of interior gestures. Therefore I emphasized the how in terms of the participants' inner choices and unconscious micro-actions. In Workshop B (in addition to revealing interior gestures), I chose to explore: What are the affordances of the awareness-based prompts towards making the intangible visible?

The two qualities of the prompts most appreciated by the students were their subjective and relational nature. They spoke of how they enjoyed connecting with themselves (i.e. their emotions, ideas, ways of making sense) through a spacious (i.e. a weeklong workshop) and subjective inquiry (i.e. respectful to each one's authentic selves). An analysis of the findings revealed that the prompts assisted students in becoming aware of their experiences by:

Offering diverse ways of engaging: the students spoke of how educational contexts often privilege extroverted ways of engaging—whereas people who are more introverted and reflexive find it hard to express themselves and be validated (e.g. "the prompts helped me make things which I often don't because I am very introverted and I do not share how I feel"). This way, the awareness-based prompts democratized the learning space by inviting multiple ways of being, knowing and relating with oneself and others.

Helping surface tacit knowledge: e.g. “the prompts helped me reflect about something I already know, but that I had forgotten”; “I was surprised the prompts actually made me reflect”; “they made me reflect about things I am not conscious of most of the time”; “recognize my own emotions”; and “think about how I make sense”.

Introducing new questions, frames of thinking, and ways of making sense: e.g. “the prompts asked us questions we do not usually encounter”; “to have our own space to demarcate how we make sense”; “the prompts made me long for more experiences of value”; and “the prompts made me aware that not all needs to have a static answer or a concrete message”.

Assisting meaning-making while in relationship with others: e.g. “it surprised me the diversity of responses from my peers, which prompted me to discover mine”.

While in Workshop A, at most two prompts were used during each day-long workshop; in Workshop B, ten prompts were introduced over a week. As a facilitator, I realized that when more prompts were used, I had to make a bigger effort to bring them together so the workshop experience could feel coherent. Given this PhD navigates in the terrain of uncertainty and emergence, I believe how the prompts connect must be clear as to minimize feelings of confusion about the purpose of the workshop. Therefore, it is necessary to reflect on the appropriate number of awareness-based prompts to be used in a workshop and how to frame and connect them clearly and coherently.

3. Closing

In Workshop B, the students explored how to make hopes and longings for the future visible—in particular, the embodied, relational and creative aspects of hoping and longing. The students shared that while co-creating an artifact together, they felt safe even though they were being vulnerable. The students concluded that vulnerability became a source of creativity because they felt safe in the group.

Feeling safe in the group was enhanced by how the awareness-based prompts: (1) created space for the students to locate themselves within the group while smoothly transitioning from self-to-others and; (2) assisted the students in giving voice to each others’ vulnerabilities through a final assemblage of a visual artifact. This way, by letting go of authorship and embracing each other’s work as their own, the students reflected that subjective experiences did not seem personal or private; but instead, seemed collective and shared. Their reflections make me wonder: What does designing for safety in a learning environment must include? How might we design for safety in ways that our vulnerabilities become sources of creative strength and not weakness?

Regarding what was made visible, the sense-making clustering exercise revealed six groups of intangible experiences: *inter-subjectivities; previous lived experiences;*

emergence; fresh meanings and new perspectives; seed intentions and hopes for the future. The qualitative interviews (chapter 1, section 5.4) assisted the evocation of tacit experiences and inner choices/actions. Therefore, revealing multiple interior gestures (Petitmengin, 2007) that the students performed during the workshop as they engaged with the awareness-based prompts. These interior gestures included, for example: *opening up*, *seeing deeper*, *framing*, *finding ways*, *enjoying*, *interpreting*, *bridging*, *learning*, *adding*, *holding*. The proposed clustering of these micro-actions indicated five groups of interior gestures: *accessing*, *discovering*, *expressing*, *sharing* and *co-creating*.

Workshop B also emphasized specific affordances of the awareness-based prompts. A sense-making clustering exercise revealed that the design prompts assisted the students in becoming aware by: (a) offering diverse ways of engaging with their experience; (b) helping surface tacit knowledge; (c) introducing new questions, frames of thinking and ways of making sense; and (d) assisting meaning-making while in relationship with others.

I acknowledge that these analyses and clustering choices are one possible approach to making sense of what the students shared—therefore, not intended at presenting a final truth. Considering the practice orientation of my PhD, the clustering exercises model how I attempt to make sense of emergent findings and reveal new questions and paths forward for design. This way, I wonder: What other roles can awareness-based prompts perform? How might including other types of materials (e.g. 3D objects) contribute to different outcomes?[139]

139 I remind you, the reader, that both Workshops A and B used varied combinations of embodiment, drawing, sketching, imagery, photography, video, and/or writing—but did not use 3D materials/tangible objects.

Appendix I: Survey Results

Surveys results

Prompt	0	1	2	3	4	5	Median
Feelings and Emotions (f)					2	6	**5**
Images and Metaphors (b)					1	5	**5**
Visual Mapping with Collage (c)					1	5	**5**
Video Assemblage (j)					2	6	**5**
Reflection on Keywords (a)					2	4	**5**
Longing for and Hoping for (i)				1	1	6	**5**
Reflexive Writing (d)				1	1	4	**5**
Evoking a Memory (h)				1	2	5	**5**
Future Trends (e)				2	2	4	**4.5**
Gestures (g)					5	3	**4**

Table: survey results for how useful teachers found the prompts to be.

Appendix II: Moments of Experience

The students' chosen moments of experience

	Moment-to-moment	Student's insights
1	When the prompt asked her the question: "how do you make sense of things, of complexity, of your world?"	"I did not understand the question because, in class, this kind of question is not commonly asked"; "it was a new question, and I felt uncomfortable, not knowing how to respond. It required me to think too much".
2	Checking on what her peers responded/did	"I checked what my peers did so I could locate myself"; "I noticed everyone did something different—so it meant I had to search for my own way of making sense".
3	By doing/making it herself	"By writing my thoughts down, I realized I can only make sense if I understand something. By articulating and writing a blog post, I felt like I was 'answering the question'. It felt clarifying, complete—like an accomplishment".

Table: "Being asked the question of 'how do I make sense'?".

	Moment-to-moment	Student's insights
1	When everyone began to upload their individual work (e.g. personal drawings, images, texts) to a shared folder—and we began seeing each other's works.	"I had this idea of how art is a competitive field. I was surprised that—in the Whatsapp group, people were actually appreciating each other's work. People were gentle and kind. I felt pleased and felt like everyone had their work recognized. It was a beautiful moment"; "Nobody was judging anybody. I understood everyone is in the same place, and that support is mutual. It is not like in my university where everyone has a different path. The shift, for me, was that I became aware that we have a shared path. And that companionship comes from doing something together".

Table: "Everyone uploading their individual work into a folder".

	Moment-to-moment	Student's insights
1	Right when the workshop started	"I did not know my peers at the beginning".
2	Towards the end of the workshop	"I felt like I got to know them much more. I was relating to them in new ways—through feelings, gestures, points of view". "It was another way of getting to know: one that is more sensorial, distinctive". "A perception of one's way of being and knowing that is not limited to describing someone physically (how they look). But also in terms of how one feels, senses, thinks, expresses. That is different from how we usually present ourselves—which is based on our looks".
2	At the conclusion of the workshop	"When we finalized our video—and for the first time, I heard the audio we collectively made, I felt moved. I realized we did something very beautiful together". "I added my own small part, and even though it was small, I felt good about it. I felt like I was a part of something". "By listening to the audio of the video, it reminded me of all the process of the week. I learned we can make something beautiful even though our larger social situation may be difficult, and full of problems. It is important to do it with kindness".

Table: "Getting to know everyone better".

	Moment-to-moment	Student's insights
1	Everyone was writing/adding their names to an image/metaphor that represented best how they learn	"At that time, I felt like I had an inner and outer vision of myself. The inner vision was asking me 'what calls you in this moment? What is your path as an artist?'. The outer vision came from seeing other people's images: I could see myself in relationship to them. I felt inspired. It was like seeing myself in a kind of subjective mirror: meeting, knowing, identifying myself. My likes and dislikes, places to grow, future possibilities". "The week had been intense with some family members with Covid—I had not had time to reflect and see myself. However, at that moment, I had time to see and think of myself.

Table: "When we wrote our names on Images and Metaphors".

	Moment-to-moment	Student's insights
1	At the beginning, everyone was putting up post-its and making up a structure for the video	Realizing, "usually we do not do things like this in groups. We often work alone".
2	She, then, noticed the "video was coming alive"	"We were reading, rehearsing, creating, sharing, being vulnerable. I realized it becomes more than the work or output itself—it is about sharing with each other". "Each one is different in a subjective, personal way". "I felt comfortable in the group. I discovered I can work in a group". "As the video was coming alive, I felt like an achievement and an unblocking".

Table: "Making a video with everyone".

