Cognitive justice and environmental learning in South African social movements

Thesis submitted in fulfillment of the requirements for the Degree of
Doctor of Philosophy in Education

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Abstract

This thesis by publication is an applied study into transformative learning as an emancipatory practice for water justice. It is guided by the core research question: How can cognitively just learning be an activist practice in social movements working towards water justice?

To address this question, I use the applied critical realist approach which makes use of three moments of moral reasoning which are very similar to the approach adopted in the learning intervention that is the focus of this research. These three moments are: Diagnose, Explain, Act – sometimes known as the DEA model (Bhaskar, 2008, 243; Munnik & Price, 2015).

The research object is the Changing Practice course for community-based environmental and social movements. The course was developed and studied over seven years, starting from the reflexive scholarship of environmental learning in South Africa, particularly the adult learning model of working together/working away developed through the Environmental Education Association of Southern Africa in partnership with the Environmental Learning Research Centre at Rhodes University (Lotz-Sisitka & Raven, 2004). We (the facilitators/educators) ran the Changing Practice course three times (2012-2014; 2014-2016; 2016-2018), in which I generated substantive data which forms the empirical base on which this study was developed. .

We found the concept of cognitive justice (Visvanathan, 2005; de Sousa Santos, 2016) to be a powerful mobilizing concept with which to carry out emancipatory research and learning, in three ways. First, it brought together a group of researchers, activists and practitioners from different organizations to work on how to strengthen the role of civil society in monitoring government water policy and practice (Wilson et al., 2016). Second, within the Changing Practice course itself, it became a principle for guiding learning design and pedagogy as well as a way of engaging in dialogue with the participants around the politics of knowledge, exclusion and inclusion in knowledge production, systems of oppression and multiple knowledges (Wilson et al., 2016; Burt et al., 2018). Thirdly, the participants' change projects (the applied projects undertaken during the 'working away' phase between course modules), allowed participants to

draw on different knowledge systems, which they learnt to do in the 'working together' modules, and to address cognitive justice concerns linked to environmental justice. The change projects also challenged our learning pedagogy by raising contradictions in the course's approach to learning that needed to be transformed in order for our pedagogy to be more cognitively just.

Throughout this thesis I argue that the work of cognitive justice deepens the connections between people, institutions and structures, particularly in relation to transformative learning. Our intention was to identify and critique structures and ideologies that perpetuated oppressive relations, and then to identify and enact the work needed towards transforming these relations. This is why I often refer to cognitive justice as a solidarity and mobilizing concept, and I use the term cognitive justice praxis to mean the reflection and actions that are needed to enact cognitive just learning. The facilitators and participants of the Changing Practice course worked to remove the layered effects of oppression both in the practice of water justice and in the learning process itself. We worked, however imperfectly, with a caring, collectively-held ethic towards each other and the world.

Using the DEA model I applied the critical realist dialectic to analyse contradictions and generate explanations through four articles as reflexive writing projects (See Part 2 of this thesis). I used the critical realist dialectic both to reveal contradictions, investigate how these contradictions have come to be, and to generate alternative explanations and action to absent them. Through this research I identified four essential mechanisms for cognitively just environmental learning: care work, co-learning, reflexivity and an interdisciplinary approach to learning scholarship as learning praxis.

The essential elements that made the Changing Practice course so effective were the working together/working away design, the encouraging of participants to make the change project something they were passionate about, and the situating and grounding of the Changing Practice course within a social movement network.

We were able to show that for academic scholarship to contribute meaningfully to cognitively just learning praxis, it needs to be collaborative and reflexive, and start from the embodied

historical and contextual experience of learning as experienced and understood by participants on the course. This demanded an interdisciplinary approach to work with contradictions in learning practice, one that could take into consideration different knowledges and knowledge practices beyond professional disciplines. Both social movement communities and scholarly communities have valuable knowledge to offer each other. As argued in article one, rather than a lack of knowledge, what more often limits our emancipatory action are factors that prevent us from coming closer together. (Burt et al, 2018)

This research revealed that social movement learning towards water justice is multi-level care work, the four levels being: individual psychology, our relations with others, our relations with structures such as our social movements, and our relations with the planet. When such care work attains self- reflexivity, practice-reflexivity, co-learning and collective scholarship, it is able to absent the contradictions that inhibit cognitive justice. This thesis is a record of our attempts to learn how to achieve this.

Declaration

I declare that this thesis is my own work, and that all other sources used or quoted have been fully acknowledged and referenced. It is being submitted for the Degree of Doctor of Philosophy at Rhodes Rhodes University, and has not been submitted for a degree or examination at any other university.

Signed

Jane Caroline Burt

March 2020

Appreciations

The greatest achievement of this scholarship are the relationships that have formed and/or strengthened during the 8 years it has taken me to complete it. I have worked on this PhD in 2 countries, 7 provinces, 10 towns and 13 homes so I also appreciate the landscapes and animals that accompanied me.

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I am sure I have forgotten to mention many names and creatures – forgive me and know you are thanked.

There is an African saying that it takes a community to raise a child. I will extend this truth to it takes caring scholarship communities and generous friendships to complete a PhD.

With immense gratitude to all. At last it is done!!!

Dedication

To all those who care already

The return

the gods return
we hear them unpacking on the stairs

the ones who came from
the gate of crocodiles
              the ones who caused
the unpredictable weather

the guardians of the doorframe
              tuned to the night insects
cracked as the tree of memory

with them the ghost
the tyrant father
              forgive me, he explains
I was marooned in thirst

let him die a second time
his death will be a downpour
to extinguish electronic fires
*
The wind returns
The *moya* of Steve Biko   returns

the wind asks
who will care for the people
              when our economies have turned to casinos
              when our ecologies have turned to zoos?

I asked the gquira from Cala
who goes to the sea each year
to renew his strength from the ocean snake

-the gqira asked the powerful dead
the powerful dead answered him:

language will be born again from silence
the ceremonies of time will be restored

plants and animals will decide
which human voices speak for them

the ones who care are here already

                        Robert Berold

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Acronyms

ABCD	Asset Based Community Development
ANC	African National Congress
AWARD	Association of Water and Rural Development
CEO	Chief Executive Officer
CHAT	Cultural-Historical Activity Theory
CMA	Catchment Management Agency
CMF	Catchment Management Forum
DEA	Design, Explain, Act
ECWC	Eastern Cape Water Caucus
EEASA	Environmental Education Association of Southern Africa
EJNF	Environmental Justice Networking Forum
ELRC	Environmental Learning Research Centre
EMG	Environmental Monitoring Group
GEAR	Growth, Employment and Redistribution Policy
GWC	Gauteng Water Caucus
HESD	Higher Education Sustainability Research
IWRM	Integrated Water Resource Management
MWC	Mpumalanga Water Caucus
NWRS2	National Water Resource Strategy 2
NFA	Native Farmers' Association
NGO	Non-Governmental Organisation
NWRS	National Water Resource Strategy
OCSN	Olifants Civil Society Network
RDP	Reconstruction and Development Plan
RESILIM-O	Resilience in the Limpopo Basin: Olifants
RU	Rhodes University
SAJEE	Southern African Journal of Environmental Education
SAWC	South African Water Caucus

TMSA	Transformational Model of Social Action
UKZN	University of KwaZulu-Natal
USAID	United States Agency for International Development
VEJA	Vaal Environmental Justice Alliance
WCWC	Western Cape Water Caucus
WESSA	Wildlife and Environment Society of South Africa
WMA	Water Management Area
WRC	Water Research Commission
WUA	Water User Association

Part 1 : Context and theory

Figure 2: Toxic Tour in Emalahleni, Module 2 of the Olifants Changing Practice course

Chapter 1: Introduction

This PhD portfolio is an applied study of the evolving theory and practice of a course called the Changing Practice course for environmental activists. I coordinated and facilitated the Changing Practice course, along with others, in three different contexts from 2012–2018. The intention is to test, in practice, the critical educational theory, known as transformative learning, emerging from the environmental learning community in South Africa with a particular emphasis on social movement learning for water justice. The Changing Practice facilitators, including myself, learnt the value of a cognitive just praxis in transformative learning within social movements. We also learnt that cognitive justice praxis is agency as care work at multiple levels from the relationship of care for ourselves through to caring for our planet. This is the contribution of this PhD.

In this first chapter I briefly introduce the Changing Practice course, trace how my PhD work came about, introduce the main research question and objectives, and give an overview of the PhD scholarly articles.

1.1 A brief introduction to the Changing Practice course

The Changing Practice course is part of the new generation of change-oriented learning courses based on the environmental education course that was run through the Environmental Education Centre (now the Environmental Learning Research Centre, ELRC) at Rhodes University (RU), South Africa (Lotz-Sisitka, 2008, 2009). Since the original course design, different versions of the course were adapted to different contexts including industry, heritage and food growing (Price, 2007; Lotz-Sisitka, et al. 2012; Lotz-Sisitka & Hlengwa, 2012; Pesanayi, 2016). The version described here was designed by me and others for civil society environmental activists. It focuses mainly on educational processes relating to water injustice.

The Changing Practice course design considers three factors for each participant – their current level of knowledge, the context of their work, and their aspirations for improving an aspect of their work in activist organizations or NGOs (Non-Governmental Organisations), which usually

includes the redressing of water injustice. Understanding and changing these factors constitute the hub around which learning happens in the course (Burt & Wilson, 2017).

The aim is to ensure that learning is applied in practice. This is done through a combination of strategies, which all hinge on a practical project called the 'change project', initiated by each participant in consultation with their organization.

The primary objective of the course is to develop the ability of practitioners to support the improvement of local practices in water governance and water justice. It does this by helping participants work with knowledge in a way that is relevant to them and their context. It leads them to understand and develop the complexities of knowledge use in practice.

The Changing Practice course is structured on a reflexive 'work together / work away' basis, where participants, facilitators and mentors come together for four to five course sessions lasting three to four days at a time. Participants then apply and practice what they have learnt between course sessions for periods typically from two to three months. The 'work away' sessions include mentoring meetings which are either led by a more experienced activist or one or two of the Changing Practice facilitators. The experience of learning to develop a change project includes knowing how to do a contextual analysis, building a knowledge network, generating an action research case and devising and implementing an action plan.

The participants then bring what they have learnt and researched in their work/activist contexts back to the course sessions to forward their learning as a group. In this way, they learn how to mediate knowledge so they can respond practically, theoretically, and strategically to questions arising out of their work contexts. This approach invariably leads to changes in their thinking (cognitive change) and their strategies for social action.

Each 'working together' session is guided by a transformative question based on the critical realist dialectic (See Part 2 for how this is done in the course). The transformative question starts from what participants already know, and in their attempts to answer it they generate skills they need to describe and diagnose the underlying mechanisms for the problems they have raised.

This usually means learning to identify the contradictions in their everyday practices at multiple levels and understanding how these contradictions result in water injustices. The participants struggle with and generate explanations for these contradictions. Then they look for what is possible to transform.

All participants, as part of the course, are asked to reflect on and analyze their experiences of working as civil society activists. The skills they acquire enable them to analyze what enhances and what constrains their activism. Therefore, the course is not only about building change projects in local areas but also what it means to build a social movement that is responsive and active in water governance.

1.2 Tracing the PhD: applied research on cognitive justice praxis and learning as a practice for water justice

The trajectory of this PhD project has not been straightforward. The focus of the original PhD proposal in 2014 was to investigate the rise of trans-disciplinarity as an emancipatory response to research and practice in the earth sciences (Burt, 2014). I set out in my original proposal two main concerns as to why an inter/trans-disciplinary approach is necessary:

- Research needs to be applicable to 'life-world' problems in an open system (Luks & Siebenhüner, 2007; Hirsh-Hadorn et al., 2008; Bhaskar et al.,2010; Roux et al., 2010). In order to address complex social problems in an open system we need to draw on multiple forms of knowing (Lawrence & Després, 2004; Max-Neef, 2005; Hirsh-Hadorn et al., 2008; Bhaskar et al., 2010; Canţer & Brumar, 2011; Roux et al., 2010).

- To draw on multiple knowledges we need to see reality as layered. Since we cannot reduce the mind to the brain, or society to people, each of these realities is made up of knowledge layers, or disciplines. If we could reduce society to people we would only need to study psychology and we would not need the discipline of sociology. If minds could be reduced to brains, we could get away with only studying neuroscience. If ecosystems could be reduced to individual organisms we would not need many of the natural sciences (L. Price, email communication, 19th December 2019, Bhaskar et al., 2010, 2, 148, 115). We need to be able to develop explanations based on laminated

interdisciplinary exploration of knowledges in ways that directly address real-life problems and lead to transformative action (Nicolescu, 1999; Max-Neef, 2005; Hirsh-Hadorn et al., 2008; Bhaskar, 2010) (See Chapter 3 for a further explanation for this position).

I went on to argue that these concerns placed knowledge and learning at the core of what it meant to do inter/trans-disciplinary research and practice. I proposed that inter/trans-disciplinarity had become a key to transformative and possibly emancipatory research and practice.

I also outlined in the proposal some theories of the politics of knowledge that underpin the inter/trans-disciplinary challenge to research and practice. One of these was cognitive justice. At the time I was exploring the work of Indian scholar Visvanathan (1998, 2000, 2005, 2006) who critiques traditional science by challenging the idea that the production of knowledge can be separated from culture and context. He argues for a more democratic framework for science that challenges the view of the citizen as a consumer rather than an inventor of knowledge (Burt & Wilson, 2017).

Visvanathan's work on cognitive justice draws on evidence from development projects funded and implemented by the Global North in the Global South. I realised that his arguments had relevance for adult environmental education particularly in the Global South. Justice concerns are mostly bound to protecting and ensuring human rights. Cognitive justice is a particular concept that has emerged from the Global South. A similar and synergistic scholarship is that of epistemic justice which refers to how we relate to different knowledge systems in the process of engagement (Keet, 2014). Climate and environmental justice are focused on the intersection of human and environmental justice. Climate and environmental justice do not necessarily include cognitive justice as injustice can be framed within a particular cognitive understanding that does not include marginalised groups. Cognitive justice needs to consciously be elevated in climate justice movements through learning. This requires an understanding that how we know, how we express what we know and, where we can express what we know is as an issue of justice.