Appendix III: Synthesis Surveys & Interviews

Findings from surveys and interviews

Prompt	*What* (i.e. quality of experience)	*How* (i.e. interior gestures)	Sample quote(s)
Feelings and Emotions (f) *(4.8)*	Emotions	Labeling, identifying, recognizing	"it helped me recognize my emotions"
	The idea that one can "feel (sense) into the future" (i.e. a basic frame to emergence) (Brown, 2017; Hayashi, 2021; Scharmer, 2009)	Accessing, thinking, understanding, feeling	"We can wish for a kind of future based on how we feel"; "I understood we have an experience that is real and close—in the light of the conflicts and social contexts that surround us. Our subjective experiences are the basis for creating a better future".
Images and Metaphors (b) *(4.8)*	Fresh perspectives	Reflecting, placing oneself, identifying	"I had to reflect about the images, and I placed myself in a situation where I rarely do—and felt I could identify with many images";
	Diverse ways of learning	Becoming aware	"It made me aware that not everyone has the same type of learning"; "I became aware of different ways of learning, such as learning from one another, from dialogue, collaboration, practice, from experience, mistakes and failures, or even from solitude and introspection";
	Ways of being	Seeing, clarifying	"It helped me see myself with clarity".
Visual Mapping with Collage (c) *(4.8)*	Ways of communicating	Finding ways, searching, communicating	"It helped me search for ways of communicating"
	Ways of making sense	Becoming aware, expressing, realizing	"I became aware of people's diverse ways of expressing their ideas"; "I became aware that people make sense in different ways, for example through silence, drawing their conflicts, debating, dance and music".
	Knowing	Deepening, making tangible	"Deepening knowledge through the use of different media; such as words, images, etc"
	Openness and creative freedom	Enjoying	"I enjoyed the openness and freedom of the activity".
Video Assemblage (j) *(4.8)*	Vulnerability	Seeing, sharing, opening up	"It helped me see that I could work with groups and share my personal experiences"
	Integration, meaning	Remembering	"It helped me remember all that we did through the various prompts in the workshop"

	Collective creativity	Making together, appreciating, adding, contributing, delivering	"It was beautiful to see that we can make something together—adding each small part or contribution from everyone into something that is better as a whole"; "it made visible to me that by working in a group, we can deliver a message that is, at the same time, diverse and complete".
Reflection on Keywords (a) *(4.7)*	New meanings; pre-reflective experience	Reflecting	"I had never reflected about the meaning of theses words before"
	Previous experience	Framing, learning, experiencing	"I learned that definitions are framed based on a person's own personal experience".
	Goals and intentions	Becoming aware	"It helped me become aware of my own goals"
	Context	Understanding	"It helped me understand the context in which I work"
Longing for and Hoping for (i) *(4.6)*	Collective creativity	Questioning, positioning, co-creating	"By helping me to question the future, it made me aware of my position in terms of creating it"
	Hope	Making visible, holding, longing for, hoping for	"It made visible that most of us hold a hopeful and optimistic views about what the future can be"; "it made me aware that despite all our current devastating conditions, to long for and hope for is comforting"
Reflexive Writing (d) *(4.5)*	Self-awareness, one's inner qualities	Introspecting, making an effort, expressing, seeing deeper, seeing oneself	"Introspection, self-understanding and an effort to express something to others"; "it helped me see myself beyond a physical description: as someone who also is emotional and reflexive". *Many spoke that they discovered how they like writing and wished to write more often.
Evoking a Memory (h) *(4.5)*	Subjectivity, value of personal experience	Recognizing, becoming aware	"It made me aware that everyone has a personal experience that is valuable"
	Meaningful memory	Evoking, remembering, understanding, clarifying	"To remember what I felt in a particular moment made me see and understand it with more clarity—even though so much time has passed"
	Meaningful memories, future intentions and seeds	Connecting, bridging, reflecting, building	"To connect my personal memory with something that is happening now was an insight to me"; "it made me reflect about what we are co-constructing as a society and what we may wish to build forward";

<table>
<tr><td rowspan="2">Gestures (g)
(4.4)</td><td>Feelings and emotions</td><td>Seeing, clarifying, expressing, noticing</td><td>"The gestures helped me see more clearly the feelings that had been expressed"; "it made me see what kinds of gestures I make while my emotions are happening"</td></tr>
<tr><td>Meanings and interpretations</td><td>Interpreting</td><td>"It made me aware that a gesture can mean different things to different people"</td></tr>
<tr><td rowspan="2">Future Trends (e)
(4.3)</td><td>Emergence</td><td>Becoming aware</td><td>"It helped me become aware of what is coming at us"</td></tr>
<tr><td>Learning from others</td><td>Taking positions, finding interest, interpreting</td><td>"I became aware of the stance my peers take in regards to shared social and environmental issues"; "there are themes I was not initially interested in, but by seeing it through the interpretive lens of my peers—it made me see them anew".</td></tr>
</table>

Table: Clustering of findings from surveys and interviews.

Fig.38: High-school students co-create an immersive exhibition as a showcase for their final project in Futures Literacy (São Paulo, 2022).

awareness-based design

ACT III *(Kyu)*

bringing findings back to context

In Japanese Theater, *Kyu* is the final act—conveying the idea of a rapid closure or an abrupt ending. In ACT III, I will organize the findings from ACT II into a practice-based theoretical framework. I will close by discussing the entanglements, tensions, knots and paradoxes emerging from bringing research findings once again back into context.

1. Awareness-based design

In ACT II, I introduced awareness-based design prompts as the primary method for working with the relational dimension of a social field. In ACT III, I draw on the findings of Workshops A and B to propose awareness-based design (ABD) as a method-pedagogy aspiring to becoming a living curriculum—which includes a set of literacies, comprehensions and sensibilities towards becoming aware and making sense of the intangible[140].

1.1 Literacies

Here I define literacy as the ability to understand and apply a particular system of symbols and representations to generate meaning (Gee, 2010; Kress, 2010; Street, 1984; UNESCO, 2004, 2019). For example, visual literacies are the abilities to understand, interpret and manipulate visual information using elements such as size, color, contrast, composition and so on (Kress & van Leeuwen, 1996; Kress, 2003; Kress, 2010). While digital literacies refer to the uses of digital technology to access information, collaborate and communicate (Gee, 2010; Leu & al., 2004; Rheingold, 2012). Likewise, I define awareness-based design literacies as the abilities to become aware and make sense of the intangible.

I argue that ABD literacies could support educators and learners to develop relational, embodied and co-creative capacities in preparation to respond to social dynamics (Gee, 2010; Fischman, 2015; Freire, 1970; Jenkins, 2009; Rheingold, 2012; Shiva, 1991; Thomas & Brown, 2011)[141]. In a world of artificial intelligence and social networks, I argue that it is not only necessary to develop digital and visual literacies—we must also cultivate relational, embodied and co-creative literacies. In this manner, ABD can help us nurture social fields where awareness-based collective creativity can flourish.

I started this PhD with the question of how to make the intangible tangible/visible. Through Workshops A and B, I discovered that there are nuances to the act of making tangible/visible. That is, from looking at the findings, I realized that making visible manifested

140 I am inspired by the Reggio Emilia pedagogical approach which is framed as a set of comprehensions and sensibilities (Rinaldi, 2009).

141 Most of these authors have emphasized digital literacies. Fischman (2015) and Freire (1970), though, explored the notion of *critical literacies* and Shiva (1991) coined the term *earth literacies*.

alongside other relational and embodied acts of making.

The sense-making of interviews revealed four acts of making—which I now propose as four awareness-based design literacies: (a) *making visible:* expressing the intangible in tangible/visible forms; (b) *making space:* staying with not knowing and opening up space for emergence; (c) *making aware:* noticing and becoming aware of the intangible; and (d) *making sense:* asking questions, drawing out patterns and co-generating new meanings[142].

This analysis was based on grouping the interior gestures described by the workshop participants (chapter 2, section 4; and chapter 3, section 2). For example, I interpreted "to express", "to contribute", "to add" and/or "to destroy" as acts of making something tangible/visible. Meanwhile, I considered "to let go", "to lean in", and/or "to open up" as acts of making space.

I believe that awareness-based literacies can expand design practice beyond the use of visual and materials methods—to include embodied and relational approaches.

142 Barad (2007) and Haraway (2016) have written on the need for new forms of literacy that can address the challenges of the Anthropocene. Ellsworth and Kruse (2013) argue for the importance of developing *geologic literacies* (i.e. how the Earth's material conditions shape our everyday lives), Jones (2011) writes about *narrative literacies* (i.e. the ability to create and interpret stories that help us make sense of the world), and Davidson (2011) discusses *attention literacy* (i.e. the ability to focus in a world of distractions).

Below I describe the awareness-based design literacies in further detail. Acknowledging that they emerged from my interpretation of practice-based insights, I also wonder: What other embodied, relational and co-creative literacies could be cultivated and practiced to foster transformative learning?

Making visible

Making the intangible visible is the act of expressing (inter) subjectivity in a material or embodied form. By making a mark, we distance ourselves from our subjectivity—therefore, we can see it and better understand it. We can play and tweak with what we make visible so it becomes an object to think with (Ackermann, 2007)[143]. This way, making visible becomes a form of documentation which allows further reflection. In Workshops A and B, the participants described that they made intangible experiences tangible/visible by: *expressing*, *communicating*, *seeing*, *embodying*, *co-creating*, *adding*, *contributing*, *delivering*, *destroying*, and so on.

Making space

Making space for the intangible means to stay with a situation as it is—therefore creating a gap, interval, or moment where nothing apparently happens (Ingold, 2011; Hayashi, 2021). To make space for something new to arise, we must

143 Merleau-Ponty (1945) wrote that *objects* are where our perception ends.

drop storylines aside for a moment—including rigid opinions, ideas, explanations and pre-conceptions (Bohm, 1996; Csikszentmihalyi, 1996; de Bono, 1970; Hayashi, 2021; Scharmer, 2007). In Workshops A and B, the participants described that they made space for intangible experiences by: *letting come*, *listening*, *suspending*, *staying with*, *relaxing into*, *letting go*, *hesitating*, *observing*, *leaning in*, *opening up*, *holding*, and so on.

Making aware

Making aware refers to using visible, tangible or material elements as a support to becoming aware of thoughts, emotions, felt senses or sensations. In Workshops A and B, the participants described that they made themselves aware by: *attuning*, *sensing*, *encountering*, *meeting*, *noticing*, *contemplating*, *discovering*, *realizing*, *recognizing*, *remembering*, and so on[144].

Making sense

In the case of awareness-based design, to make sense is to draw emergent, fresh, new meanings out of intangible lived experiences. In Workshops A and B, the prompts enabled opportunities for making sense in two different moments: during the activity itself (i.e. reflection-in-action), and later (i.e. reflection-on-action) (Schön, 1983). To reflect-in-action is to respond to the generative and emergent potential of a situation (Grocott, 2022)[145]. In this way, the prompts afforded what Schön (1983) described as a *back-talk*—that is, a form of listening into a situation for what it wants to tell us.

What we ‘hear’ in these situations then confirms or disconfirms preconceived ideas. For instance, it could be something completely new—like when a teacher encountered an emotion that she had never felt or when another teacher was surprised at the diversity of interpretations people had for the different emotions (Workshop A). As a practitioner, I have learned to value disconfirming data because they often indicate the possibility of a fresh understanding of a situation.

In Workshops A and B, the participants described that they made sense of intangible experiences by: *labeling*, *thinking*, *understanding*, *finding ways*, *clarifying*, *reflecting*, *questioning*, *positioning*, *seeing deeper*, *connecting*, *bridging*, *interpreting*, *figuring out*, *comparing*, *learning*, *voicing*, and so on.

144 Massumi (2002) argues that creativity requires “attuning” to the world through openness and receptivity; while Manning (2016) describes how “attentiveness” allows for the emergence of new possibilities and Kondo (1990) defends that “listening, like making, is a form of creative work” which involves “an active engagement (...) and a readiness to be changed.”

145 One is “in reflective conversation with a situation” (Schön, 1983)—that is, not only with the materials, but with the “broader social, environmental and cultural concerns” (Grocott, 2022).

1.2 Comprehensions

I define comprehensions as core understandings or insights which allow a person (or a group) to operate from a different perspective. In working both with choreographer Arawana Hayashi and educator Sonali Ojha[146]—I was inspired by how they emphasized a social practice that always started from having a perspective into things. Sonali paid particular attention to making sure that the workshop participants understood and read a given context with depth, accuracy and warmth (Workshop A). While, Arawana always referred to the importance of holding a view while doing applied work (ACT I). By view, she meant that a body of work or a particular social practice carries a point of view and perspective into reality—one which we must understand and respect[147].

In this section I introduce four comprehensions which surfaced through this PhD. These include the comprehensions that: the acts of making are interdependent; making aware can amplify transformative learning; meaning-making must be delayed; and designing to make the intangible tangible/visible is an intentional act.

Comprehension 1: The acts of making are interdependent

Through Workshop A and B, I discovered that the different acts of making visible, making space, making aware and making sense are interdependent—that is, they are catalysts for one another (as represented in the image below). One implication of this is that educators, group facilitators and/or learning designers can create transformative learning experiences starting from any of these acts of making—because one will naturally flow into the other. Therefore, I suggest that, when developing or co-creating transformative learning experiences, educators and/or learning designers begin from clarifying an initial core intention for the activity.

A teacher, for example, might think “my core intention for this learning experience is to help students make their mindsets visible”, or “I wish my students could make space for rest in their busy routines”, while an adult learning facilitator might think “my core intention is to make a group of people aware of the social field”, or “I want to support a group of people to make sense of their emergent ideas”[148]. Once an initial intention is clarified, the learning designer/educator can

146 I introduced my work with Arawana Hayashi at the Presencing Institute (ACT I); and the work with Sonali for Workshop A (Mumbai).

147 I believe Arawana’s use of the term view originally comes from her Buddhist background. In Buddhism, a view is described as an essential understanding of the Buddhist teachings. It is important to notice that this view is not based on mere intellectual understanding, but on direct insight and personal experience (Hayashi, 2021; Thich Nhat Hanh, 1998). Therefore, it is a kind of comprehension which is tested through a direct experience of the world.

148 An alternative to this approach could be to ask students or learners to clarify their own intentions.

go into the process of creating a learning experience knowing that other acts of making will surface.

Comprehension 2: Making aware amplifies transformative learning

Although I believe that a learning experience can start from any of the acts of making—in Workshops A and B, however, I observed that most prompts started from making visible and/or space, followed by making aware and sense. For example, making an intangible experience visible (e.g. sketching a feeling, embodying an emotion, etc.) allowed the participants to make space for staying longer with the experience, being made aware of it, and therefore making sense of it in a new way (e.g. "this is the first time I experience this emotion"; "I realized others' experiences are different than mine", etc.)[149].

In the context of this PhD, I discovered that making visible and making space were important to the extent that they took people on a journey of fresh discoveries and insights—that is, guiding people towards becoming aware and making new meanings out of their embodied and relational experiences. This way, making aware marks the transition from unconscious/unaware to conscious/aware—that is, what Prochaska & DiClemente (2005) referred to as a shift from precontemplation to contemplation of our intangible experiences. Therefore I argue that making aware is a core lever for transformation of individuals and groups.

This finding is resonant with the theories proposed by other researchers. For instance, Mezirow's 10 phases of transformational learning starts with a disorienting dilemma and self-examination (Mezirow, 1991). For Senge (1990), transformation starts from becoming aware of the underlying models that guide our thinking and action. While Freire (1970) spoke of conscientization as a process of becoming aware of the social, political and economic forces shaping our lives. However, I believe none of these authors have explored the process of becoming aware as an act of making—which integrates material, embodied, relational and co-creative literacies.

Comprehension 3: We must consciously delay meaning-making

Making sense of the world is an inherent human condition (Dewey, 2015; Freire, 1970; Merleau-Ponty, 1945; Piaget, 1950). We are such that if we look long enough at a black dot in the open sky, we can make a flock of birds out of it or if we stare at a cloud, a familiar shape will soon begin to emerge. Rinaldi (2009) argues that it is not possible to live without sense because that would restrain one's identity, one's hope, one's future. Sense-making must therefore satisfy

149 Here I refer to the act of making sense as reflection-in-action (Schön, 1983). However, during follow-up interviews, participants would further elaborate the sense and meaning they drew from the workshop experiences (i.e. reflection-on-action)—in terms of what they realized, discovered or interpreted about themselves or the group.

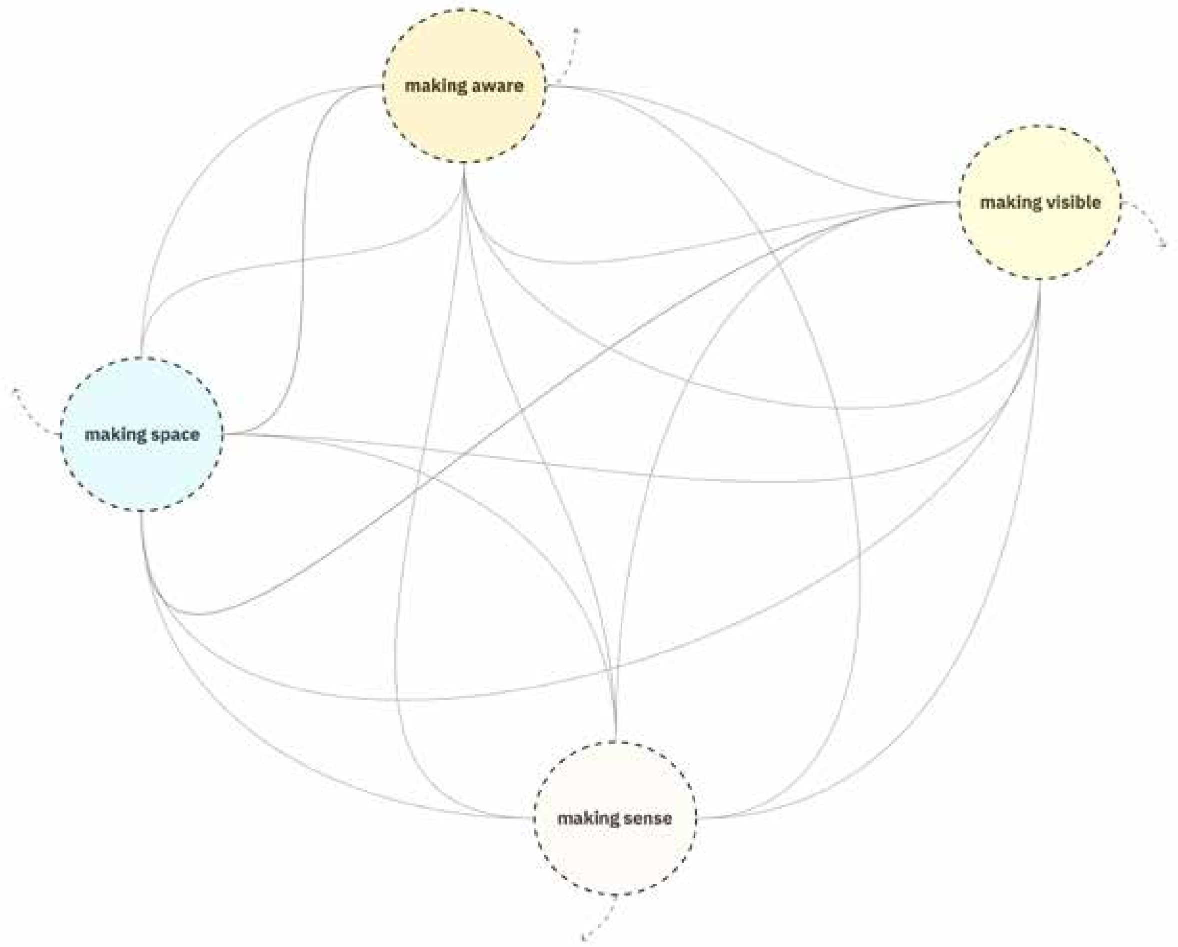


Fig.39: The acts of making catalyze one another.