Attention to the politics of knowledge has also been a core concern of critical educational theorists, revolutionary thinkers, development practitioners and feminists and ecofeminists (some of whom I draw on in this thesis). It is these movements that argue, in different contexts, why attention to justice requires attention to cognitive justice.

I then decided to shift the PhD research focus from inter/trans-disciplinarity research-based projects to something I felt more passionate about: the role of learning as a change process in environmental justice. At the time I was running a course for environmental activists through a project funded by the Water Research Commission (WRC), a partnership between the ELRC and the Environmental Monitoring Group (EMG). In 2015, I decided to focus the PhD work on the development and practice of the course, called a 'social learning initiative', which would evolve into the Changing Practice course.

The course was developed and researched through a series of WRC projects (Burt et al., 2014; Wilson et al., 2016) and was implemented and researched through a sub-grant from the Association of Water and Rural Development (AWARD) as part of a broader USAID-funded trans-disciplinary programme called Resilience in the Limpopo Basin: Olifants (RESILIM O).

The process of facilitating the Changing Practice course led me to incorporate cognitive justice as an underpinning which opened up essential perspectives on course design and facilitation and how to approach the work generated by the participants' change projects (See Part 2). Cognitive justice demands that we work across disciplinary boundaries, drawing on both local knowledge systems and professional knowledge production, in order for activists to argue their cases from multiple perspectives. What is synergistic about cognitive justice in the context of transformative environmental learning is that knowledge is not seen as neutral but as politically constituted and contextually embedded. This aligns with critical learning theory that forms the foundation of the adult learning and change-oriented learning approaches that were being explored in southern Africa. I wanted to know what this synergy meant when practicing learning as a water justice practice.

The PhD work also enabled the introduction of cognitive justice into the broader WRC research projects (Burt et al., 2014; Wilson et al., 2016). It became a mobilizing concept with which to explore emancipatory research and learning, in three ways. First, it brought together a group of researchers, activists and practitioners from different organizations to work on how to strengthen the role of civil society in monitoring government water policy (Wilson et al., 2016). Second, within the Changing Practice course, it became a principle for guiding learning design and pedagogy as well as dialogue with the participants around the politics of knowledge, exclusion and inclusion in knowledge production (Wilson et al., 2016; Burt et al., 2018). Thirdly, in the work that was emerging out of participants' change projects, it encouraged participants to work with different knowledge systems and address cognitive justice concerns linked to water justice.

In 2016 I wrote a second PhD proposal and chose to do it by publication of articles instead of the more traditional dissertation. As my focus and research approach for the PhD included collaborative research and learning, this route made sense as it gave me the opportunity to open the PhD research to collaborative and inter-disciplinary scholarship, which is necessary in applied work (Bhaskar et al., 2018, 40). I started from the assumption that cognitive justice praxis is necessary. A Critical Realist study always starts with established theory and then retrodictively (See [Chapter 3](#)) tries to understand the context in terms of the theory – with the proviso that it may lead to a change in the theory if it fails to explain everything (Bhaskar et al., 2018).

The thesis as it is now draws on multiple theories to test and then explain why cognitive justice as an umbrella concept is vital for learning in activist practice for water justice. To work for cognitive justice means to work with multiple ways of knowing, while respecting these ways as laminated lineages, each addressing some quality of what it means to labour for emancipation. I understand emancipatory labour to be the process of removing whatever inhibits us from moving closer together as a species, closer to an interconnected relationship with the earth. This includes consciously critiquing, engaging and generating explanations of power, emergence and agency. This in turn requires accepting that knowing and learning is a relational, social and collective process. Thus cognitive justice labour (which is critical to emancipatory labour) is about the connection between people, institutions and structures, particularly in relation to critiquing

structures and ideologies that perpetuate oppressive relations and working to transform them. This is why I regard cognitive justice as a concept that facilitates solidarity and mobilisation. This PhD tests this assumption in the context of transformative environmental learning.

A note on how I have drawn on scholarly work: As this is an applied PhD I foreground practice and then generate explanations of practice in conversation with scholarship. I have chosen not to highlight particular thinkers as this does not make sense from a cognitive justice perspective. Rather I have drawn on the scholarship of the scholarly community of practice that I belong to so as to build on the work generated in this particular context. Scholarship is an ever-expanding landscape and we rely on our knowledge networks to make these connections.

1.3 Research question and research objectives

The main research question of this thesis is: *How can cognitively just learning be an emancipatory labour within social movements towards water justice?*

To address this question, I've followed the applied critical realist model of practical reasoning which consists of three moments of moral reasoning very similar to the approach we adopt in the Changing Practice course (See Part 2). These three moments are: Diagnose, Explain, Act – sometimes known as the DEA model (Bhaskar, 2008b, 243; Munnik & Price, 2015). I explain this further in Chapter 3. The DEA model is a powerful approach to practical problem resolution for social transformation.

In Chapter 2 I explore how the Changing Practice course is the part of the ongoing applied research on environmental learning in South Africa which includes grappling with the silences and contradictions in our work. These contradictions led to exploring cognitive justice praxis, during my early work in the water sector and when I first ran the Changing Practice course for water activists (see article four: "Imperfect Activist-Educators", Part 2). I started working in the development sector in community theatre in the mid-1990s. I used puppetry and was influenced by Boal's work on the theatre of the oppressed (Boal, 1979). I was also a member of a Xhosa dance company based in the local township. This had a significant influence on my politics and

the role of dance in community. I became involved in environmental education while doing a Masters in Environmental Education from 1997–1999. By that stage the vibrant NGO sector in South Africa was starting to diminish, and it had become harder to earn a living from working in people's education. I found myself working in institutions which demanded a more professionalized practice of environmental learning, but in my heart I always missed the creative and dynamic (though often challenging) work of people's education. I began to realize that issues of race, gender and the effects of colonialism and apartheid on our hearts and minds were still missing in practice in environmental education. We did not often mention inequalities between us in the environmental education sector except as a lens to explain environmental issues and responses. This is something that is significantly shifting as we face these silences together including what makes it difficult to have these conversations in an academic context.

> "During my time within the academic space I have often felt 'halved'. That a lot of what enables my agency in the world is excluded from the learning process. If this is so then when we speak of transformative learning we need to speak of what it means to have agency and have more than agency… have agency for the common good. As educators we then need to speak about how we catalyze this agency in a world that so desperately needs compassionate and thoughtful human beings. This enabling I have found through thinking, reflecting and acting in multiple places and spaces." From my PhD Journal, June 2017

The research for this PhD has become a reflexive space to address these and other challenges of learning practice, to understand why issues of inequality re-occur, and why it is vital to engage with cognitive justice if we are to have learning that is transformative and transgressive.

> "By choosing to do a PhD I cannot ignore the fact that I have situated myself within the challenged and (hopefully) transitioning but still colonial space of the South African university. I situate myself as an environmental activist who can only speak the colonial languages. I also align myself against oppression and this includes the oppression of the earth and the oppressive global economic structures that are sucking life out of the earth. This alignment requires continual reflexive praxis both in terms of my political identity and how I enact this in the world and in terms of how I enact in the world with others in the collective movement towards our liberation. To deal with this I have attempted to be as open as possible to the multiple historical, cultural and systemic influences on the emotional, historical being that I am". From my PhD Journal, August 2016

From these insights I drew up the following objectives that draw on the DEA model of moral reasoning.

Objective 1: to diagnose and explain the problems facing the environmental and social movements in the context of water justice in South Africa by using the theories and concepts of cognitive justice (Part 1, Chapter 2, Part 2, Articles 1 and 4).

Objective 2: to consider the effect of trying to achieve cognitive justice by critically describing instances where it has been the guiding principle of learning in the environmental and social movements associated with water justice in South Africa (Part 2, Articles 1, 2, 3 & 4).

Objective 3: to use the explanations of objective 1 and the experiences of objective 2 to identify learning actions that enable knowledge creation and agency (Part 2, Articles 2, 3 & 4, and Part 3).

1.4 Distilling and weaving a PhD portfolio

Following my second PhD proposal I have been using the writing process itself as research and learning praxis. This process has resulted in four scholarly articles (reproduced in Part 2) which make up the main body of this PhD thesis. Two of these articles have been published in academic journals, the third has been accepted with changes which I am currently working on, and the fourth has been submitted to a journal (See Part 2 for progress of PhD articles).

The articles have been starting points from which I have launched explorations and discoveries, twice with fellow writers and twice on my own. Each exploration has been an intense grappling with the evidence, with the ongoing and unfolding events in South Africa and the world, characterized as it is by inadequate responses to climate change and the erosion of democracy. The research process itself became a way of investigating the nature of learning, discovering how learning could be an emancipatory practice in solidarity for the common good.

It is with this intention that I start weaving together the four articles as one consolidated work. I will now guide readers into the structure of this thesis and the four articles as explorations of praxis.

Part 1: Context and theory

I start by tracing the context – the spatial and temporal soup – that the PhD is cooked in. I open up this diagnostic and explanatory space within the context of South Africa around two themes:

Chapter 2: (1) Water justice and South Africa and (2) the environmental learning movement in South Africa.

Chapter 3 sets out the architecture of the research – the methodological layers and distillations of the PhD project.

Part 2: Four scholarly articles

Part 2 reproduces the four articles in full, with a brief introduction. The four articles are:

A peaceful revenge: achieving structural and agential transformation in a South African context using cognitive justice and emancipatory social learning (Burt et al., 2018).

This article came about because of an absence in the environmental education Changing Practice course that emerged when engaging with participants' disempowering experience of education that was designed to be emancipatory. Critical environmental education scholars tried to bridge the gap between environmental issues and social issues by arguing for their interconnection (O'Donoghue, 1987). Although our theory was intellectually sound, the practice, particularly in the South African context (this was not necessarily so in other African countries), did not go far enough in registering the material effects of apartheid on people's lives, including the extent to which school and university education is so limited for most South Africans. Some environmental educators did attempt to show how apartheid influenced the attitudes of oppressed people to the environmental movement. But in relation to learning practice, the effects of racism were not seen as central environmental concerns. These effects were considered in abstract terms in relation to how social, economic or political systems affected the environment, but not in terms of how racism and racist education affected participants' direct experience of learning.

Realizing this shortcoming in practice prompted me to return to the scholars linked to the people's education movement that I had engaged in during my early work in the development sector in order to understand better the absences in the environmental education theory that I and the course participants were feeling. Race and gender-based violence remained silent as lived experiences within us and between us (Carpenter & Mojab, 2017; Salleh, 2017). We began facilitating a more engaged process guided by academics, activists and NGO practitioners, and soon found that we could all mobilize around the concept of cognitive justice. I re-read how

liberation theorists arrived at their critiques of education and knowledge production that analyzed how oppressive social structures (race, global capitalism and control of scientific knowledge production) were central to cognitive injustice. I learned from Bhaskar's transformative dialectic how liberation theorists identify the absences in knowledge and learning that lead to oppression and how they replace these with new explanations.

The first paper then gives examples of how, by embracing cognitive justice, participants and facilitators gained confidence, leading to an increased ability to champion community and non-academic knowledge.

The course facilitators were also able to critique the neoliberal structural tensions around privilege. By acknowledging these tensions as structurally present in the world and so present in the course, we were able to 'come closer together' with the participants. We argue that engagement with cognitive justice is one of the processes moving us towards a universal solidarity, which is a necessary step for achieving emancipation.

Entering the mud: Transformative learning and cognitive justice as care work (Burt et al., 2019). This article delves into the inner workings of the Changing Practice course with a particular focus on facilitation. We argue that facilitation that is cognitively just is care work. This led us towards removing a lack of care at all levels of social engagement as learning, and the realization that only through such a stratified process of care work can learning effect transformation.

We drew on Bhaskar's model of transformative action to explore levels of care (Bhaskar, 2016). A particularly important aspect that we discovered was seeing participants' experiences as central to unearthing contradictions in our collective practice and in the systems that we are trying to change. By doing this we arrived at co-learning as cognitive justice and care work. This article should be read in tandem with *Working for Living: Popular education as/at work for social-ecological justice* (Burt et al., 2020, See Appendix C) which, although not part of this PhD series of articles, extends the idea of facilitation as care work to the labour of community activists. The two articles together show that what we practice as facilitators in the Changing Practice course is the same labour as that of a caring community activist.

Research for the people, by the people: The political practice of cognitive justice and transformative learning in environmental social movements (Burt, 2019).

This article has two aims. The first is to reveal the importance of the change project as a mediating tool for seeding cognitive justice action and thus transformative capacity. The second is a plea (backed by evidence) for recognition of the value of activists' research in generating new knowledge for transformative social action.

Again, drawing on the critical realist dialectic, I reveal how one change project generated by participants from the Vaal Environmental Justice Alliance (VEJA) demonstrated how African spiritual practice offered a re-visioning of the natural world. I show how the process of this change project, facilitated by the course and by the knowledge generated from the change project, changed the learning praxis of both the facilitators and the participants. This was only possible because facilitators repositioned themselves in solidarity with the activists and saw their knowledge creation as an act of cognitive justice.

> "Social learning is like a mountain pass through all these very difficult obstacles. On every level the challenge of trying to understand what social learning is, the challenge of trying to make a difference when we feel so tiny compared to the hugeness of the problem. We are forging this even though we can't see where we're going. It feels like we are in quite a narrow space together we are forging this path." Changing Practice participant, 2015

Imperfect educator-activists: the praxis of cognitively just environmental learning (Burt, 2020) The final article in this series shows how historical changes in the Changing Practice course allowed for cognitively just environmental learning praxis. We again use the critical realist dialectic to reveal how this begins with noticing what is happening, learning how this has come to be, and then learning what needs to happen to transform.

The starting point for transforming our educational approach is the participants' experience of learning. In this way the practice of the Changing Practice course becomes an embryonic new way of being and learning together that is continually reflecting on how we can 'come closer together'. This requires paying attention to cognitive justice as a process of acknowledging one

another's knowing, feeling and being, and then transforming our collective knowing, feeling and being with care.

<u>Part 3: Reflections and future conversations</u>

Part 3 begins the next conversation by sharing the key findings from the Changing Practice course as a letter to the next generation of educator-activists. This letter was sent to all the previous Changing Practice course facilitators and three younger educator-activists who are interested in the Changing Practice course. We then met to discuss the contents of the letter and to follow up on other questions that we were grappling with around our work. The postscript is this transcribed conversation. I end the PhD portfolio in this way to signify the praxis of cognitively just learning and its continued collaborative labour.

1.5 Conclusion

This thesis is an applied study of learning as an activist practice for water justice. I argue that cognitive justice is a crucial concept and praxis for bringing about solidarity and mobilisation, bringing as it does a moral imperative for using multiple knowledge lineages. This does not mean merely drawing on the 'information' of different knowledges but also what their unique and different worldviews expose and what it takes to practice education as activism. Through the process of learning and scholarship we work to absent the layered effects of oppression and embrace a caring collectively-held ethic towards each other and the world. This is cognitive justice praxis.

The critical realist dialectic guides this praxis, revealing three essential processes: care work (Part 2, Article 2), co-learning (Part 2, Article 3) and reflexivity (Part 2, Article 4). For the Changing Practice course, the essential mediating tools are the working together/working away design, being situated within a social movement learning network, and a change project done collaboratively by participants from an activist organisation.

In order to be activism, this labour needs to be approached as inter-disciplined and rooted in a solidarity and mobilising cognitive justice praxis for education as activism. I hope this will be a useful contribution to the ongoing emancipatory project in South Africa.

> "In Buddhist practice we take a good hard look at ourselves and accept that we are never where we need to be, but the possibility of getting there is paradoxically always present. It is not somewhere to strive towards. It is here but sometimes veiled, obscured like a cloud drifting over the sun, the possibility of peace and happiness and compassion are always present. We just need to see what is truly there, not what we think is there or what we wish to be there. In Buddhist practice we often make aspiration prayers wishing for the happiness of all beings. My aspiration prayer is that this small study will in some way help us see a little way beyond the veil and that this scholarly work will completely reflect this intention." From my PhD journal, 17 November 2018

Chapter 2: Contextual explorations

2.1 A perspective on Water justice and South Africa

This section explores the relationship between water, people, and governance in South Africa. It highlights the decline in the democratic governance of water, and argues for the importance of civil society participation in water decisions. I have written this chapter as an example of how one can start research from direct experience (in this case my direct experience of having worked in the water sector for more than twenty years) and then test this with other evidence and literature. This is what we do in the Changing Practice course.

2.1.1 A brief history of South Africa's water

There are many people working to ensure that South Africa's water is indeed 'some, for all, forever'(Palmer, 2019). The Changing Practice course is one of these efforts, and at the end of this chapter I introduce all the change projects that came out of the course. They show starkly the real struggles of South Africans for their water rights at a local level, and emphasize that citizens' voices like theirs must be heard if water governance is to respond to the needs of the many.

South Africa is a water scarce country. Water is precious. There are songs about the rain coming, joyful songs such as *Qongqothwane* (The Dung Beetle – which according to Xhosa traditional culture brings good luck and rain) and *Imvula* (It's raining), the children's song sung by all in the rural Eastern Cape.

South Africa's rivers are, as in other countries, political markers of division and war as well as the lifelines of the landscape. The Great Kei river marked the frontier along which the English settlers were given land. These settlers were used as a human wall to keep the Xhosas north and east beyond the Kei. This same river was the boundary of one of the largest homelands/bantustans under the apartheid state: the Transkei (Mostert, 1992).

During apartheid, access to water was restricted in much the same way as access to land. Landowners had riparian rights over rivers that flowed through their land. This meant that not only did most of the land belong to whites but so did most of the water – 95% of irrigated water was used by white farmers (Movik, 2011). The apartheid government set up infrastructure for water and sanitation in all cities, yet the townships, just out of sight of the white-run cities, had no piped water and no water-borne sewerage. In rural areas women still walked kilometers for water, or fetched water downstream from dams controlled by white farmers.

My first contract as a water practitioner was to work with a group of rural villagers in the upper catchment of the Kat River Valley (Burt et al., 2008). The villages were without any basic services, and were spread across the landscape in groups that had not changed much since forced settlements in the late 1800s (Kirk, 1973). Several of these communities lived below the Kat River Dam, which had been built in 1969, primarily for agricultural use by large citrus plantations and for domestic supply to the white town of Fort Beaufort. Black and Coloured communities situated directly below the Kat River Dam had no water or sanitation services. The white farmers of the irrigation scheme were in sole control of the release of water from the dam. They released water for their crops, or when requested to the Fort Beaufort municipality. Villages upstream of the citrus farms and the town of Fort Beaufort were not informed when water would flow through the river which ran alongside them. When the dam was closed the river was reduced to small muddy pools. Sacred pools and waterfalls ran dry. When the dam's waters were released, water would come rushing down without warning. Cattle would be drowned, children could not get to school, the sick could not get to clinics, and sometimes people were washed away and drowned (Motteux, 2001).

When apartheid came to an end in 1994, many South African laws were entirely reconceptualized. Among these were the National Water Act and the National Water Services Act, which re-visioned water as a common good that could not be privately owned by anyone (Republic of South Africa, 1998, 1997). Riparian rights were done away with (Tewari, 2001).

Those drafting the new laws wanted to do more than return water to the common good – they wanted redress for the many people who had suffered without secure water for decades. Water was declared a human right and twenty-five litres per person per day was quantified as being a free human right. The lawmakers took an even bolder step. In a water-scarce country, rivers are precious. They need to live too, and if they don't live, the humans who depend on them cannot live either. The new water law allowed for a reserve to protect the health of rivers and all other aquatic ecosystems -- a minimum amount of water for each ecosystem known as the ecological reserve. The new law stated that only after the human and ecological reserve had been met, could water be allocated for other means.

This was an ambitious proposition, and many years were spent devising scientifically sound methods of establishing the ecological reserve (Palmer, 1999; Scherman et al, 2003). It proved difficult to find the political will to adhere to the human and ecological reserve. The new water law was hindered by what Ruiters and Bond (2010) call the 'transitional compromise' allowing certain takeovers and privatizations of water and other services led by transnational corporations and the World Bank.

Besides the reserve, the transformed legal status of water also involved a conceptual framing of water management known as integrated water resource management (IWRM). IWRM is defined as "a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (Global Water Partnership, 2000). IWRM became mainstream in 1992 at the International Conference on Water and Environment where the Dublin Principles were tabled (Miguel & Gonzalez-Villarreal, 1999).

A key mechanism for IWRM was the decentralization of water management from national to catchment level. This required the managing of water according to hydrological boundaries rather than political ones (Mehta et al., 2014). To turn these principles into practice required a wide-ranging reconstruction of institutional arrangements responsible for the management of water. South Africa was divided into fourteen water management areas (WMAs – since reduced to nine) the intention being to establish a catchment management agency (CMA) to manage each

water area. Each CMA would be overseen by a multi-stakeholder board. Its day to day running would be done by professionals skilled in different facets of water management, and it would be overseen by a governing body appointed by the minister responsible for water management, in consultation with an advisory committee. The CMA would function as a body corporate and would be funded by water use charges from its WMA members (Republic of South Africa, 1998).

The new law also allowed for new institutional bodies called water user associations (WUAs). According to Palmer "Pre-democracy, farmers were subsidized to organize water delivery for agriculture through Irrigation Boards, including associated infrastructure. In an effort to encourage transformation and equity, irrigation boards were renamed WUAs and given the responsibility of water supply to many small towns, in partnership with local government" (Palmer, 1999) The law also allowed for bodies called catchment management forums (CMFs), which would be informal institutions made up of citizens, water users, government departments and other interested parties. The CMFs had two functions: they were platforms for civil society and others to have a say about the management of water at a local scale, and they were the platforms through which the CMA could consult and inform society of decisions and issues (Republic of South Africa, 1998).

According to Palmer, implementing IWRM in South Africa was not easy, and the difficulties of its implementation led to various critiques of how IWRM is understood and practiced. A new paradigm for IWRM has been proposed which includes more adaptive responses by drawing on complexity thinking, trans-disciplinarity and transgressive learning (C. Palmer, email communication, 14 December 2019; Palmer & Munnik, 2018). I hope that this PhD research will contribute to current IWRM discourse by making the case for including cognitive justice as a learning practice.

2.1.2 Reviewing post-apartheid water management & services

It took ten years to establish the first CMA (Burt et al., 2007) because of the confusion about how participation should take place. People were unused to democracy and forms of democracy that existed before apartheid and colonialism had been eroded. People were unsure of their role in

the new democracy. Institutions did not have experience of how to engage with a divided society that was not used to being consulted. Even though apartheid was legally over, its power dynamics persisted. It is not surprising that a lot of the writing about water management in the 1990s was concerned with how to engage all affected stakeholders. A lot was learnt through the establishment of the first CMA, the Inkomati CMA in Mpumalanga, and its work with strategic adaptive management (Rogers et al., 2013).

Twelve years later I was involved in a review of participatory water resource management. Other than the innovations with the Inkomati CMA (Rogers & Luton, 2011) and some CMAs in the Western Cape, resistance to decentralization remained a puzzle and a heartache (Lotz-Sisitka & Burt, 2006). Innovative work had been done on the different tasks of water management and the levels of consultation or participation that are needed for each task (du Toit et al., 2006; Palmer et al., 2018). However what was significantly missing from this work and our 2006 review (Lotz-Sisitka & Burt, 2006) and a lot of writing at the time, were race and gender. Hlatshwayo argues that in post-apartheid work on water "the class structure was de-radicalized and thus 'normalized', and the vast economic inequalities have been made to appear normal" (Hlatshwayo, 2008, 214). In our review (Lotz-Sisitka & Burt, 2006) we noted discrepancies in participation from different stakeholders, but our analysis of the causes for this stopped at how participation could be categorized according to particular water management tasks. We did not interrogate the fundamental values and discriminations that resulted in problems of participation in IWRM.

A study funded by the Norwegian Research Council did not make the same mistake (Mehta et al., 2014). It included political economy, gender, history and culture in shaping water management practices in South Africa. The authors argued that a narrow, professionalized practice of IWRM oversimplifies the power relations underlying gender, race and class. They state that although women in South Africa do participate in water management, they are mostly unable to influence decisions within the unequal power relations of ownership and control of resources. They point out that women participated effectively in many informal networks, but such networks are not recognized in IWRM or in water management institutions in South Africa (Mehta et al., 2014; Movik et al., 2017). In short, not much has changed for the poor and for rural women in South

Africa regardless of the fact that one of the three core principles of the National Water Act is redress (Republic of South Africa, 1998).

Seventeen years after the promulgation of the 1998 Water Act I was involved in another review looking at the revitalization of catchment management forums (Munnik et al., 2017). Led by Munnik, we reviewed CMFs across the country and discovered that many had been co-opted by powerful water users or dissolved because there was no support system to enable meetings to take place. Despite these challenges, my colleagues and I still believe strongly in the role of CMFs for civil society action and as accountability mechanisms for government and large-scale water users (Munnik et al., 2017). Since this work there has been significant research in the Eastern Cape showing CMFs as being vital for ensuring the involvement of civil society in water-related decisions. These have included social movements such as the Eastern Cape Water Caucus (ECWC) (Palmer et al., 2018; Braid et al., 2019). Another Eastern Cape initiative, the Tsitsa project, is also looking at the links between water management and land use with a focus on learning (Cockburn et al., 2018).

The South African Water Caucus (SAWC) call to renew and recognize the role of CMFs came at a time of diminished civil society engagement in the governance of water (Environmental Monitoring Group, 2014). In the early 2000s, civil society bodies such as the SAWC were able to meet directly with the Minister of Water Affairs to discuss their concerns. Such access has since fallen away and the spaces for civil society to make its voice heard have become fewer and fewer (Lusithi & James, 2016; Ndlovhu et al., 2016; Tshabalala et al., 2016; Burt & Lusithi, 2017; Komane & Mahlangu, 2018; Thobejane et al., 2018). The Zuma government came to power in 2009 and by 2017, at the end of Zuma's presidency, the Department of Water and Sanitation was bankrupt due to corruption. In 2017 the SAWC published a damning report on the state of the Department and the effect this was having on the country (South African Water Caucus, 2017).

Corruption and mismanagement, along with unchecked pollution of all South Africa's rivers by mining, agriculture and municipalities (many water sewage plants became inoperable across the country) and the accelerating devastation caused by changing climate, has left South African

water in a very precarious state (Centre of Environmental Rights, 2011; Hallowes & Munnik, 2016, 2017).

When I worked in the Limpopo province during the 2016 drought I saw villages where people had been without water for weeks. The land was a desert, just dust and a few trees. There was no economic activity, in fact hardly any activity at all. People sat in the shade of trees waiting for water trucks to arrive. They paid more per litre of water than someone buying water in an upmarket shop in Johannesburg. Such situations have now become common in South Africa, including Cape Town becoming the world's first city to (almost) run out of water (Environmental Monitoring Group, 2017).

In this new context we look back and listen again to the warnings from many researchers, activists and practitioners in the late 1990s. For example, that the new water law allowed for continuation of 'existing lawful use'. This made it almost impossible to transform water practice in South Africa within certain industries – for example timber plantations having secured cheap water with apartheid era licenses. The government had argued at the time that sustainability would be threatened if reallocation happened too quickly (Movik, 2011).

To understand the contradiction between the National Water Act's principles of equity, sustainability and redress, and the state of unequal access of water today we need to look closely at the decisions that were made during the 'transitional compromise' (Ruiters & Bond, 2010). It is not only because we are facing a climate crisis that South Africa's water situation is so dire today. Political and economic decisions were taken at a time when South Africa could least afford it.

When the African National Congress (ANC) came to power, the Reconstruction and Development Plan (RDP) was the basis of its manifesto. This was a socialist-leaning policy that aimed at redressing past inequities through socio-economic as well as educational and cultural means, with a strong emphasis on creating employment. Its foundation was basic service provision, with the state at the same time redistributing apartheid's unequal access to resources (Movik, 2011). The RDP was however soon replaced under Thabo Mbeki's government by neoliberal policies, in particular the Growth, Employment and Redistribution (GEAR) policy which gave in to the

pressures of the global market and embraced deregulation and increased dependence on market forces. Arguments for economic sustainability and privatization were given priority over the need for redress.