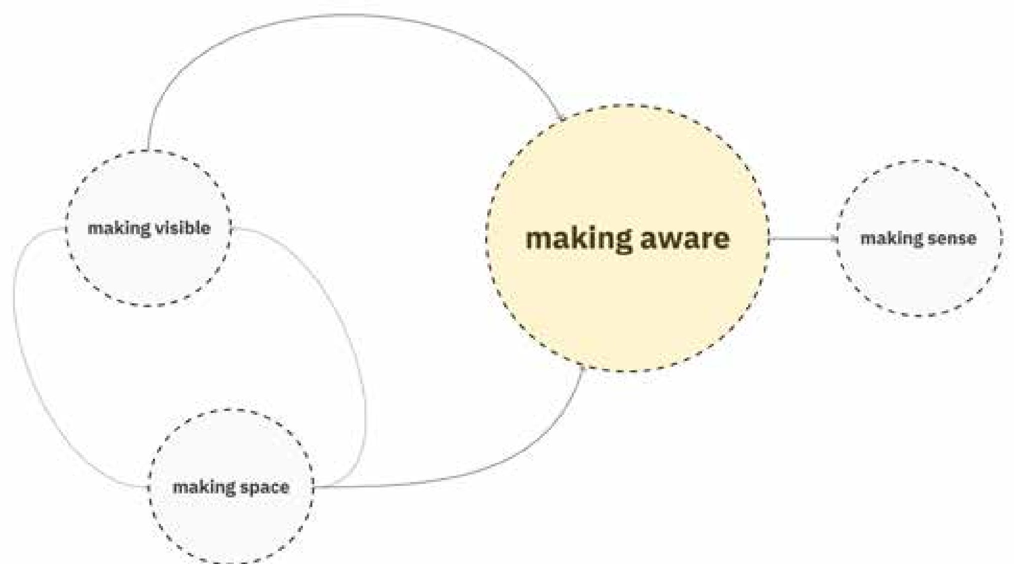


Fig.40: Making aware as a lever for transformative learning.

our intellectual, aesthetic and affective needs (Rinaldi, 2009).

Making sense can ultimately lead to making meaning (Bruner, 1986; Piaget, 1952; Vygotsky, 1978). In the workshops, I noticed that meaning-making happened, for example, when the teachers and students ascribed words to their experience[150]. This way, to make meaning is to give vital identity to an object, making it (and oneself) live in a relationship which is metaphorical and poetic (Rinaldi, 2009). How do we then support birthing sense and meaning (Varela & Scharmer, 2000)? How do we help people find sense in that which they do, discover, and live through? (Rinaldi, 2009).

In the workshops, I observed that staying with not knowing could often feel uncomfortable. Therefore, some people rushed into making meaning. This way, making sense is, at its best, a cognitive act of thinking and analyzing information. The main implication of rushing to meaning-making is that we skip altogether the value of other embodied, relational and co-creative ways of knowing by emphasizing thinking and analyzing[151]. Therefore, we lose the opportunity of tapping into our embodied, relational and co-creative intelligences.

To counter this natural tendency of pinning ideas and concepts down as soon as possible, we must intentionally delay meaning-making[152]. That is, we must learn to hold our experience in suspension and allow the time to be in touch with embodied, relational and subjective aspects of our lived experiences—before ascribing or deriving meaning to/from it. In the context of the workshops, for instance, the prompts delayed meaning-making by encouraging the participants to stay longer in a process of making visible, making space and making aware.

This way, the prompts offered teachers and students a path of open inquiry without being goal-oriented—therefore, inviting uncertainty and not knowing into the learning process (Gaver et al, 2004; Mattelmäki, 2006; Rinaldi, 2009). Not knowing, in fact, opened up possibilities for fresh understanding (Hayashi, 2021; Rinaldi, 2009; Suzuki,

150 Vygotsky (1934) said that "a word without meaning is an empty sound" and that meaning is "a phenomenon of thought only insofar as thought is embodied in speech, and only in speech insofar as speech is connected with thought and illuminated by it." This way, "a word calls to mind its content, like a house calls to mind its inhabitants."

151 I would argue that making sense of reality without a depth of awareness of our embodied, relational and subjective experiences is a common default behavior (Greene, 1978; Kolb, 2015; Scharmer, 2009). Scharmer (2007) refers to the notion of absensing—to make sense and give form to social realities no one wants to be a part of.

152 I believe this understanding counters Western notions of meaning-making—which are primarily goal-oriented. When I look at Indigenous ways of knowing and being, I am inspired by authors who emphasize the importance of "listening in and attending to the ways meaning emerges through dialogue and ceremony" (Wilson, 2008). One beautiful example of suspending meaning-making is Armstrong's essay "The Trickster Shift"—in which she embraces ambiguity within indigenous storytelling. Armstrong (1995) argues that stories can be told with openness, curiosity and playfulness rather than trying to pin down meanings and moral values.

2011). The participants' resulting insights (about themselves, others and the situations they were in) then became the basis for new discoveries, surprises, interpretations, feelings, and so on[153].

In the context of education, I argue that delaying meaning-making could be understood as a practice of resisting transmissional learning and memorization (i.e. the transfer of knowledge and disconnected facts without critical reflection) (Dewey, 1938; Dirkx, Mezirow & Cranton, 2006; Freire, 1970)[154]—as well as an act of advocating for the value of other forms of knowing, such as embodied, relational and subjective ways of knowing. I conclude, therefore, that consciously delaying meaning-making is a form of resistance that can, in fact, deepen a learning experience (hooks, 1994; Mezirow, 1991; Santos, 2019).

In the context of design practices, I consider that designers are usually well trained in holding ideas and judgments in suspension—while reflecting-in-action and figuring things out within uncertain contexts of problem-solving (Buchanan, 2011; Schön, 1983). This way, however, sense-making has often been used to access tacit knowledge and generate new creative solutions (Cross, 2001), therefore being goal-oriented. I wonder, though, does sense-making always need to be goal-oriented and used in service of generating new solutions?

In this PhD, delaying meaning-making counters this goal-oriented approach of problem-solving—instead, it invites us to appreciate our situations, challenges and even stuckness for what they are. In this manner, we do not skip the value of our embodied, relational and subjective experiences—to jump into conclusions. Instead, we make space to become aware of those experiences[155]. By delaying meaning-making we are, ultimately, assisting sense and meaning to emerge, take form and transform.

Comprehension 4: Designing to make the intangible tangible/visible is an intentional act

In summary, the previous comprehensions for awareness-based design lead to an important idea. That is, the notion that educators and learning designers can be intentional about designing for awareness and sense-making even if what is to be made aware is still unconscious to the people in a group. The significance of this comprehension to transformative education is that it counters the notion that we must avoid designing

153 Here I refer to the qualities of experience which were revealed in Workshop A (chapter 3) and Workshop B (chapter 2).

154 Freire (1970) argued that transmissional learning ultimately leads to oppression, dehumanization, memorization and dependency—thus, reinforcing social injustice by maintaining the status quo and limiting the ability of students to be critical and creative.

155 In the design communities I participated in, I appreciated the notion of being in conversation with materials (Schön, 1983) but I often missed other forms of knowing which valued the intelligence of our bodies and our sense of interdependent relationality.

for learning around intangible experiences given they are often implicit, unconscious or even abstract to us. The importance of this comprehension to design is that it expands our understanding of design affordances beyond the making of products, services and experiences—and offers designers new abilities and perspectives that are rooted in embodied and relational literacies.

1.3 Sensibilities

I define relational sensibility as a set of embodied, relational and co-creative capacities for attending to and working with oneself-others (humans and non-humans)[156]. We practice relational sensibility by being attuned to and working with our thoughts, emotions, felt senses and sensations while taking into account the shared relational experience—allowing emergent insights to guide actions, choices and behaviors. In this manner, I acknowledge that the inner-outer dimensions are not separate but rather inseparable—therefore, interconnected and mutually influencing[157]. In the light of this insight, we could say that the self is, in fact, a *relational self*.

In the context of the workshops, we can see clearer examples of relational sensibility when a teacher said that by listening to others sharing their subjective experiences, she discovered emotions she had never felt and expanded her vocabulary (Workshop A); or when the students co-created a video, they realized that the inner challenges which, initially, they considered to be personal were instead shared among the group. This way, they noticed that the individual struggles became compelling reasons to feel connected and belonging in the group (Workshop B).

In regards to awareness-based design, I argue that working with the relational self is the basis for working differently within a social field (Böll & Senge, 2020; Henriksson et al., 2020; Scharmer, 2009). The significance of this insight is that it counters a common pattern in systems change and transformational work—which is to emphasize the transformation of others; or even to impose change on others (Hayashi & Gonçalves, 2023).

The sketch on the following page attempts at making sense of the inner-outer dynamics of relationality[158]. Based on what the

156 Human and non-human elements include, for example, our bodies, culture, history; as well technologies, objects, spaces and the larger ecosystems (Haraway, 2008).