The change of emphasis under GEAR also led to the privatization of water services, which under the RDP was the prime task of the state. Another contradiction was that whilst the IWRM policy emphasized the integral relationship between land and water, the legislative environment did not reflect this – with the consequence that water and land remain under separate legislation (Woodhouse, 2012). Community activists in South Africa tend not to compartmentalize issues of water, land and equity, most probably because their experience of environmental violence is visceral and embodied, and so their understanding of the need for reform extends beyond the short term. To some extent, but not entirely, their concerns echo civil society protests since the 1970s, which have often shown a preference for single messages over more careful critique – 'revolution first, education second' (Naidoo, 2015). In South Africa resistance against the state and the free market economy has mobilized around the lack of basic services and access to land. Narrow messages such as 'no house, no vote' may lead to limited concessions, and may secure some votes, but do not lead to lasting reform. Longer-term activist processes are founded on counter-hegemonic movements (Bond & Mottiar, 2013).

Civil society dissatisfaction on water issues ranges from water service delivery in rural areas (Ndlovhu et al., 2016; Nkosi & Ngomane, 2018; Rathokolo & Thaba, 2018), to the use of prepaid water systems and devices controlling water use and payment in urban areas (Lusithi & James, 2016), to waste water treatment plants and the pollution of rivers and related cholera and typhoid incidents, to industrial pollution, particularly mining, and its effect on health, and also on dams and displacement (Tshabalala et al., 2016; Jolobe et al., 2018; Komane & Mahlangu, 2018; Sibiya et al.,2018). All these areas of dissatisfaction where expressed in the Changing Practice course change projects, which are summarised below.

To make things more difficult, resources available to civil society have also diminished, and continue to diminish. This follows the trend of international donors funding large multi-country

development organizations rather than country-based and community-based NGOs and activist groups.

The current 2018-2019 drought in South Africa has provoked concern beyond 'the poor', so that now the private sector is getting involved in water reform. Most of this is related to ensuring water allocation for agriculture, mining and manufacturing, mostly via technological solutions initiated by large-scale water users. In such instances, 'the poor' are seen as a group to be managed or appeased with short term gains rather than as significant agents of change.

2.1.3 What the change projects say about water and South Africa

I facilitated the Changing Practice course from 2012 to 2018. As mentioned in Chapter one, the course 'curriculum' is drawn on activists' own work concerns, in the form of a 'change project'. All the learning on the course revolves around how to better understand and address their concerns expressed via their change project.

The water issues that the activists bring to the course are shocking and heartbreaking, and there is little hope that authorities will be able to step in to help. It is left for communities to mobilize themselves and forge ties with organizations and partners. This puts a great burden on community activists. The intention of the Changing Practice course is to assist the activists with what they are doing already and work in solidarity with them.

This section documents all the change projects I've been involved with. Their issues, all local and specific, tell us much about the effects and complexities of the current water crises in South Africa.

Eastern Cape communities and question-based learning[1]

The Changing Practice course evolved from running the first 'work together/work away' course on knowledge flow and mediation (Burt & Berold, 2012), which I describe here. Its purpose was to facilitate community-based organizations to generate their own knowledge about local water management practices. The course showed them how to ask questions emerging from their local context, and enter into conversation with different forms of knowledge.

The outcome of the course was a series of booklets, small resources on water management practices that were contextually specific to the community they were written for. The areas of concern ranged from how to harvest greywater at an urban school to documenting the story of an elder's approach to mulching. They were mostly 'How to' booklets with only an indirect reference to environmental injustice. In a sense they were a little like a written form of a service delivery protest – valuable for their resilience but not addressing the underlying causes of inequality and environmental devastation, although in some cases this was alluded to. What the booklets do reveal is the importance of locally contextualizing knowledge and the value of 'How to' knowledge for people in the same local context.

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[1] These summaries are taken from the change projects that were developed during the first Changing Practice course 2012-2014. The report on this course can be found in Appendix A. The full change projects, or links to the Change Projects can be found in Appendix B.

Table 1: Change Projects from the Eastern Cape Changing Practice course

Figure 3: Alyrian Laure presenting his Change Project during Module 2, Eastern Cape Changing Practice course.

Figure 4: Resident collecting water from a community rainwater tank

The Greywater booklet

An urban township school has children coming to school hungry. A local NGO starts a food garden but there is not enough water for the vegetables. A budding permaculturalist working for the NGO brings this problem to the course with the intention of exploring the possibility of greywater harvesting (Laure, 2013).

Sharing and caring for a rainwater tank

A local university student-run NGO is raising money to provide rain tanks to township schools and clinics. There is a concern about the quality of water in the tanks for human consumption, and also concerns about the best way the water in which tanks can be shared by neighbourhoods. A university student who is part of this NGO brings this concern to the course and develops a booklet on how to care for and share rainwater tanks based on conversations with community members and rainwater experts (Mputhing, 2013).

Figure 5: School children helping to mulch their school garden.

Figure 6: Women collecting water to wash clothes.

Mulch for a healthy garden

A rural school is struggling to feed its children. A local NGO practitioner wants to help by establishing a food garden, but water is a problem. The current food garden is not doing well. He makes friends with a retired gardener who teaches him and the children the art of mulching (Mhlonyane, 2013).

Amanzi Acocekileyo (Clean water)

A Wildlife and Environment Society of South Africa (WESSA) community outreach practitioner is documenting the practices of rural women who ensure that their households have clean water, including their knowledge of how water is polluted and what can be done about it (Yalo, 2013).

Figure 7: Community gathering for school meeting

Starting Asset Based Community Development (ABCD) and Permaculture at WB Tshume and Emzomncane Primary Schools

This is a personal and critical reflection of what has been learnt by applying the ABCD methodology in two township primary schools in urban settlements in Port Elizabeth. The reflection was done with teachers from the two schools (Collins, 2013).

Figure 8: Border Rural Committee logo

Improvement of the Amatola Wild Trout in our community

This booklet documents a community-based ecotourism project established through the Border Rural Committee, the labour required to get it off the ground, and the challenges to keep it afloat (Ntsiki, 2013).

Tour guides for communities

This booklet is about how to be an eco-tour guide for the same ecotourism project in the Amatola. It documents experiences of local community tour guides and gives advice on the way they should engage with tourists, what local knowledge they need to know and how to share this (Mqalo, 2013).

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Changing Practice course: South African Water Caucus (SAWC) and monitoring the National Water Resource Strategy (NWRS)[2]

As stated in Chapter one, the second Changing Practice course was situated within a broader civil society research project, set up to strengthen the participation of civil society in monitoring the NWRS 2. All participants were from member organizations of the SAWC. Their change projects were collaborative and focused on one of the following four themes (Pereira, 2013):

1. Water conservation and demand management in the context of climate change (Western Cape Water Caucus (WCWC))
2. Plantations, ecosystems and water (Mpumalanga Water Caucus (MWC))
3. Access to productive water for poor communities and small farmers (Eastern Cape (ECWC) and Western Cape Water Caucuses (WCWC))
4. Civil society monitoring of water quality (Gauteng Water Caucus (GWC))

Three change projects were completed, on themes one, two and four. The project on theme three was not completed and the participants dropped off the course for a variety of reasons including illness and institutional issues that are important but not the focus of this PhD (See Wilson et al., 2016). There were also crosscutting themes of gender, the restriction/closing down of civil society spaces for water governance, and indigenous environmental practices.

The change projects, summarized below, were written up in booklets by participants. They were then shared in various ways – with activists in the local context, with regional water caucus groups, with the Department of Water and Sanitation in three mediated dialogue processes, and with the SAWC.

An issue that arose spontaneously in one of the courses was on gender violence. The issue was taken up within the SAWC coordinating committee, and resulted in an additional principle on

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[2] These summaries are taken from the change projects that were developed during the second Changing Practice course 2014-2016. The report on this course can be found in Appendix A. The full change projects can be found in Appendix B.

gender equality being added to the movement's principles and a position paper on gender (Environmental Monitoring Group, 2016).

Table 2: Change projects from the SAWC Changing Practice course

Figure 9: African church engaged in spiritual practice in the Vaal River.

Water and Tradition

This case explored how spiritual water users are excluded from decentralized water management bodies. It describes how the relationship of spiritual water users to the river challenges the dominant narrative that sees the river as a resource to be managed for human economic consumption. The values embodied in these spiritual practices recall our deep belonging to and connection with the environment (Tshabalala, et al., 2016).

Figure 10: Patricia Mdluli and December Ndhlovu on top of Moholoho mountain.

Saving Moholoho

This case documented the history of the struggle for the ecological integrity of the Moholoholo mountain in Mpumalanga. The activists compare the changing of land use in favour of industrial plantations to the land appropriation of the apartheid government. Their narrative outlines the conflict between tribal trusts and communal property associations over land claims. They also raise other issues such as the government not honouring promises about closing tree plantations, as had been agreed during the first years following democracy in South Africa. The

report provides evidence of how timber plantations directly impact on Bushbuckridge, the area's most populated rural community. (Ndhlovu, et al., 2016)

Water management devices put livelihoods at risk in Dunoon

This case looks at the community of Dunoon in the Western Cape. The WCWC participants write that the water management devices, installed by the City of Cape Town to reduce water use, limits residents' ability to generate income through informal businesses such as car washing and hairdressing. They link this to the water policies of the City of Cape Town. They also paint a stark picture of local political intimidation of activists and how this limits civil society participation (Lusithi & James, 2016).

Figure 11: Thabo Lusithi running a workshop with the Western Cape Water Caucus.

Changing Practice course: Olifants civil society network (CSN) and collective action[3]

The third Changing Practice course included organizations from the informal civil society network initiated by the Association of Water and Rural Development (AWARD). The course took place within the Olifants catchment and included participants from communities in the lower, middle and upper parts of the catchment. The catchment has been badly polluted by mining as well as by large-scale agriculture and dysfunctional wastewater treatment works.

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[3] These summaries are taken from the change projects that were developed during the second Changing Practice course 2016-2018. The report on this course can be found in Appendix A. The full change projects or the links to the change projects can be found in Appendix B.

The main issue for the activists on the course was how mines have devastated communities. This course helped them consolidate their work and develop factually-based arguments for how mines damage communities at all levels. One change project was concerned with food growing, but it also dealt with the effect of mines on water quality, as well as the problem of local chiefs giving to mines land that could be used for growing food. Other issues raised in the change projects included the emotional strain of activist work, the physical and psychological violence of mining companies, and how government, gender, race, and the historical entrenchment of mining are embedded in South Africa's collective consciousness.

Table 3: Change projects from the Olifants CSO network Changing Practice course

Figure 12: Lorraine Kakaza, Susan Morabe, Baby Tabelo and Collen Jolobe during Module 2 of the Olifants catchment Changing Practice course.

Being the voice of the Brugspruit wetland

This case looked at how the different causes of how the Brugspruit wetland has become so polluted. The causes include mining, dysfunctional wastewater treatment works, and the discharge from a local mall. Communities near the wetland also throw their rubbish into the wetland, including nappies. The case grapples with why people are uninterested in caring for the wetland, and the difficulties of generating support from the local municipality. It also documents how it became important to know what a healthy wetland looks like so as to work towards a restored one. (Jolobe et al., 2018).

Figure 13: Elton Thobejane and Provia Sekome during Module 2 of the Olifants Changing Practice course.

Corporate compliance and the Twickenham Mine's Social and Labour Plan

This case documents the monitoring of the Twickenham mine's social and labour plan and how they shared their monitoring method with other communities. It also documents a legal battle with the Department of Mining and the Chamber of Mines to ensure meaningful participation of local communities in the new mining act. The communities won this legal battle leading to community consultation on mining becoming a legal requirement nationwide (Thobejane & Sekome, 2018) .

A silent killer: The Case of Santa Village community living next to a mine dump

This case documents a hard struggle to get a mine to take responsibility for a toxic mine dump affecting the health of many people. Participants show great initiative in generating evidence, through their citizen science methods, of the effects of the mine on the landscape. It is a painful account of how activists are undermined and threatened by mining companies (Komane & Mahlangu, 2018).

Figure 14: Elvis Komane and Nthabiseng Mahlangu at Module 2 of the Olifants catchment Changing Practice course.

Figure 15: Christina Mothupi, Tsepo Sibiya and Kedibone Ntobeng in the community where they live and work.

A mountain of disposable nappies

This case started with the death of more than twenty people from an unknown pollution source in the river. Communities are still unsure whether it is from mining or another cause. One big concern is the number of disposable nappies dumped in the river because there is no other place to dump them. The participants trace the history of nappy use in their community and link the increase in disposable nappies to the start of mining in the area and an influx of people with disposable income. They did a house-to-house survey to get a sense of whether people know about the problem and to find out how they do dispose of nappies. They found that it is not a lack of knowledge that is the problem but more that there is no waste collection in the area. They dig deeper into the problem of the non-biodegradable nature of nappies and document how no one, from the community to mine, are taking responsibility for the problem. (Sibiya, et al., 2018).

Figure 16: Nelson Thaba and Caroline Rathokolo at Module 2 of the Olifants Changing Practice course.

Figure 17: Thelma Nkozi in a garden of one of the women she has been supporting with the Mpumalanga Water Caucus Change Project.

If poverty is the big question, then farming is the big answer

This case explored the possibility of subsistence farming in a small, poverty-stricken community in Limpopo Province. The activists worked with a local school and an orphanage run by the community. Their case documents the work that it takes to get government support to run community orphanages and to get basic materials for schools to set up food gardens. Water is a constant challenge. With the ever-rising heat it is impossible to grow food without rain tanks or shade cloth (Rathokolo & Thaba, 2018).

Reclaiming our farming heritage

This case argues for farming as an activist practice against the commercial produce market, and as a way of reclaiming African heritage and values. The case documents a number of women farmers who have been trained in the ABCD approach by the MWC. It exposes the obstacles these women face in farming, particularly the pollution of water by mines, and the damage to the river system by unlicensed sand mining. It shows how growing vegetables in a situation of drought, pollution, and lack of support, is a political act (Nkosi & Ngomane, 2018).

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Figure 18: Mmathapelo Thobejane, Tokelo Mahlokoane and Eustine Matsepane at Module 2 of the Olifants catchment Changing Practice course.