157 Different social practices have emphasized ‘changing the world’ while neglecting the inner dimension of individuals and social systems. For example, design thinking prioritizes problem-solving through collaboration and empathy (Brown, 2008); while human-centered design focuses on understanding user needs and designing products and services (Sanders & Stappers, 2008).

158 I am inspired by the Auckland Co-design Lab’s introduction of the Maori concept of Mauri, that is, the dynamic essence quality (energy) of anything (people, systems, Nature, objects). Humphries provokes: “If we work in systems change, what is it in my own Mauri that I need to bring into the Mauri of the environment

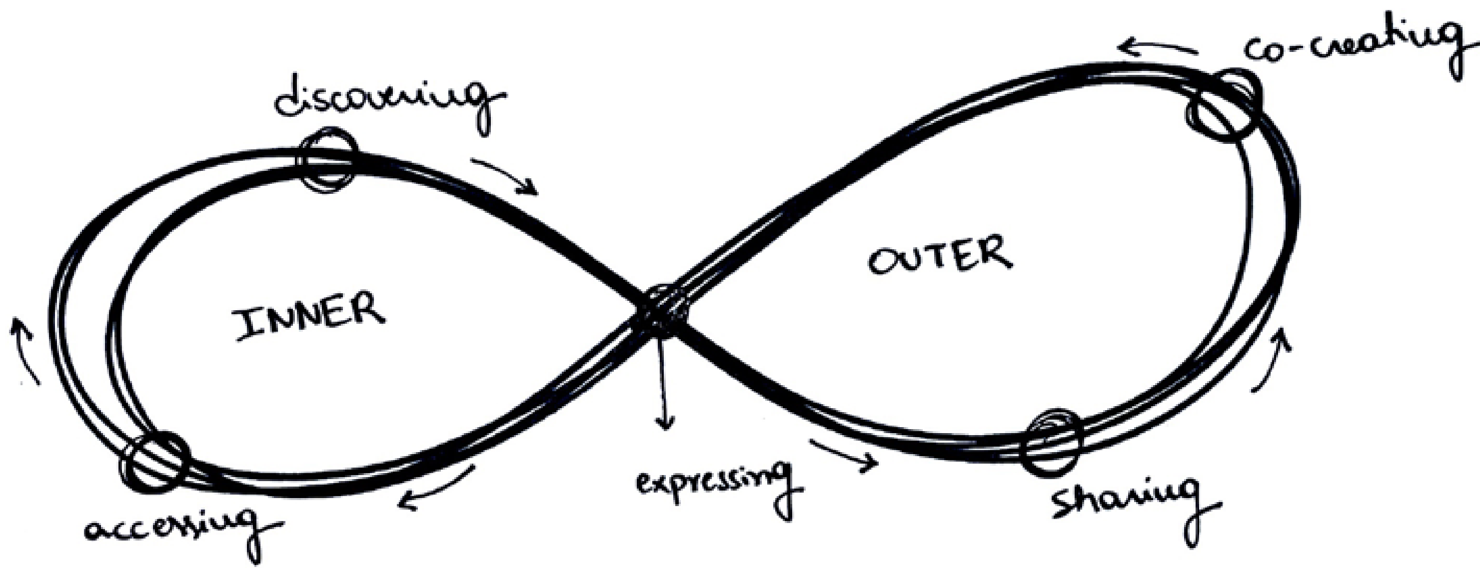


Fig.41: Embodied, relational and co-creative capacities for working with the inner-outer dimension.

teachers and students shared in the survey and interviews, the proposed analysis reveals five groups of embodied, relational and co-creative capacities: to access, discover, express, share and co-create. I am aware that there could be different ways of forming these groups. Therefore what is proposed here is one way but not the only one.

The figuring sketch helps me see that the relationship between the inner-outer dimension is represented by an infinite symbol—that is, indicating a sense of boundlessness, endlessness, and unlimitedness. This diagram invites educators and learning designers to: (1) consider relational sensibility when designing transformative learning experiences; and (2) be intentional about creating prompts that trigger specific embodied, relational and co-creative capacities; for example, considering whether a learning prompt emphasizes accessing and discovering the intangible, or instead expressing and co-creating based on the intangible.

or the system?" (Auckland Co-design Lab, 2022). I can see a link between what he introduces as Mauri Mai (i.e. the notion of "energy from"; the qualities of "being, reflection and input") with what I call the inner dimension, and "Mauri Atu" (i.e. the notion of "energy toward"; the qualities of "doing, action and output") and the outer dimension. The question is then: How are these (Mai and Atu; Inner and Outer) joined together?

From the workshops, I also observed that the relational sensibility might be impacted by the group size. For example, while the teachers engaged with embodied prompts (Workshop A), I noticed that in small groups (two-three people), there was a tendency to centralize one's attention on oneself or on a single other person. Whereas in a group of five people, there was more relaxation—which allowed participants to notice the relational qualities of the group. I also learned that when the teachers formed larger groups (more than ten people), the complexity of working together while attending to the whole group considerably increased.

In light of these discussions, new questions arise: How does relational sensibility vary according to the group size? How can learners, educators and designers grow embodied, relational and co-creative capacities? How could relational sensibility contribute towards awareness-based collective creativity (Hayashi & Gonçalves, 2023)?

2. Entanglements

In this section, I share practice vignettes from bringing ABD into applied contexts[159]. The fieldnotes are based on three commissioned projects: at a social learning lab at a university in Sorocaba (Brazil), through a design research project in Melbourne (Australia), and at a high-school in São Paulo (Brazil). The reasons why I share these practice vignettes are: (1) to illustrate the attempt of bringing research findings into practice; (2) to surface new insights and generative questions; (3) to consider what about ABD might be useful in vastly different contexts.

The practice vignettes below are written through first-person accounts—emphasizing the memory of specific moments. This approach is inspired by how I interviewed the students and teachers in Workshop A and B (ACT II). The premise behind this approach is that a single moment can help us access vast meaning (Petitmengin, 2007). Each vignette reveals an entanglement—that is, a complex knot or tension where two or more aspects are intricately interwoven. The entanglements help convey the intricacy, interdependence and challenges inherent to applied practice.

These knots and tensions ultimately demonstrate the importance of holding paradoxes in a creative practice. Therefore, it is not my intention to present clear-cut solutions to the entanglements. Instead, my goal is to help delineate what some of the paradoxes are. Reflecting on these entanglements presents new generative questions—which I share with educators, learning designers, educational leaders and anyone interested in creating transformative learning experiences.

159 What aspects of these projects resonate with me? What do these projects teach me about the literacies, comprehensions and sensibilities I am proposing? What do they help me see about the implications of bringing awareness-based design to context?

Practive Vignette I

11th Grade Interdisciplinary Project Teacher—Futures Literacy, 2021 (Avenues the World School, São Paulo, Brazil).

I was particularly looking forward to this day of meeting my manager. Upon arriving at the school, I looked for a working spot by his office—so I would be nearby at the meeting time. I couldn't wait to have the one-on-one conversation about a class of mine which he had attended in the previous week. During an intense week of teaching, I was realizing how reflective one-on-one meetings energized me and helped me get to what matters as a teacher. However, on that particular day, there was something different.

My manager politely asked me to "get comfortable!"—which meant sitting on a comfy chair that reminded me of the relaxed atmosphere of a therapist's room. Of course in order to feel relaxed, it meant I had to downplay that he represented an authority figure. His first question as a well-trained coach was: "How do you think it went?" I could sense a smile forming on my face: I love these questions!, I thought. I described how excited I was about the premise of the class: I designed an activity in which I brought half of the content in the form of provocations; and the students had to fill in the gap of the other half, with their inputs, perspectives, actions. I shared that the rationale was based on trusting the relational agency of the group: If you have to work with transformative learning, you have to make space for the group to guide where to go next.

However in the context of a K12 classroom (a shout out to all teachers out there!), the underlying fear is that when students are given too much freedom, control will be lost. Unfortunately to my bad luck, this was precisely the feedback my manager had for me: "You lost control of the class; and that is not the class we want for our school". The sentence was like a splash of cold reality on my enthusiasm. He went on, "Your idea of operating from collective wisdom is a form of idealism that does not recognize where those students are at". The meeting ended with an abrupt excuse: "I am sorry for the harsh feedback but I had to be clear". Before I could even regroup myself, I was out of the door and running late for my next class.

Fig.42: Students work from open-ended questions/ inquiries to make tangible interventions and projects. Avenues The World School, São Paulo, Brazil, 2022.

"Before I could even regroup myself, I was out of the door and running late for my next class".

2.1 Entanglements in relational agency (Practive Vignette I)

When I went into that class, my premise was that if we are to work with relational agency and the intelligence of a social group, we need to make space for the choices, actions and interests of that group[160]. Reflecting back on this practice vignette, I would agree that I probably lacked skills of classroom management on that day. However, to deny relational agency as a *third teacher* in the room is also a blind spot to education[161].

As a teacher, the entanglement for me was to consider: How to trust the students while drawing the necessary boundaries? Could the students become aware of the dynamics of the relational space without enacting it? How could the group develop relational co-creative capacities without seeing where they are at that moment? By operating from a premise of trusting the collective, I discovered that, as a teacher, I was setting myself up to meet the group where it is at—and according to my professional practice, most groups are at various stages of development.

I believe the paradox revealed by this practice vignette is somewhere between chaos and creative freedom: How can students develop creative self-reliance if their behavior is constantly monitored or controlled? Yet, what is the minimum structure that a learning activity requires in order to allow for creative freedom while not falling into unstructured chaos? To what extent is the apparent chaos perceived by teachers their own bias? How different would the classes be if we genuinely trusted the relational group as the third teacher?