The danger of living next to a mine

This case concerns the ongoing negotiations of a group of young women to get a mine to take responsibility for pollution that kills livestock in the area. These three young women document the levels of livestock deaths in the area, mobilize local farmers, and manage to get support from provincial departments. Eventually they get compensation for farmers who have lost livestock. They also get an empty promise from government to monitor the mining stream. The participants also pushed the boundaries of gender divides by working with a male dominated group of farmers and encouraging female farmers to join. The women also started their own support group for younger women (Thobejane et al., 2018).

These change projects clearly demonstrate the complex intertwined work that it takes to articulate environmental justice issues in South Africa. Some of the participant's booklets explore environmental practices that help to secure and re-use water. Others have to accept the fact that the water available is unfit for human consumption and so has to be made as safe as possible to drink. The books on ecotourism look at the intersection between the environment and labour, and how rural communities want to protect their natural resources and make a living.

The more activist-authored booklets articulate what it takes from activists to work at confronting environmental injustice and the continual strain of this work. None of these activists have full time jobs. Many started their own NGOs only to find that despite their committed work, they are unable to get funding due to lack of access to skills and because support for local action is of little interest to funders. Despite this, these under-resourced groups continue, often as the only safety net and support for their communities.

Growing food is also a common concern. The booklets show just how hard it is to sustain food gardening when there is very little water, no government support, and the threat of land being sold off to mines through chiefs and traditional leaders. The story being told in different ways is that growing food is not just a matter of learning the skills and tilling the soil, but requires continual political mobilization to ensure that communities have the land and water to sustain themselves.

This chapter has given a perspective on water in South Africa which includes the change projects of the participants of the Changing Practice course. The next chapter explores the history of social movement learning in South Africa, as well as the history of environmental education.

2.2. Tracing the environmental learning movement in South Africa

This section traces the shifting landscape of environmental learning in South Africa. I use the word 'trace', as this is not an in-depth analysis. It does not dig deep enough to unearth all the historical forces shaping the environmental learning movement in South Africa. Rather, I contribute this tracing as a way of understanding the historical context that directed the way in which we developed and ran the Changing Practice course. My starting point is that education can be an emancipatory practice and that this is a process of absenting whatever inhibits us from moving closer together as a species, closer to a relationship with the earth, with all beings and all the many interconnected processes that manifest as life (Scott & Bhaskar, 2015; Bhaskar, 2016) (See Chapter three). This section traces how I was able to reach this starting point based on the activist and scholarly labour of others.

I also take it as fact that colonialism and apartheid violently affected all aspects of life in South Africa including our experiences of education and learning, the life of our rivers, the land, and the air. No relationship, no practice and no institution has been immune to the effects of colonial violence. The work of absenting the effects of this violence starts with understanding what those effects have been. This historical context also means that the process of deliberation and participation is not straight forward. As Lotz-Sisitka argues,

these conditions [the conditions for a Habermasian deliberative politics] include certain levels of equality and respect and make up the content of a well ordered public sphere which is not often present in southern African states (or elsewhere) as impacts of colonialism and persistent poverty or the excesses of structural inequalities inherent in neo-liberal market-based economics and associated patterns of thought and practice dominate most forms of public engagement, despite apparent commitments to democracy. (Lotz-Sisitka, 2015, 216)

This is why a more activated form of critical research drawing on critical realism becomes valuable as described in Chapter 3.

This section also describes how reflexive work is needed for critical educational practice which starts with identifying gaps, contradictions or theory-theory inconsistencies or theory-practice inconsistencies that, once revealed, can be absented through a change in educational practice and educational research practice. This is the emancipatory labour of the educator-activist. It also enables educator-activists to draw on multiple disciplines including local knowledge and experience (which points to the importance of cognitive justice), to note contradictions and offer alternative explanations (Bhaskar et al., 2018) for how emancipatory education can happen. How to go about doing this reflexive work is one of the things I explore and try to reveal in this thesis.

This tracing has been generated by following, engaging in, conversing about and reading the work documented by the Southern African Journal of Environmental Education (SAJEE) housed within the Environmental Education Association of Southern Africa (EEASA). Lotz-Sisitka describes EEASA "as one of the longest standing and sustained Environmental Education Associations and Journals in Africa with a thirty-seven-year history" (H. Lotz-Sisitka, email communication, 13th February 2020). I started this inquiry by sending an email to key scholars in the environmental learning movement who have been involved with EEASA since the 1980's. I asked these scholars to reflect on what the key historical moments were for the environmental learning community. I followed up on their responses by reading some key texts from the SAJEE as well as consulting the historical reviews, written over the last five years, on higher education sustainable development and environmental education research by Lotz-Sisitka (2015, 2017, 2019).

In South Africa the environmental learning movement has generated contextually relevant education practices. It has also been concerned with research as an educational practice in higher education. This has led to a growing inquiry into higher education sustainability research (HESD) as the work of generating the historical and conceptual tools necessary for tackling sustainability and environmental concerns in educational theory and praxis (Lotz-Sisitka, 2015).

The first signs of formal engagement with education for environmental aims emerged from the conservation education tradition of the colonial/apartheid era, which saw humans as having a protective or stewardship role over the environment. Critical environmental learning broke with this tradition through the influence of critical theory and the critical education movement (O'Donoghue, 1987; Irwin, 1990; Janse van Rensburg, 1995; Lotz-Sisitka, 2004). What I trace below is the scholarly work that was needed to make this shift. This work has continued as contradictions have emerged both in theory and practice when it comes to practicing change-oriented learning. The Changing Practice course, central to this PhD research, is one of many applied studies that tests these emerging theories. Lotz-Sisitka describes this labour as "[EE research and practice] that continues to engage with the deep-seated contradictions that underlie much environmental learning and wider objectives of transformative education and pedagogy the world over, including in South Africa". (Lotz-Sisitka, email communication, 13th February 2020).

2.2.1 Environmental education in the apartheid years

> There is little doubt that sound management of our environment, along with the careful husbanding of our economy and the development and entrenching of human rights, are the major challenges facing us as a society as we approach the twenty-first century. Environmental education links these concerns and provides one support structure for us to heal ourselves as a nation, environmentally, socially and politically. (Irwin, 1990, 6).

The environmental learning movement was not and is not always pitted against the state. During apartheid environmental education, then known as 'conservation education', did not situate itself as overtly political. The main aim was protecting endangered species and ensuring soil

quality. During the 1980's and early 1990s environmental education began to be reconceptualized as an overarching process for healing a fragmented South Africa.

2.2.1.1 Early practices

Environmental education is clearly evident in South Africa in the early 1970s. Before this, government led environmental training mostly focused on soil conservation and conservation education for (white) farmers from agricultural extension officers (Irwin, 1990).

Two distinct forms of environmental education took hold in South Africa at the same time. One was based on the ideal of conserving the natural world, in line with environmental education approaches in the United States. The other was based on viewing the environment as commons, and as the foundation of life for all. The latter was influenced by African traditional knowledge and the environmental justice movement that was strong in America. The premises of these two movements led to entirely different approaches to education.

2.2.1.2 Conservation movement and conservation education in South Africa

> Under the apartheid system, the attainment of conservation objectives has often been secondary to the political priority of establishing a society based on white privilege and power. Hence, one of the unforeseen consequences of the apartheid system, has been the increasing indifference and antagonism toward environmental issues manifested by the communities alienated by that system. (Khan, 1989, 3).

In South Africa (and all over the world), the conservation movement has had a chequered past. Colonialism and the mass hunting of African wildlife during the 19th century led to a vast drop in animal populations in southern Africa. Colonial rationality did not question the development of science and technology to manipulate nature, or the expansion of the capitalist economy, or hierarchical political organization, or a formal legal system (Murombedzi, 2003). Underlying this rationality was the assumption that human systems can be decoupled from nature, and that nature can be restructured, re-ordered and harvested for human needs. Conservation in the colonial period was an expression of the desire to 'collect' nature, to be managed and preserved for human enjoyment. The appropriation of land both sacred and otherwise for conservation

purposes was regarded as right under colonialism, and continued under apartheid (Murombedzi 2003), and the same practices of looting and extracting resources can be seen under neo-liberal and neo-colonial tendencies today (Bond, 2005; Ruiters & Bond, 2010; Bond & Mottiar, 2013;).

In the apartheid years, conservation organizations in South Africa, although outwardly apolitical, befriended capital by setting aside land for conservation that would benefit elite development and tourism opportunities. Corporations used their support of conservation to steer environmental attention away from issues like toxic waste dumps that would affect their business interests (Holmes, 2012).

For young people, outdoor education was developed on a large scale with little or no reference to sociopolitical factors. This 'education' was steeped in apartheid ideology. When I was at school all (white) schoolchildren in the former Transvaal and Orange Free State Provinces had to attend 'veld schools' (Irwin, 1990). I still have vivid memories of the barren highveld landscape and the barn we slept in. The veld school was run like a military camp. We slept in freezing dormitories, were woken at 4am in the winter mornings (sometimes at below freezing temperature) and had to go out into the veld to read the bible and pray for two hours. The day was filled with military-style physical exercises, training in survival techniques, and competitive games. In the evening we sang Afrikaans folk songs and the South African apartheid national anthem. If our singing of the national anthem was not up to scratch we had to sing it again and again before being allowed to go to bed.

2.2.1.3 Emancipating environmental educational theory and environmental educational research from conservation education in South Africa

Since the early 1990s there has been a critical environmental education movement in South Africa which has stood in sharp contrast to the conservation education movement. If the Black Consciousness movement disrupted the student movement by questioning race, critical environmental education questioned the colonial and instrumentalist view of conservation education. The battle for the educational space extended beyond environmental education teaching, into debates around educational research approaches. Struggles against positivism and

instrumentalism in research and education became known in environmental education circles as the 'paradigm wars' (Janse van Rensburg, 1995).

The Environmental Education Association of southern Africa (EEASA) was one of the organizations that upheld the new progressive paradigm in the early 1990s, along with others such as the Environmental Justice Networking Forum (EJNF) (fore-runner of the South African Water Caucus). South African scholars within EEASA were influenced by the work of Wilfred Carr and Stephen Kemmis (2003), two Australian educators whose book *Becoming Critical: Education, Knowledge and Action Research* reviewed and critiqued the dominant positivist and interpretivist lineages of education and educational research (J. Taylor and R. O'Donoghue, email communication, 12th November 2019). Professor Rob O'Donoghue who was doing a PhD at the University of KwaZulu-Natal (UKZN) remembers how "critical education was the currency of education at UKZN" (R. O'Donoghue, email communication, 12th November 2019).

Carr and Kemmis (2003), drawing on Gramsci, Freire, Giroux and other critical educators and philosophers, reframed the purpose of educational research in general as aiming to bring about change. They called for a critical approach to the theory and practice of education, with action research becoming the preferred mode of research. In contrast, conservation education, and the conservation movement as a whole, abstracted nature from the world, so its education approach was generally limited to the subject of ecology and the study of landscapes and organisms, with social and political issues being outside its boundaries (Irwin, 1990). Its methods fell into what Freire would call the 'banking model' of education (Freire, 2005), where learning is seen as the transmission of scientific information about the natural world. The purpose of environmental education, from the conservation movement's point of view, was to change people's behaviour towards the environment through an accumulated knowledge about nature, perhaps even an awe of nature inspired by nature experiences.

Eureta Janse van Rensburg (now Rosenberg) (1995) describes this as a behaviourist and instrumentalist approach, even though it was standardized in global responses to environmental crises. In her PhD thesis Janse van Rensburg documents how the conservation education movement saw itself as 'apolitical'. One participant she interviewed regarded the struggle for the

end of apartheid as something that needed to be 'got over' so that the non-political work of conservation could continue. There was little reflection on how the unequal distribution of the environment as a resource was as much a pressing concern as conservation. Nor how Western modes of engaging with the environment have turned it into a resource to be harvested for economic gain at the expense of future generations wellbeing.

The dominant educational philosophy in conservation education was positivism, which makes the assumption that it is possible to transmit an unambiguous truth (Carr & Kemmis, 2003). Similar tendencies shaping positivist education, tend to shape 'trickle-down' assumptions about economic growth – a belief that something can trickle down in some pure form from an elite to 'the people'. All the people need to do is passively receive this truth and change their behaviour accordingly. The assumption is that providing a de-historicized and depoliticized truth about the environment will lead to what the knowledge elite consider the right behaviour. Environmental education research was also dominated by positivism, particularly in the United States where good education research was expected to be scientific, conducted mostly through surveys and quantitative questionnaires measuring changes in individual behavior and attitude, hence the emergence of the 'Paradigm Wars' led by Mzarek (1993) in the North American Association of Environmental Education in the 1990s.

Unfortunately the dominance of top-down education in South Africa led to conservation education being confused with the more critical environmental education in South Africa (O' Donoghue, 1987). The ideological connection of conservation and colonialism has led at times to the social movements taking an antagonistic stance towards environmental education. One of the difficult struggles the critical environmental education movement had to face in the early 1990s was how to mend the damage that the conservation movement had done to more critical and progressive parts of the environmental movement. A good example of this theoretical labour is the paper by Rob O'Donoghue entitled "Environments, People and Environmental Education: A story of bananas, frogs and the process of change" (O'Donoghue, 1987). In this paper he uses a story of a frog and a banana tree to depict how there is an interdependence between people and the environment. This was a symbolic pointer to how the system of education should both

respond to and change society. The relevance of this story at the time was painful. South Africa was moving uncertainly toward transition, and the potential of violence was high.

Part of the scholarly labour that was done to separate out environmental education from conservation education took place within the environmental education movement itself. Environmental educators and environmental education researchers worked at getting to grips with the historical roots of the tensions between the political struggle for freedom and the conservation movement. Farieda Khan's (1989) two page plea to the environmental education community to consider history in order to understand the antagonism coming from the people's political movement is one such example. She drew on the earlier work of John Huckle, as did other scholars at the time. Heila Lotz-Sisitka describes the influence of Huckle's work on South African scholars, "Huckle was a UK based environmental educator who worked closely with the Australians Carr and Kemmis, Fien, Robottom, Gough and others. He was a strong advocate of critical environmental education, introducing 'red-green' thinking that laid the foundation for the critical trajectory in the field internationally". (Lotz-Sisitka, email communication, 13th February 2020). He also argued that the need for a "sense of history in the environmental movement is second only to knowledge of the natural environment" (Huckle, 1995). He had argued that unless environmental educators engaged with the impact of white settlement on indigenous land they would not understand the losses and cultural damage that has been done to indigenous people's connection with the natural world. Khan applied what she learned from Huckle's work to South Africa, and argued for an increased awareness of environmental history, which would include the discriminatory land practices of the apartheid government.

Khan (1989) pointed out that during apartheid, soil erosion was viewed as an environmental problem with no links to the social, economic and political practices of the apartheid government. Yet overcrowding of people and stock in the bantustans was the main reason for the huge soil erosion and donga formation in those areas. Khan mentions that there had been an early environmental movement in South Africa formed by black farmers, the Native Farmers' Association (NFA), established in 1917. It was community based, participatory and acted as a political pressure group as well as disseminating information on conservation and sustainable farming techniques (Khan, 1989). Professor Heila Lotz-Sisitka historically situates Khan's as follows:

"Part of what Khan was working on and with, was connected to the pre- 1990 liberation politics of the black environmental movement in the run up to the 1994 transition which also centred around land and equitable and just access to resources such as water. When the African National Congress (ANC) came to power, they had a functioning 'Environmental Desk', and articulated environmental policy that was later translated into the rights and social-justice based principles of Section 24 of the Constitution in 1996; and the early environmental education policy and curriculum initiatives set up to integrate this kind of environmental thinking into the newly forming national system of education and training in South Africa. These developments also informed the National Water Act (cf. above) and its commitment to participatory governance of water; and also influenced the work of the early Environmental Justice movements which gave rise to the SAWC." (Lotz-Sisitka, email communication, 13th February 2020).

The examples provided by Khan, O'Donoghue and Lotz-Sisitka, working with EEASA and the EJNF in the early 1990s, provided important positions around which environmental educators could debate and redefine their movement as different to the earlier conservation education movement of the colonial and apartheid state.

2.2.1.4 In summary

Much scholarly energy in the early 1990s was spent demonstrating that environmental education theory and environmental education research were not working from the same paradigms or assumptions as conservation education. This difference was related to similar trends in environmental education in Australia and Canada (Hart, 1996; Robottom, 1996; Gough, 1997; Jickling, 1999) and the rise of critical theory in social science research (Lather, 1986).

In South Africa there were other reasons for a critical paradigm, such as the need to make it clear that education was not an apolitical activity, that we needed an active anti-racist environmental education. This was not done by addressing the issue of racism directly, but by revealing flaws in educational theory, educational practice and educational research. It was a philosophical battle which resisted the notion that science was neutral and authoritative knowledge, and argued for a more democratic knowledge landscape, and for critical theory as an emancipatory replacement.

2.2.2 Towards a political environmental learning movement

After 1994, the borders opened up and South Africa was welcomed back into the global community. Education theorists started visiting South Africa. One of these was Thomas

Popkewitz, a curriculum theorist from the University of Wisconsin. He visited South Africa in 1996 and "pointed out the flawed assumptions that bedeviled southern Africa's reading of critical theory and critical theory in educational research" (J.Taylor, email correspondence, 12th November 2019) which was still hampered by a division between those who empower and those who are to be empowered by the already empowered. Popkewitz pointed out that there were mis-readings of critical theory in South Africa taking a positivist slant, looking at power as if it was something that could be handed to another. Popkewitz warned against de-historicizing power, and also warned against not seeing the importance of social and institutional contexts in shaping individual perspectives (Popkewitz, 1991). The educator, from the perspective of Popkewitz, was an "'agent' for helping the disadvantaged to overcome hegemonic oppression" (Janse van Rensburg, 1995, 92). Popkewitz went on to articulate the link between knowledge and power in education more broadly, drawing on the work of Foucault (Popkewitz, 1997). I did my Master's degree in Environmental Education during this time which echoes these concerns. It focused on the deep -seated power dynamics that manifest in environmental education teaching practice even when critical pedagogies are applied such as theatre of the oppressed and participatory teaching methods (Burt, 1999).

Such insights opened doors for South African theorists to consider knowledge as power and ask what this meant for education in South Africa. In 1998 the first article on decolonizing education emerged in the SAJEE and it was written by an Australian academic, Noel Gough (Gough, 1998). A year later Gough wrote another article, also published in the SAJEE, in which he critiqued South African environmental education for being silent about on issues of race, class and gender, despite this being a key focus of emerging environmental education praxis at the time. Using Foucauldian inspired Critical Discourse Analysis (later critiqued by Price (2007) for lacking adequate ontological depth), he asked the question "What are South African environmental educators using their new-found freedom for?"(Gough, 1999, 40). In the same issue of the SAJEE in which Noel Gough's challenge appeared, the first article to refer to indigenous knowledge (IK) was published by Soul Shava (1999) from Zimbabwe. Shava, having worked on indigenous plants in the Herbarium in Zimbabwe, and having completed an IK assignment in the Gold Fields Course run in Zimbabwe earlier (around 1995) later registered for his Master's degree at Rhodes University. He spent time in a rural community in South Africa and found that although young

people knew of indigenous medicinal plants, these plants were found less often in people's everyday diets. Shava attributes the growing negative attitudes towards wild plants "to modernization, the non-supportive role of formal education, and advertising, which encouraged people to rely on store-bought foods." (Shava, 1999, 85). It would be another five years before the next article on indigenous knowledge appeared in SAJEE; but with much environmental education indigenous knowledge praxis emerging since the early – mid 1990s in Share-Net and EEASA (cf. Masuku, 2018 for a summary). After that, research on indigenous knowledge appeared at least once in each edition, with the 2019 edition being almost entirely dedicated to indigenous knowledge practices from around the world.

The early SAJEE articles on indigenous knowledge were based on its scientifically proven value for better health or for better conservation of animals and plants. Interest in indigenous knowledge by black South African and other African students was led by scholars in the Masters in Environmental Education Programme at Rhodes University, e.g. Mabongi Mtshali, Sibongile Masuku, Edgar Neluvhalani (cf. Masuku van Damme & Neluvhalani, 2004) and encouraged and guided over the years mainly by the work of the Environmental Learning Research Centre, with staff devoting considerable energy to making visible the practices, science relations, societal and intellectual and cultural base of indigenous knowledge with Masters and PhD students, seeing indigenous knowledge as a critical socio-cultural foundation of co-engaged learning and pedagogy, and transformation of environmental education (O'Donoghue, 1995). Heila Lotz-Sisitka reflects how this trend has also taken root in other universities in South Africa, "Professor Lesley le Grange from the University of Stellenbosch has also, in recent years, contributed strongly to this trajectory, within a decolonial theoretical framing, all of which has also interacted with the explicitly decolonial work of Catherine Odora Hoppers at the University of South Africa who argued that local knowledges in Africa had been heavily subjugated by modern institutions, including education and learning systems"(H. Lotz-Sisitka, email correspondence, 13th February 2020 & cf. O'Donoghue and Neluvhalani, 2002).

2.2.3.1 Environmental learning as a decolonial practice

Environmental learning scholarship has continued to investigate the role of education as change-oriented. This has led to retrospective reviews on environmental and sustainability learning (Lotz-

Sisitka, 2015; 2017; 2019) over the last five years, but also to earlier texts such as those by O'Donoghue and Neluvhalani (2002).

One of these reviews, by Lotz-Sisitka (2015) traces the three generations of critical theory in South African environmental learning two of which have already been explored above, the Frankfurt school and the work of Harbermas. The third generation takes on the need for attaining rationality through deliberation, something that was lost in the post-modern turn where it became difficult to identify a single rationality because of the relativist ontological position of the second generation of critical theory (Lotz-Sisitka, 2015). One of the philosophical positions that explores this possibility is critical realism which is the philosophical tradition that underlabours this thesis (See Chapter 3).

The focus on problem-solving introduced by critical education continued into what was known as social learning, and a broader framing of sustainability education (Jickling, 1994; Wals, 2007; Jickling & Wals, 2012) and expansive learning (Engeström, 2007). Social learning and other new learning traditions emerged in response to a world at risk where problems were complex, integrated and scaled (from global to local) and difficult to solve. The shared theoretical concept in these newly defined approaches to learning was that of the learning space being centred around contradictions – a reflection of the environmental challenges we are facing being integrally related to global economic practices.

> Significant changes must occur in all the world's nations to assure the kind of rational development which will be guided by this new global ideal – changes which will be directed towards the equitable distribution of the world's resources and more fairly satisfy the needs of all people. (Wals, 2007, 35).

These new learning processes continued to emphasize the complex relationship between humanity and nature (Wals, 2007). Wals points to the need for an equal distribution of the world's resources, and concedes that this will require reducing harmful effects to the environment.

The intention of social learning is to create communities of learners who can work towards resilient and responsive practices. A valuable contribution from social learning is the question 'How do people learn?' This question demands that educators be reflexive and learn to generate learning practice that responds to the needs of people and context. Which means that environmental educators have to understand the learning experiences of the participants in front of them, including the racial, gender, class and social justice contradictions still so deeply entrenched in South African society. Social learning provides South African environmental educators with tools to question education's 'existing routines, norms, values and interests' (Wals, 2007, 36). Social learning follows a (non-linear) cycle of exploration, deconstructing, co-creating, experimenting and reviewing.

In recent years the environmental education movement have seen terms like 'transformative' and 'transgressive' incorporated into concepts of social learning. Education researchers argue that we need to design learning processes that will bring about transformations in the way we usually do things (Lotz-Sisitka et al., 2015; 2017). 'Transgressive' opens up possibilities for environmental educators to start critiquing their own work and ask whether our educational processes are addressing and preparing people to engage with the real causes of suffering and environmental destruction in the world. 'Transgressive' also forces us to critique our own position as teachers or facilitators and how we practise our teaching. This has led to revisiting social movement learning and in particular the work of Freire and Fanon in social movements such as the *Abahlali baseMjondolo* movement (Gibson, 2011). In particular this work provides a theoretical basis for the value of learning as living and working within a social movement where the social movement becomes the experimental ground for creating new society structures (Dei, 2010; Gramsci, 1988).

Much work has emerged and continues to emerge from the environmental learning movement in South Africa. The movement has become a place of African scholarship as well as a connection with international universities across the globe. One such body of work has been the original environmental education 'working together/working away' methodology which is still used in the Changing Practice course. Interesting recent work has emerged on decolonizing learning which includes work in expansive learning and on cultural-historical activity theory, underpinned by

critical realism to make it more relevant in an African context (Shava, 2008; Mukute, 2010; Mokuku, 2012; Pesanayi, 2016). There has also been a growing radicalization of South African environmental learning through engagement with South American and other Global South environmental learning movements, amidst the growing climate emergency (See https://transgressivelearning.org Accessed 13th September 2019).

The student protests of #FeesMustFall also raised the continual presence and effect of a colonial education system that is not changing in the university, a phenomenon also present in schools cf. (O'Donoghue & Neluvhalani, 2002; Odora-Hoppers, 2002; Masuku, 2018). There has also been a growing realization that without a significant change in the workings of capitalism, the changes needed to ensure that many do not suffer will not occur. This has also led to a more thought-provoking engagement with decolonization and what this means for environmental and sustainability education including the work of de Sousa Santos and Visvanathan on cognitive justice (Visvanathan, 2005; de Sousa Santos, 2007). In a seminal chapter, Lotz-Sisitka (2017) summarises what the commitments to decolonization are as understood by marginalized and young people and the academics that work in solidarity with them. These include: a realization of the intersectionality of environmental issues and issues of race, gender, class poverty and violence; a commitment to addressing what de Sousa Santos calls abyssal thinking (de Sousa Santos, 2007) in formal education and institutional cultures; a commitment to addressing the urban bias in education; a commitment to valuing knowledges which may have different ontological foundations to traditional western science; and finally a commitment to a more 'situated, reflexive and agency-oriented discourse that foregrounds emergent responses' (Lotz-Sisitka, 2017, 7). This has been the focus of the T-learning (with the 'T' standing for trans-disciplinary, transformative and transgressive) research project led by Heila Lotz-Sisitka and a team of co-engaged scholars where this PhD study is affiliated, and where it is making a contribution on engagement with social movement education and cognitive justice, with neither of these areas having been well researched in the field of environmental education to date. In particular this thesis has explored what it takes to generate and facilitate a course that aspires to these commitments.

2.2.2.2 In summary

What this scholarly work provides the Changing Practice course and this PhD applied research is a rich historical process of transformative praxis with which to enrich the continual development of the Changing Practice course to address the water justice concerns mentioned in the first section of this chapter. It also suggests that the reflexivity needed for emancipatory learning praxis means rejecting simplistic theories of learning such as the behaviourist conservation education approach and working with an ongoing reflexive interdisciplinary and cognitive justice approach to learning which draws on multiple theories and knowledge cultures (including psychoanalytical, feminist theory, psycho-spiritual, race and postcolonial theories) to explain theory-theory or theory-practice contradictions that emerge in the process of educating.

As mentioned in the first section of this chapter, the Changing Practice study was conceptualised at a time when there was a renewed interest in critical learning theory in response to the political landscape in South Africa, where people are currently experiencing significant failures of governance, with many feeling that the promises of transformation ushered in via the shift from apartheid to a democratic state in 1994 are unmet. Although the ANC government, 25 years after coming to power in 1994, still sees itself as 'the voice of the people', 'the people' no longer see it this way. As the government has gravitated into partnership with the private sector and neo-liberal governance trajectories (which Ronnie Kasrils called the Faustian pact (Kasrils, 2013)), civil society has been increasingly excluded, to the point where civil society sees itself and the government in opposition (Vally, 2007; Hart, 2014).

Today environmental degradation in South Africa is immediate and life-threatening. Although exacerbated by climate change, it arises primarily from the mismanagement and uncontrolled pollution of rivers, land and sea, as well as continued unequal access to clean water (Bond, 2005; Ruiters & Bond, 2010; Hallowes & Munnik, 2016). Understanding the political causes of this widespread environmental crisis has changed environmental learning in South Africa and is leading to a re-emergence of what Lotz-Sisitka (2015) calls a third generation of critical learning theory in environmental learning that is being worked out by T-learning researchers such as myself and others (e.g. Vallabh, 2017; Kulundu, 2017; James, 2019); one that needs to link theory-and-practice in practice; and one that grounds theory and practice in more robust

decolonial forms of movement that are emerging rapidly (i.e that develop an ontologically and epistemically dialectically grounded critical praxis) as argued for in this study (see Part 2). This work aligns with and interfaces with the popular education movement, social movement theory and practice, and environmental justice theory and praxis that similarly seeks ontologically grounded critical praxis framed within a deeply constituted emancipatory trajectory (Munnik, 2016).