160 This PhD introduced the sensibility of attuning to self and to others simultaneously (section 1.3). Working with self and others means to fundamentally trust ourselves as well as the others—which is based on the view that fragmentation arises from a sense of heightened individualism and the lack of a coherent social fabric.

161 Here I refer to the first teacher as the classroom teacher, the second teacher as the peer-to-peer learning, and the third teacher as the relational space of interactions.

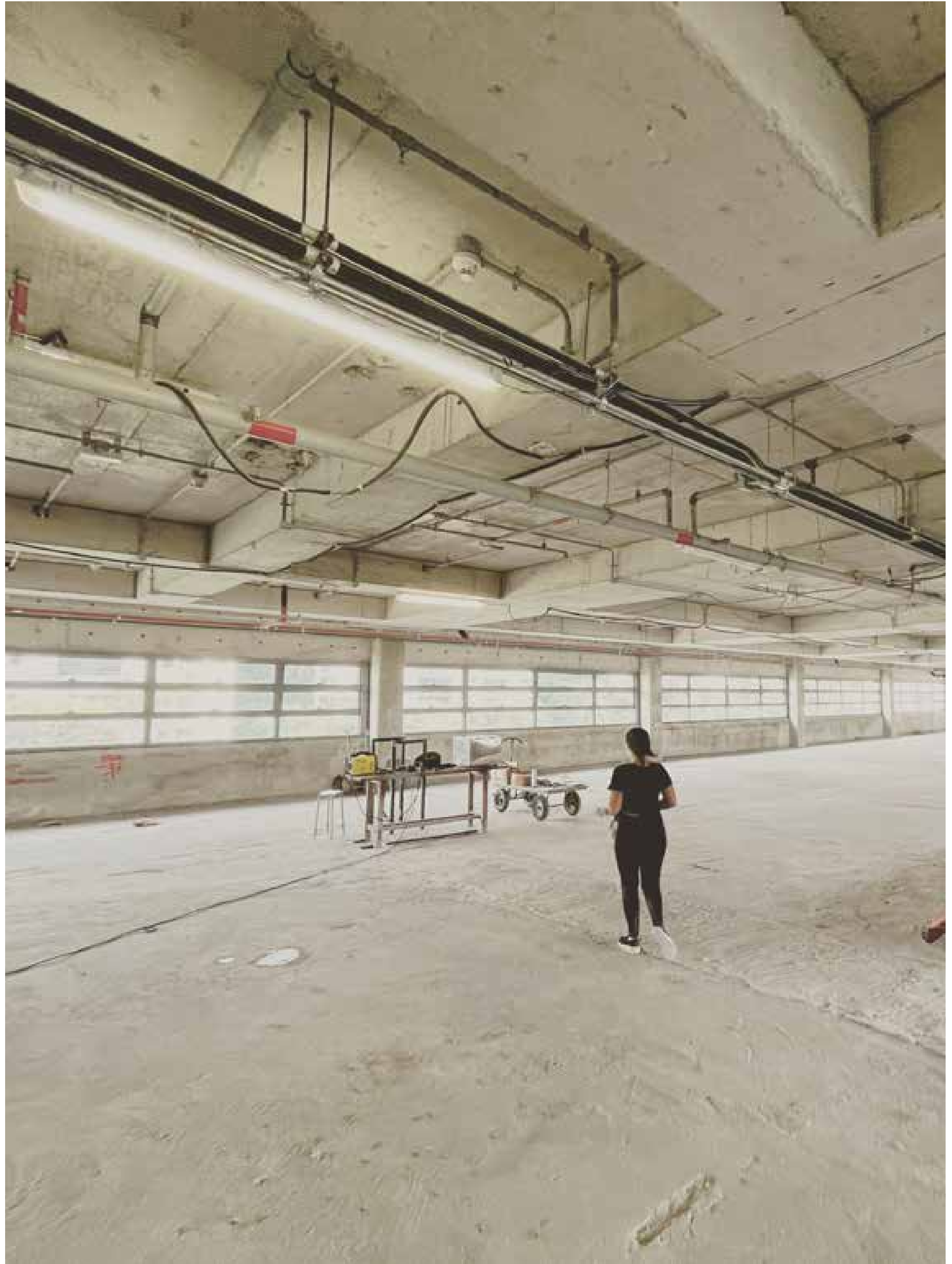


Fig.43: Student runs towards a hidden spot where she has learned to recycle plastic (São Paulo, 2022).

Futures Literacy

One day at school, a student told me “I have to show you something”. And there we went, she took me into an empty floor of the building where an entire new section of the school was to be inaugurated. With materials the school was throwing away, she was cutting metal and building an oven to heat and recycle plastic. While walking around we found magazines of when the school was just an architecture plan. With typical teenage honesty, she told me: “Great marketing!”. In that instant I thought, k12 education is full of challenges but some moments are filled with meaning and remind me of the treasure which is to learn.

Practive Vignette II

Research consultant, 2022 (Monash University, Melbourne, Australia).

The questions were: *What do you think? What do you Feel? What do you value?*. The request is clear, I thought, by designing these cards I am asking you to bring yourself into this situation. We decided it is best that we try it out. “Ok, we do one round”. “You will pick up a situation card, in which you will read about the experience of an autistic person in a work environment. Then, you will not speak about what you think of their situation. Instead, you will let a moment of your past come to your mind. Something in your memory that resonated with the card. Taking a step further, you will share how it felt—and not just what you think of it. Lastly, reflect on what you valued about that experience”.

As she spoke, I felt like slowly submerging into her experiential memory. Her story evoked images in my mind, carried with feelings, resonances and memories of my own. When she finished sharing, we switched roles. Now, it was my turn to pick up a mirroring card—and reflect back what I heard through a metaphorical image. “What you shared made me feel like I was standing alone in an open field. There were big threatening clouds. But I was not scared because there was light on the horizon”. As others continued to mirror her experience back, I could see her eyes brighten up even though it was online. We were touched by an inner warm quality of the experience. At that moment, the autistic situation initially described on the card was not only someone else’s life, it had brought us to connect with our own.

Fig.44: AI-generated images for a deck of cards (Autism Learning Encounters). Monash University, Melbourne, 2023.

“What do you think? What do you feel? What do you value?”

2.2 Entanglements in vulnerability (Practice Vignette II)

Working with/from our felt experiences often brings up vulnerability—and the inherent discomfort associated with not knowing and emergence. Through practice, I learned that accessing vulnerability can be a gateway into shifting the inner quality of a relational space. This way, when bringing relational sensibility into practice, I intended to create learning activities that help groups access a shared space of vulnerability; and use it as a threshold into a shift of perception.

From bringing relational sensibility back into practice, I learned about a few things that might go 'wrong'. One aspect is that designing for vulnerability requires designing for safety[162]. If people do not feel safe in a group, the likelihood of the activity not working is considerably high. When not feeling safe, people could, for example, resist doing what the activity is asking them to—or even become defensive. Therefore, to design for relational sensibility will often call upon designing for safety.

A second important aspect is that designing for vulnerability asks people to hold (at the same time) discomfort and possibility. That is, the discomfort associated with accessing and sharing feelings, emotions and thoughts; and the fertile ground which is intrinsic to emergence. In the case of the practice vignette above, I realized that holding discomfort and possibility is, in fact, a complex skill set. This skill set involves, for example, a person's ability to attend do and lean into their subjective lived experience; a person's capacity to notice and open up to the relational felt experiences of others; a person's ability to speak of their subjective experience without projecting onto the experiences of others; and a person's capacity to hold the relational space of possibility even though it might feel uncomfortable.

The practice vignette helped me reflect upon: What would happen if a person (or a group) has not yet refined these skills? By working with groups, I observed that when people did not master (at least partially) the skillset of holding discomfort and possibility, the activity did not go as I had planned it. For example, people's response could be that they feel confused and do not understand what the activity is asking them to do. Initially, I assumed the confusion derived from a lack of clarity in the instructions. However, even after considerably revising the instructions, some people still felt confused. Then I realized that it could also be a lack of a skill set. Therefore, I wonder: How could we help people

162 In Workshops A and B, some approaches helped when designing for feeling safe. For instance, people made personal reflections but shared when they felt comfortable doing so. Other times, we removed the personal orientation of what was shared. For example, the prompt *Voices of the Emotions* asked participants to walk across the room and write down on papers (spread out on the floor) what a particular emotion was telling them. By externalizing it as the "voice of an emotion" (i.e. not *my* voice), we reduced the participants' self-consciousness and increased their ease to share.

understand and prepare to engage with a skill set which they have never reflected upon before? How might we assist groups in practicing and growing relational sensibility?

Practive Vignette III

Learning design consultant, 2020 (Facens, Sorocaba, Brazil).

The audience looked interested and engaged with what I was saying. People's eyes had brightened up and their bodies were slightly forward. I was sharing examples from working with inner development in higher education. I was feeling confident and happy as I sensed their resonance with the intangible, ineffable qualities of the work. I also felt accomplished and satisfied that, after all, I could bring invisible experiences into words, images, forms—and this made sense to people. As it turns out, there was a pervasive appreciation for all the hard work involved in designing for the intangible.

"The presentation is over", the moderator said, "does anyone have a question?" This woman (whom I knew to be an important professor) picked up the microphone and bluntly asked: "Why are you trying to give language to the intangible? Is it even possible or necessary?" The questions had come at me, catching me off guard. It felt as if my satisfaction had suddenly begun to leak. I could not help thinking: after all these years working to make the intangible tangible, what does it mean to be asked if it is necessary?