This ability of the environmental learning movement to continually adjust requires the ability to identify theory-theory or theory-practice inconsistencies to make it possible for educators to continually respond to a shifting context. This applied PhD research tests what transformative cognitively just learning praxis means in the context of social movement learning for water justice, as this is an area that has lacked adequate action to date in the field despite the fact that researchers have sought to mark out the need for such praxis (e.g. Odora-Hoppers, 2002; O'Donoghue & Neluvhalani, 2002; Masuku van Damme & Neluvhalani, 2004; Shava, 2008; Masuku, 2018 as mentioned above). The intention is to contribute towards sensibilities of what transformative praxis looks like, including how a cognitively just learning space can be the practice ground for living into learning as a *caring activist practice*. It is from this position that I begin an analysis of the Changing Practice course and what this applied educational research may have to offer educational practice in a context of water justice.

Chapter 3: Becoming a heart-felt scholar

3.1 Introduction

At the foundation of this PhD research is critical realism. I am drawn to critical realism because it is committed to an emancipatory purpose. I relate to its explanations of power, emergence and agency as articulated in Bhaskar's transformative model of social action (Bhaskar, 2008b ;2009; Bhaskar et al., 2010a; Bhaskar, 2012). Bhaskar's dialectic method was at the core of the design of the Changing Practice course, and I follow its logic in my investigation of the praxis of cognitively-just transformative learning.

This chapter outlines how I have made critical realism a foundation for a cognitively just learning praxis. First I explain Bhaskar's DEA (diagnose, explain, act) process of practical reasoning that I have used throughout my practice for this PhD. I then show how I have used critical realism as the theoretical base for each of the four articles I have written. I explain the effectiveness of using cognitive justice in combination with critical realism as a solidarity promoting and mobilising praxis. Finally, I set out how I see analysis as distillation to enable collective and collaborative scholarship.

3.2 Diagnose, Explain, Act

As described in Chapter 1, the applied critical realist model of practical reasoning consists of three stages of moral reasoning: diagnose, explain and act (Bhaskar, 2008b).

3.2.1 Diagnosis

Diagnosis is the process in which a problem is described, where the evidence of the problem is clearly stated and understood. It is an iterative and collaborative process, as I describe in the fourth article "Imperfect educator-activists (See Part 2).

The figure below shows how Diagnosis takes place in the Changing Practice course.

Figure 19: Iterative process of diagnosis in the Changing Practice course

Diagnosis

D1: Cognitive justice concern
There is a knowledge dam blocking environmental knowledge flow from professional institutions to community activists.

D2: Cognitive justice concern
Rivers of environmental learning are polluted by past and current inequities.

D3: Cognitive justice concern
Gender violence inhibits women from being change agents and is unjust.

D4: Cognitive justice concern
At the confluence of professional and community-based knowledge networks , the value given to community-based knowledge is shallow.

Jane's PhD research on cognitive justice & transformational learning

3.2.2 Explanation

Knowledge does not flow easily from professional institutions to community activists. If we ask why, a 'shallow' explanation would be that the style and language of academic writing is inaccessible to people who don't have a tertiary education. But this is clearly not the only reason, or even the primary reason. In my experience knowledge remains dammed within professional institutions because of the belief of professionals that civil society is not capable of engaging in the creation of knowledge on an equal footing with professionals. It is also because English has become the global language of knowledge-sharing, which disadvantages many activists who are not English-fluent. It also has to do with the way those who receive knowledge are seen as inferior by those who produce knowledge. It even comes down to the fact that community activists do not look like they belong at a university – some activists on Changing Practice courses have been escorted off campuses by security guards because they didn't look like everyone else and were thus treated with suspicion.

This description of knowledge flow is also an example of how, in order to develop an adequate explanation of a problem, it is necessary to engage with multiple theories at multiple levels. Bhaskar offers a what he calls 'a laminated system' to develop a set of inter-disciplinary explanations of a problem (Bhaskar & Danermark, 2006; Bhaskar, 2016). The laminated approach looks for explanations at several levels, including "psychology of individuals; individual circumstances, such as differential access to wealth; face-to-face interactions such as acts of

kindness or acts of domination or abuse; culture, such as culture of individualism and materialism; society, such as an institution's lack of resources to support community-activists; geo-historical trends in the area in terms of social justice issues; and global trends in discourses" (Munnik & Price, 2015, 22). I use this lamination in my second article 'Entering the mud' (See Part 2) to explain why facilitation as care work needs to engage at multiple levels.

3.2.3 Action

The word 'action' in DEA is a little misleading because it assumes an effort to add or advance something. In critical realism action often means taking something away, or stopping doing something. I discuss the philosophical argument for such 'absenting' being transformative below. Absenting whatever inhibits us from transforming our practice requires that we first analyze (diagnose and explain) then test whether our explanation is correct by removing what makes the problem arise. If the problem persists then more diagnosis and action is necessary. This is an ongoing process as in each situation different gaps, blocks and contradictions will emerge at different times. The work of an educator-activist is to be continually alert to these contradictions, and to test out ways of absenting them within the educational practice.

The figure below demonstrates how, in each iteration of the Changing Practice course, I worked with a contradiction in our learning practice. Some of these became 'core contradictions' which changed our practice significantly and taught us what it meant to engage in cognitively-just learning.

Figure 20: Potential actions in relation to cognitive justice concerns in the Changing Practice course

1997 -2012

Cognitive justice concern
There is a knowledge dam blocking environmental knowledge flow.

Absent by generating change projects by activists in activist contexts.

Absent by adopting an overtly emancipatory learning focus generated by activist-researchers (participants) and educator-activists (facilitators) alike.
Course exists within social movement in response to social movement issues.

Cognitive justice concern
Rivers of environmental learning are polluted by past and current inequities.

2012 -2014

2014 -2016

Cognitive justice concern
You hit a woman, you hit the earth. You hit the earth, you hit a woman

Absent by an ecofeminist pedagogy exploring gender dynamics at the level of the personal, social movements, relationship with earth and change projects.

Absent by exposing the value of knowledge generation as care work or regenerative work as an alternative to knowledge generation as a commodity within a capitalist system.

Cognitive justice concern
At the confluence the knowledges meeting is shallow.

2016-2018

3.3 Working from an ontological foundation with emancipatory purpose

"It seemed to me to be patently obvious that society is constituted by more than just language; that society is about real oppression, real acute poverty, real deaths, real wars, real battles, and that there is a huge distinction between the word 'battle' or any number of sentences about battle, and real battle."(Scott & Bhaskar, 2015, 9).

In Bhaskar's philosophy an injustice is real and tangible, with material consequences. Poverty is not just a word or discourse; it is a physical and emotional suffering perpetuated by real structural inequities. There are real mechanisms that cause children to starve, women to be raped, and the earth to be devastated.

When I began my research writing, I adopted a post-structural approach (Burt, 1998). In the years following my Master's degree (Burt, 1999) I became frustrated by the relativist position of post-structural research. At the time I wrote that I needed to find a research direction 'for the activist in me to stand, for the environmental educator to believe in a better future'(Burt, 2012).

In the empirical or analytical research tradition, reality is concrete, material, 'out there', and independent of human thought and feeling. The critical realist ontology, on the other hand, states that reality is rooted in context and language and 'interpretations of it can be controlled by

human power relations' (Lotz-Sisitka, 2010, 17). The first task of a critical realist researcher is clearing out the ideological ground. It is a reclaiming of reality with the intention of enabling emancipatory action and freedom (Bhaskar, 2010, xv).

Bhaskar highlights what he sees as a fatal flaw in western philosophy, namely a conflation between the way the world is and the way we know the world (Bhaskar, 2008a; 2008b). To take an example, 'hard' scientists may see social science according to their way of knowing the world, and judge it inadequate because lacking empirical data. In other words, they conflate their way of knowing reality with reality itself. Such conflation leads us to treat the world as a closed system. Bhaskar advocates that both the physical sciences and the social sciences approach the world as an open system, where reality cannot be reduced to an empirical access to causal laws (Bhaskar, 2010). Reality would be instead viewed as laminated or multi-layered, with different disciplines addressing different 'domains of reality' (Bhaskar et al., 2010).

The same problem can arise from the other extreme. A great deal of social science theory argues that the way we know is socially constructed, meaning that we know only through language and cultural experience, in specific contexts. This implies that there is no true knowledge of the world to be discovered independent of social context and the researcher's intentions. In one sense this a valid statement. But it conflates an epistemological position with the way reality is, an ontological position. The result, taken to the extreme, is that all reality is nothing more than a human construct. This is the opposite perspective from the empirical scientist who only accepts a world reduced to empirical data. Both these positions draw on the world of experience as evidence of the known world (Bhaskar, 2010).

We are able to differentiate good science from bad science when we make the distinction between ontology and epistemology. Good science, according to Bhaskar, is based on theories that understand the mechanisms that need to be present in order for a particular phenomenon to exist and be enacted (Bhaskar & Danermark, 2006). In this paradigm the quality of scientific research would not be judged according to our epistemological preferences but according to how well a theory stands up to reality.

Although we tend to take it for granted that the function of science is to produce objectively derived knowledge about the world through observation and contemplation, science is also, and perhaps primarily, a social activity that aims to influence the world of which it is a part (Danermark et al., 2005). Danermark et al. (2005) argue that the validity of knowledge is a matter of how it functions in practice. Depending on who you are, where you live, and what your activity is in the world, you will find different kinds of knowledge more or less useful to you.

The usefulness of knowledge is always dependent on how well its concepts capture the generative mechanisms in the objects we study (Danermark et al., 2005).

Critical realism always tries to understand the generative mechanisms of a phenomenon rather than just taking the world of experience as evidence, because otherwise we "reduce questions about what there is (ontological questions) to questions about what we can know (epistemic questions)" (Collier, 1994, 36). Bhaskar refers to this reduction of knowledge to evidence as the epistemic fallacy (Bhaskar, 2010).

To map knowledge, Bhaskar uses an ontological stratification of three overlapping domains of reality – the real, the actual and the empirical. The domain of the empirical is sense experience and constructed concepts, the actual is that of events and experiences, and the real consists of the mechanisms leading to the events and experiences of the phenomenon being studied (Hartwig, 2007, 401). The three domains are dependent on each other. Mechanisms possess causal powers that may or may not produce events, which may or may not be produced as sense experiences in the domain of the empirical. As Plant suggests "...the success of an explanation about the nature of reality is judged not by the number of times an expected event or experience occurs, it is the logic of the links established between the levels" (Plant, 2001, 4).

Bhaskar developed his stratified ontology further into the concept of a 'laminated system' (Bhaskar, 2010, 4) which provides a way to research the world as an open system, using a multiplicity of causes, mechanisms and theories to explain the phenomenon being studied. I have found the laminated system concept extremely useful for understanding co-learning and the

facilitation of co-learning as a 'lamination of care' required to bring about cognitively-just transformation (See "Entering the mud" Part 2).

The laminated-knowledge approach is easily understood by educator-activists and activist-researchers in the Changing Practice courses. It is broad enough to include the mechanisms that enable facilitation, the development of change projects as learning hubs for activist-researchers, and the ongoing transformative learning praxis as a whole. Bhaskar's dialectic offers the same basic principles for both knowledge acquisition and emancipation, because these are both based on 'absenting' (absenting absent knowledge, as well as absenting absent things necessary for wellbeing). This methodology breaks down the dichotomy between research, education and activism (L. Price, email communication, 18th December 2019). For Bhaskar, knowledge, mind, and research are all part of reality – "the whole is in the part, as my body is in the writing hand"(Bhaskar, 2008b, 10).

3.3.1 Critical Realism's emancipatory purpose

Bhaskar (2010) argues that the search for a depth reality at all levels can itself lead to emancipatory change. Understanding the mechanisms of a given phenomenon rather than simply the event or experience, brings us closer to understanding the way things are and how they have come to be. We can then produce what Bhaskar calls an 'immanent critique' (Bhaskar, 2010, 8) of a phenomenon. This is one of things the Changing Practice course learning process tries do. As facilitators of the course, we also attempt to explain the unfolding of environmental learning by highlighting internal contradictions in the learning process. This makes action to bring about change all the more likely.

By adopting critical realism's philosophical position, I constitute my research project as an emancipatory endeavor that engages both self and society. I also invite this project to be judged not only on what knowledge is produced but on whether the study contributes to emancipatory research and practice.

3.3.3 The transformative dialectic

The dialectic is a form of reasoning that has been in existence since Socrates. It is particularly associated with the thinking of Hegel and Marx in 19th and 20th century philosophy, and has been the basis of most radical social critiques since Marx.

After Bhaskar had worked out western philosophy's conflation of ontology and epistemology, he turned to consider the philosophical arguments of dialectic reasoning. Here he identified another hiatus in Western philosophy, namely that reality is mostly spoken of in terms of its positive qualities, after which there is silence about its negative qualities (Bhaskar, 2008b). Bhaskar names these negative qualities 'absences'. If reality only consisted of positive qualities, then change could only redistribute these qualities rather than remove them (Burt et al., 2018). The transformative or critical realist dialectic establishes where absences can be absented, and thus new knowledge and action generated.

> "… the long-standing belief in Western Philosophy that you can't say anything about negative qualities or that they don't exist in reality. Change is always a redistribution so there is no real change going on in reality, and in particular, the world is positive and present – there are no absences, gaps, holes or contradictions in it. I think that it [dialectic critical realism] does explode the myth…"(Scott & Bhaskar, 2015, 2)

3.3.2 The transformative model of social action (TMSA) as a framework for the concepts of agency, emergence and power

I have used Bhaskar's TMSA as a guiding principle in the Changing Practice course, using critical realist concepts of agency, emergence and power within the course and to analyze the course process, impact and cognitive justice praxis (Bhaskar, 2016). Below is a brief description of the thinking behind the TMSA.