Crossing the sudden bump of shock, I realized I had to answer: Thank you for your question, I said. To give language to the intangible might be, in fact, a paradox. But I learned from practice that without language it is much harder to become aware; and without awareness, it is much harder to change. The woman seemed puzzled at my answer and did not look convinced. As the session ended, she rushed into another commitment while I stayed back— taking the time to acknowledge how entangled I was left.

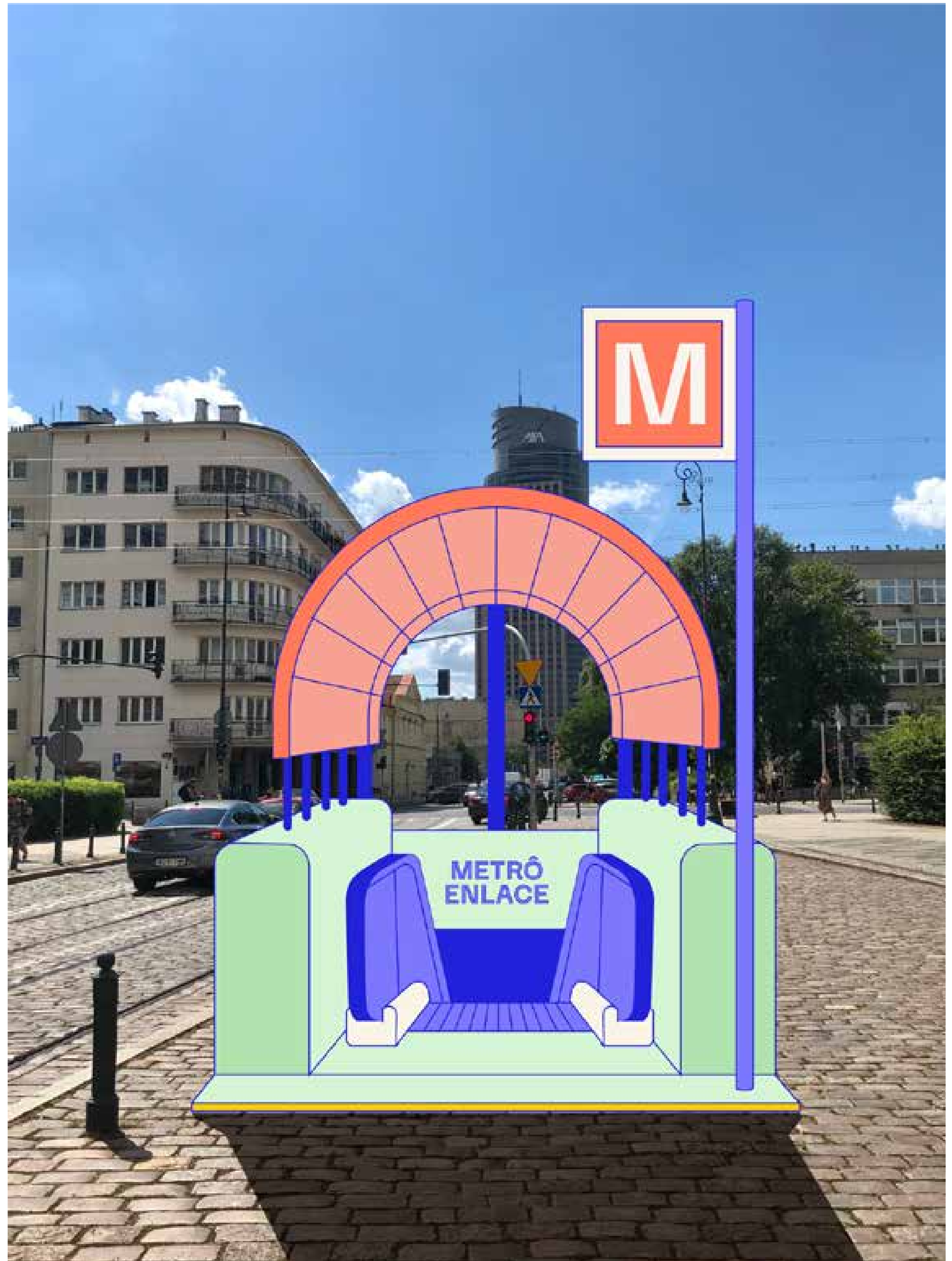


Fig.45: Metrô Enlance—transforming the inner development goals in learning activities for higher education students. Facens, Sorocaba, Brazil, 2022; (Graphic design: Thais Felix).

“Why are you trying to give language to the intangible? Is it even possible or necessary?”

2.3 Entanglements in language (Practive Vignette III)

In working with people from different backgrounds and cultures, I have come across a diverse range of responses to the attempt of giving language to felt, embodied, non-verbal, relational experiences. One pattern of response has been like in the case of the practice vignette above. That is, some people might think that offering words to embodied experiences diminishes the quality of the experience—as it can feel reductionist. The main argument is that the moment one ascribes language, there is a shift of attention from the embodied felt experience to the cognitive, thinking mind[163].

Another opposite pattern of responses I came across is that some people think that ascribing language, in reality, enhances embodied experiences. The main argument is that artistic and poetic language can bring clarity to a felt experience; therefore leading to a sense of deeper insight into an individual or group context.

From practice observations, I agree with Vygostky (1934) that it might not be possible to arrive at a language that perfectly captures the entirety of an experience—just like putting on a ready-made garment.

163 I have also witnessed people report a shift of attention away from the embodied experience in the case of introducing other art-based prompts like combining embodiment and photography, embodiment and video, or embodiment and sketching.

To some degree, words will reduce the vastness of an embodied moment. But, in such cases, is it the role of language to capture the entirety of an experience or to help us get to a depth of insight? Throughout the PhD I have seen that both cases are true: that is, I have observed moments when giving language felt simplistic; and moments when attributing words enhanced clarity.

Therefore I wonder: Is it true that we cannot continue to feel embodied while giving language to an experience? What are the attributes of verbal language that could support sense-making while not trying to pin the intangible down?

2.4 Other entanglements

In this section, I have tried to bring some of the PhD findings back into practice while revealing entanglements, knots and tensions. My intention is not to present solutions but to point out that bringing practice frameworks back into context will naturally raise new questions. This way, I also acknowledge the importance of holding paradoxes in a creative practice. I decided to outline three examples while recognizing that there have been multiple other entanglements in bringing this work back to context. In conclusion, I would like to mention some other entanglements, knots and tensions.

For example, as a school teacher I observed that schools continue to privilege cognitive, rational approaches to creativity over embodied and felt ways of inquiring. I noticed, for instance, that when

the primary teachers worked with younger children, embodiment and play were key elements. However, as the children grow up, the classroom methods emphasize debates, analytical thinking and rational discussions.

Another tension I noticed is that becoming aware of an intangible experience alone does not guarantee transformative learning. In the short term, I realized that insights can be difficult to grasp, make sense and/or translate into sustained action—therefore, an insight can easily fade away[164]. In the context of high school teaching, for example, I also realized that the ineffable quality of awareness can come across as abstract for some students (and therefore considered irrelevant). I recognize that it might be difficult for students to learn about the importance and agency of their embodied, felt and non-verbal experiences when much of the social norms underscore, for example, being rational, not demonstrating vulnerability, competing to achieve goals and reach more merits.

Finally, another tension has been that working with relational sensibility and agency is often an open-ended learning process; in which we widely engage with not knowing and emergence. However, in working with groups, I observed that people's tolerance to not knowing seems very limited; and that not knowing is often seen as 'bad' and 'not desirable'. I observed, for example, that some students considered not knowing as a sign of threat and loss of control. However, I also heard some students voicing that not knowing how to act was their gateway into creative freedom, further self-reliance and trust in the group.

164 I also recognize that sometimes even though people are willing to engage in change, the systems they are a part of could be making things difficult for them to act or move forward.

Fig.46: Making Aware Residency, Monash Prato, Italy, 2023. Photo credit: Aurora Montecucco.

ACT I (*Jo*) reflected upon my previous practice to draw four theoretical pillars of this research—emphasizing my motivation to bridge the tangible and the intangible. ACT II (*Ha*) introduced the methodology and the two main sites of inquiry for this research (i.e. Workshops A and B). ACT III (*Kyu*) discussed the main research findings and presented the potentials and entanglements of bringing insights back into practice. Here, to conclude, I reflect back on the research aims and approach, and clarify the main contributions.

1. Reflecting on the research aims

Making tangible to make aware

The intangible dimensions of lived experience can hold vast meaning and sense. Every moment, the quality of our experience depends upon our thoughts, emotions, felt senses and sensations. These experiences are difficult to grasp—and becoming aware of them can help us assist their transformation. This PhD asked, how to make the intangible tangible/visible?

This research revealed that making the intangible *tangible/visible* is connected with the acts of making *space*, making *aware* and making *sense*. That is, when the research workshop participants expressed intangible qualities in tangible/visible forms, they often were, as well, making space for emergence and not knowing, becoming aware of the intangible, and co-generating new sense and fresh meaning. This way, the research made apparent that the acts of making are interdependent—therefore, one naturally flows into the other without a prescribed way of beginning or ending.

In the context of transformative learning (TL), though, the relevance of making the intangible tangible/visible is contingent upon the extent to which learners become aware of existing beliefs, mindsets, emotions and felt senses. Thus, making aware has the potential to amplify transformative learning. Acknowledging that shifting ways of thinking, feeling and acting are uncomfortable, the practice of making aware is a counter-intuitive invitation to delay meaning-making and hold space for the discomfort of not pinning the intangible down.

To sum up, this dissertation demonstrates that designing to make the intangible tangible/visible is an intentional act towards transformative learning. Following this path, I invite educators and learning designers not to dismiss what is invisible or unconscious to a group; not to undermine the intangible as ‘abstract’ or ‘irrelevant’—when, in fact, it pervades all meaning and sense of the tangible, visible world.

Affordances of making aware

In making the intangible tangible, the findings indicate that what is made visible are the types and qualities of inner experiences—for example, memories, vulnerabilities, emotions, longings, choices, ideas, interpretations, etc. The awareness-based design prompts supported the students and teachers in becoming

aware of the intangible by: (a) offering diverse ways of engaging with their experience; (b) helping surface pre-reflective knowledge; (c) introducing new questions, frames of thinking and ways of making sense; and (d) assisting meaning-making while in relationship with others. Offering diverse ways of engaging with experience and assisting relational meaning-making ensure that insights do not float. While surfacing pre-reflecting knowledge and introducing new ways of making sense help ground insights in ways that can lead to transformative shifts in future action.

Through this research, it becomes evident that the design prompts assisted inner transformation through a relational process of awareness and sense-making. That is, by engaging with material, embodied and/or visible prompts, the students and teachers performed a series of inner acts towards becoming aware and making sense of the intangible. These interior gestures of relational subjectivity were often unconscious yet active and dynamic.

The inner acts included, for example, to evoke, notice, identify, label, realize, express, communicate, question, reflect, interpret, add, contribute, hold, and/or appreciate. By highlighting these interior gestures, I point at how our experiential world is rich in sense and signification—although often subtle and unconscious to us. In this research, I demonstrate that even though the inner acts can be at first unconscious, one can become aware of them. In learning this, educators and designers can take into account the inner dimension of becoming aware and making sense of the intangible.

2. Reflecting on the approach

A meta-contribution to practice-based research

I started this research by critically examining and positioning my own practice prior to the PhD (ACT I). That is, by looking at formative experiences that shaped my design practice and how I brought those insights to the work of embodied practitioners in a systems change community. This way, I intentionally chose not to begin with a systematic literature review that would be disconnected from my lived experience and disembodied from my practice. Instead, in beginning with my practice I sought to create a dialogue between my practice and an expansive field of relevant interdisciplinary literature.

From situating the research, questions and practice-based insights began to surface. The emerging questions were then carried into the contexts Workshops A and B presented (ACT II). In return, iteratively revealing a new set of findings and discoveries. Finally, I brought these new insights back into context in three commissioned projects—as a research consultant and/or as a high school teacher (ACT III). Reflecting back on this trajectory, I learned that practice-based research is not only the study of practice but also the examination of what happens when you recursively engage with theorizing with and from practice. By weaving the evolving insights from different contexts, I argue that

what I was doing was a form of action research on my own practice.

The interplay of design and embodied awareness

Throughout the PhD, I collaborated with practitioners, researchers, artists and educators from multiple fields—including education, psychology, systems change, social innovation, neuroscience, social arts and design. This way, I recognize that the research's contribution must be examined from the perspective of practice-based design within a broader interdisciplinary space. Specifically speaking, this PhD contributed by bringing design to embodied awareness and embodied awareness to design[165].

Reflecting back, it is clear that awareness-based practices bring an embodied, gestural and felt contribution which is uncommon to design; while design brings a material and visual contribution which is unusual to embodied awareness. In this way, the interplay of design and embodied awareness amplified the groups' ability to become aware and make sense of the intangible.

The inner-outer dimension of transformation

At the outset of this research, I conceptually divided inner from outer experiences in the interest of clarity[166]. However, throughout the PhD, this dichotomy turned out to be a conceptual struggle. I was often asked, “Why are you separating them?”. Through examining my practice, I learned to acknowledge that inner and outer dimensions of experiences are interdependent and mutually influencing[167]. However, I wish to also recognize that my practice orientation has been to contribute towards collective shifts by laying emphasis on the inner dimension of transformation. I choose to emphasize the inner dimension because I believe it is the blind spot in education—and in change work more broadly. In the case of this research, I focused on the awareness and sense-making aspects of inner transformation.

If we wish to co-create health, well-being and a sense of possibility within the groups/ systems we are a part of, we need to truly take into consideration

165 The primary method consisted in designing and facilitating the use of open-ended awareness-based prompts to surface and ground intangible experiences in tangible, embodied and/or visible forms.

166 By inner, I refer to the interior, felt (and/or cognitive), subtle and often unconscious dimension of individuals, groups and systems; by outer, I refer to the external world which includes people, objects, spaces, infrastructures, contexts.

167 For example, when the students realized that their apparently “private emotions” were, in fact, interconnected with the feelings of others within a larger social field; or when the teachers discovered emotions they had never reflected upon by hearing about the experiences of their peers.

ourselves in relationship with one another[168]—that is, to attend to, reflect upon and work with our thoughts, emotions and felt experiences within a relational space. Therefore, by recognizing the interdependence of the inner-outer dimensions, I invite: (1) designers to consider the ways they include themselves in the transformative work they become involved in; and (2) educators to design for transformative learning taking into account the inner dimension of individuals, groups and systems.

3. Awareness-based design

This PhD proposes awareness-based design (ABD) as its main contribution. ABD is framed as a method-pedagogy aspiring to become a living curriculum—which includes a set of relational, embodied and co-creative literacies, comprehensions and sensibilities towards becoming aware and making sense of the intangible.

It is important to highlight that ABD is a conceptual framework derived from practice. Given that the practice is place-based and context-specific, it unfolds and shifts in response to the needs and interests of the groups. Therefore, this PhD offers a practice-oriented contribution by presenting ABD as a practice framework. It should be noted that ABD is not a set of replicable tools (a toolkit)—but instead a set of comprehensions and sensibilities to knowing, being, doing, relating and co-creating.

The literacies include: (a) *making visible:* expressing the intangible in tangible/visible forms; (b) *making space:* staying with not knowing and opening up space for emergence; (c) *making aware:* noticing and becoming aware of the intangible; and (d) *making sense:* asking questions, drawing out patterns and co-generating new meanings. In this manner, ABD is about making in the in-between spaces, gaps, playing fields where we find ourselves discovering, not knowing, and inquiring as whole and relational selves.

By relational sensibility, I mean a person's capacity to sense, perceive, access and/or engage with the relational felt qualities of a group. This PhD revealed that relational sensibility includes embodied and co-creative capacities—such as the abilities to access, discover, express, share and/or co-create based upon relational experiences. Thus, this research proposes that cultivating relational sensibility can contribute to the generative quality of social fields[169].

Owing to the fact that this PhD's contribution emphasizes the relevance of becoming aware and making sense of the intangible in the context of TL—for future inquiry, it may be worthwhile to examine the logical

168 Here, I also include our relationship with materials, places, contexts and history.

169 By generative, I mean the group's ability to produce, create, or generate new content, ideas, or outcomes within a social field.

progression from awareness to agency. For example, by asking: How does relational sensibility contribute to relational agency? How can awareness-based design play a part in the development of collective creativity?

In the context of education, future work could elucidate principles, methods and approaches for the development and application of pedagogies of togetherness. That is, the pedagogies that recognize the relational space as the third teacher[170]. Subsequent studies could examine, for instance: How can teachers and learners become aware of the direct and shared experience of being together? How to notice moments when they engage or disengage from a group? The studies could evaluate if and how the relational felt quality shifts when interacting physically or digitally. These further investigations could, ultimately, contribute to understanding how teachers and learners can co-create generative social dynamics[171]. The implications of these studies could help schools and universities improve collective well-being and creativity by shedding light on the intentional development of relational capacities.

In addition, I believe prospective practice-design and artistic research could emphasize methodological development through further investigations of embodiment and materiality. That is, by inquiring: How can the combination of embodiment and materiality deepen learning? What other methods could be created by, for example, bringing together embodied practices and photography; or embodied practices and sketching or object-making? What are the specific affordances of these different embodied and material forms in regards to the development of relational agency?

4. A final gesture

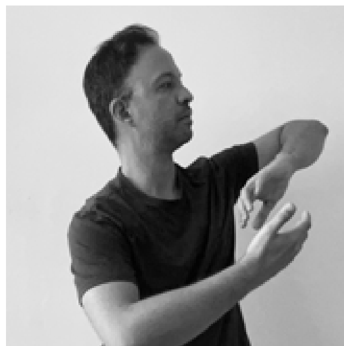
I would like to close this PhD with a final gesture. The gesture I embody is called *relational agency*—and it represents a seed-intention for an emerging body of research which this PhD has brought me to. I acknowledge that my work as a researcher is never finished. To the extent that the research project reveals new discoveries, these insights keep on generating new inquiries—and I continue to allow those to guide me where to go *next*.

170 That is, in addition to the school teacher (i.e. first teacher) and the peer-to-peer learning (i.e. second teacher).

171 By co-creation, I mean the ways in which people choose to initiate or to follow ideas; the ways they choose to agree or disagree; the ways they decide to do the same as others or to act differently (Gonçalves & Hayashi, 2021).

Fig.47: embodiying relational agency as a seed-gesture.

Notice how your body feels right now. Wherever you are seated or standing. Does it feel tight or loose? Warm or cold? Heavy or light? Simply turn your attention to your embodied, felt, non-verbal experience in this moment. Then, lean into it—and allow it to guide where you need to move next.



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