3.3.3.1 Social phenomena as laminated and emergent

Bhaskar's methodology is valuable for identifying the underlying mechanisms of a particular social phenomenon and understanding how these mechanisms are laminated (existing at different levels and scales in society) and emergent (one level may emerge out of another but is not reducible to it) (Bhaskar, 2010) See below for an example of how this inter-disciplinary

approach was used when working with cognitive justice as a solidarity and mobilizing umbrella concept for emancipatory work).

3.3.3.2 Agency, power and the four planar being

Critical realism reminds us that we are all born into a time, place and culture which has structure and context. Although we have no choice about the context, this does not mean that we cannot influence it. This is the emergent quality we all have. beings have agency, and every act is agentive. "Society is both the ever-present condition (material cause) and the continually reproducing outcome of human agency"(Bhaskar, 2008b, 37).

Bhaskar considers agency enabled at four levels or planes of relationship, which he calls the four planes of being (Scott & Bhaskar, 2015; Bhaskar, 2012). The first is at the level of our relationship with ourselves, the second our relationship with others, the third the level of social structures, and the fourth our relationship with the earth. He argues that transformation needs to happen at all four levels (Scott & Bhaskar, 2015).

Environmental educators need to 'plug in' to these levels of potential agency when designing learning processes (L. Price, personal communication, 8 February 2017). The four-planar concept also provides a lens to understand what kind of learning has happened from a learning intervention. I define these planes in my third paper "Research for the People, by the People" (See Part 2) as follows:

Material transactions with nature (our relationship with the earth): transformations at the level of personal and collective interdependence with species, habitats, landscapes, the planet, and even the cosmos (Olvitt, 2017, 6).

Social interactions between people (our relationship with others) : individuals and social systems cannot be reproduced or transformed without social interactions (Bhaskar, 2009, 6). Social interactions between people are described by Bhaskar as on a continuum between two poles of enabling, which Bhaskar refers to as Power 1 and Power 2. Power 1 is our transformative capacity, while Power 2 is authority or domination or oppression. Whether these are 'good' or

'bad' depends on context. In a medical emergency, for example, power 2 is given to a doctor by society, enabling the doctor to take control over the health of the patient with the intention of saving their life. However, when the Chief Executive Officer (CEO) of a mine can order a private security company to shoot at workers for not working, Power 2 is destructive. In such cases, Bhaskar writes, "emancipation from Power 2 relations will in general depend on an augmentation of the transformative capacity or Power 1 of the oppressed"(Bhaskar, 2016, 55). Transforming Power 2 also requires knowledge of the context –"what explanatory structures and mechanisms account for Power 2, and the conditions under which they can be transformed."(Bhaskar, 2016, 55). If the context is right, or made right, transformation occurs not only at the level of our relations with social structure but also at the level of social interaction.

Social structure (our relationships with structure): although social structure precedes agency, the form that social structures ultimately take depends on what we have done and what we will do.

The embodied personality (our relationship with ourselves): an individual is an embodied, historical, feeling and thinking being. There are many ways in which individual freedom can be suppressed – human bodies can be physically constrained or treated with disrespect, ways of thinking and knowing the world can be valued unequally, individuals do not have the same access to education. Transformative action aims to free the body from risks to health, to free the mind towards more open ways of thinking, and to heal psychological conditions such as lack of confidence or feelings of inferiority. All these are constraints that can inhibit action (Bhaskar, 2008b).

My involvement with the ideas of critical realism did not come about only out of a need to provide a theoretical background to my research. It came about mainly because I found these ideas so useful in the practice of social movement learning. This happened again when I began using the concept of cognitive justice as a unifying and mobilising concept to shine a spotlight on how social movement learning could be a valuable practice for realising environmental justice. Cognitive justice is one of many iterative explanations of what we need for a more just world. It builds on, and adds nuances to, a theoretically rich lineage of emancipatory thinking. It helps us

as educator-activists to declare our allegiance and solidarity with community-based environmental activists, and make their concerns, knowledge and scholarship our central focus.

3.4 Theoretical foundation of the four PhD articles

As the foundation of this research is critical realist philosophy, I have drawn here on Bhaskar's articulation of a transformative dialectic. I have not used Bhaskar's philosophical language but have adapted it to generate a series of questions to guide a practice of dialectic reasoning and action (See Part 2). Here I briefly summarize the theoretical tools I have used in each article.

In the first paper, "A peaceful revenge", I introduce the philosophy of critical realism to underlabour the concept of cognitive justice, and then use the critical realist dialectic to trace the transformative leaps that emancipatory thinkers Freire, Biko and Visvanathan followed in explaining the value of cognitive justice praxis for environmental justice.

In the second paper, "Entering the mud", I draw on critical realist notions of emergence to argue for the lamination of transformative care as the appropriate praxis for education-activists.

In the third paper, "Research for the people, by the people", I explore the work generated by a group of activist-researchers through the Changing Practice course. I follow the critical realist dialectic to describe the group's contribution to transformative capacity using cognitive justice. I then reflect on how their work enables agentive powers, using Bhaskar's four-planar system.

In the fourth paper, "Reflections of imperfect educators", I explain how cognitively-just learning praxis is itself a change project that, guided by dialectic reasoning, engages in transformative leaps in educational and activist praxis. Reflexive practice at multiple levels ensures that an educator embodies education as an activist practice. These levels include facilitation, the structures within which the course finds itself, the broader network of the social movement, and the learning that emerges from the course.

3.5 Cognitive justice as a solidarity and mobilising praxis for emancipatory learning and scholarship

3.5.1 Cognitive justice underlaboured by critical realism

In article 3 "Research for the people, by the people" (See Part 2), I reflect on how a research perspective on indigenous knowledge can inadvertently reinstate master-slave power dynamics. This can happen if researchers try to value local and indigenous knowledge but do so in ways that reduce these forms of knowledge to relative discourses devoid of explanatory power and action. Relativism undermines agency and the achievement of emancipation because there is no way to arrive at value judgements and so take action. On the other hand empirical scientists, whose work is supposedly devoid of values, ignore the effects of injustice on humans and non-humans alike. If they have any engagement with local or indigenous knowledge it is to validate their scientific claims rather than trying to understand this contextually rich knowledge in its own right as part of an embodied practice.

Cognitive justice questions the dominant paradigm of Humean-based science which does not recognize the powerful and inventive knowledge-creation of all people (Burt & Wilson, 2017). Even cognitive justice itself, if grounded in empirical science or post-modern relativism, can result in an unjust use of local and indigenous knowledge.

To avoid this trap and resist these unjust ways of engaging with local and indigenous knowledge, it is important to underlabour cognitive justice with a critical realist approach which embraces ontological realism, epistemological relativism and judgemental rationality. Judgemental rationality means that the criterion for judging something as truthful is not whether it is statistically generalisable, but whether it is the best explanation for the greatest part of reality. Critical realism resists conflating facts and values, and refutes the claim that facts lead to values (Bhaskar, 2009). We argue in "A peaceful revenge" (See Part 2) that truth need not be packaged in scientific form because "… when it becomes possible to arrive at the truth without first going the route of laboratories and statistical analyses… it then becomes possible for the average citizen to contribute to the knowledge-making process." (Burt et al., 2018, 494)

This is not to say that scientific knowledge is not useful, but simply that it is not sufficient for addressing environmental injustice. What are both necessary and sufficient are "transcendental theories about the way that things are and how they work – and this kind of knowledge is ubiquitous" (Burt et al., 2018, 494). This is the knowledge that we use in our everyday lives.

Cognitive justice becomes more possible if underlaboured with critical realism, because their combination allows us to accept the non-empirical as real without giving in to ontological relativism in order to explain reality. This is possible through the layered nature of critical realism, as opposed to empirical explanations which do not include or reveal all the mechanisms that make an event possible (Burt et al., 2018). Leigh Price calls Western science's inability to take indigenous knowledge axiology seriously "effectively racist" in that it takes its own superiority for granted (Price, 2016b, 345). As argued in Burt (2020, 5) (See Part 2) critical realism "sees mechanisms and structures as emerging out of the empirical levels of reality, and so connects all phenomena to the real". By embracing epistemological relativism, critical realism allows the diversity of explanation that is gained from a cognitively-just learning approach. This diversity of explanation does not take away from the reality of the mechanism, if anything it adds to it.

3.5.2 Cognitive justice as an umbrella term for working across emancipatory theories

As mentioned in Chapter 1, Bhaskar sees interdisciplinarity as necessary because reality is layered, with each layer of reality relating to and emerging from other layers, without being reducible to them. What does this mean for cognitively-just learning praxis? In article 2, "Entering the mud" (See Part 2) we give a laminated argument for cognitively-just learning praxis as care work, and draw on multiple theories at multiple levels to make this argument.

In Chapter 1 I started from the assumption that cognitive justice was necessary for emancipation. Through this research I tested this assumption in the Changing Practice course and in the process drew on multiple theories to understand the contradictions that arise. This was only possible by working with cognitive justice as praxis and seeking to understand how this praxis works in the real world.

For example, empowered learners ideally free themselves from inequalities and injustices at multiple levels, including those of their own minds (psychological shackles) and a cognitively-just learning intervention would enable them to do so (Leigh. Price, email communication, 19th December 2019). In the figure below I demonstrate some of the theories that explain and guide cognitively-just praxis as care work.

Transformation of our
relationship with the planet
Caring for all beings

Transformation of
networks & structures
*Caring for our social
networks*

Transformation of
communities
Caring for our relating

Transformation of our
internal world
Caring for ourselves
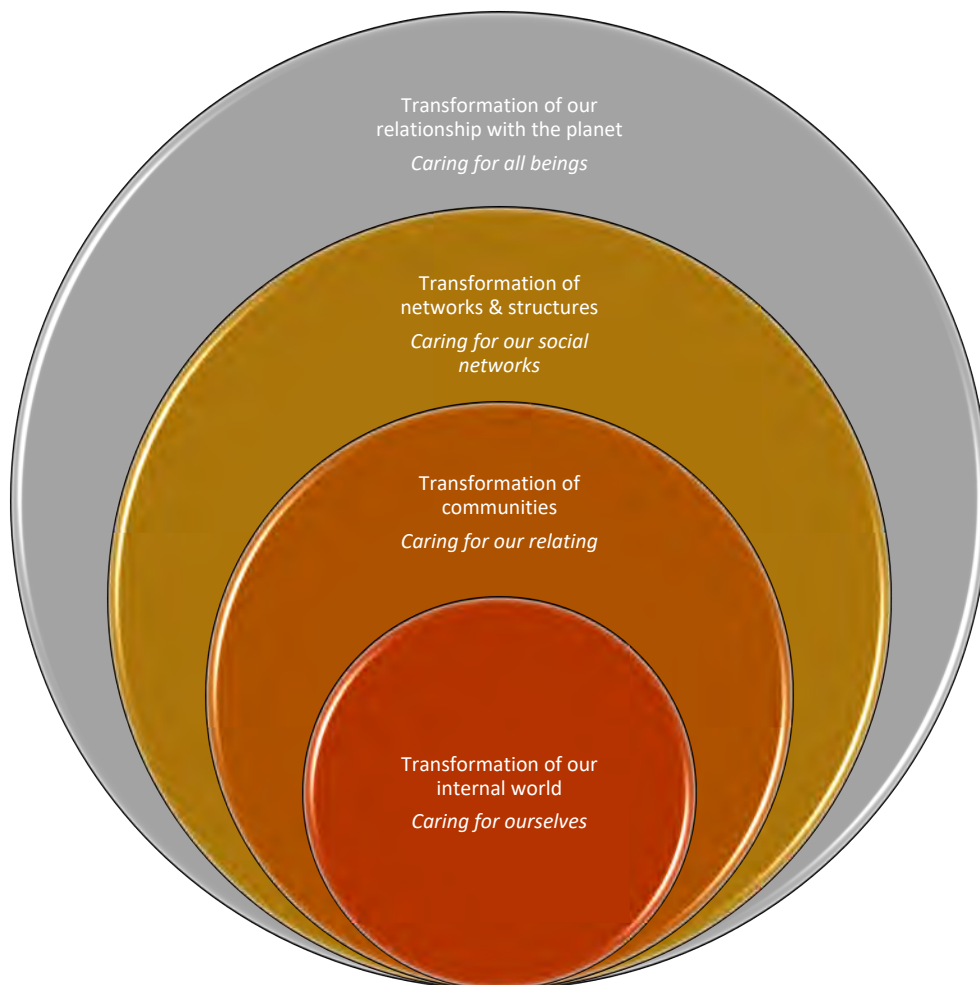
Transformation of our internal world.

Caring for ourselves

Mindfulness

Trauma psychology

Ecopsychology

Spiritual wellbeing theories

Cognitive behavioural therapy

Professional coaching
Life planning
Learning theory on cognition and identity
Transformation of communities
Caring for our relating
Conflict resolution
Collective action
Organisational management
Leadership
Local governance
Theatre of the Oppressed
Emancipatory pedagogy
Learning theory
Citizen science
Local knowledge
Transformation of networks and structures
Caring for our social networks
Social movement learning
Social movement theory
Sociology of knowledges
History of knowledges
Politics of knowledge
Political economy
Network theory
Cultural historical activity theory
Post-colonial theories
Economic theory
Marxism
Socialism
Indigenous knowledge
Ecofeminism
Transformation of our relationships with the planet
Caring for all beings
Socio-ecological systems

| Climate science |
| Spiritual knowledge |
| Indigenous knowledge |
| Adaptation and resilience theories |
| Water systems |
| Marxism |
| Feminist theories |
| Ecofeminism |
| Post-colonial theories |
| Beyond growth economic theories |

Figure 21: A lamination of cognitive justice as an umbrella term for working with emancipatory theories

3.6 Research as a collaborative and collective scholarship in transformative learning praxis

In education we do not often think of research as an ongoing learning practice. However, in the Changing Practice course, research is always integral to the learning process, learning design and facilitation.

As with most change projects generated by activist-researchers, the Changing Practice course research is a collective and slow scholarship (Bevington & Dixon, 2005; Mountz, et al. 2015; Gale, 2017) . As the coordinator of the course, I deliberately designed and promoted our reflexive practice and research to be grounded in the ongoing and broader lineages of social movement learning and environmental learning.

It was difficult to integrate the co-researching and co-learning of the research into the PhD process, as a PhD is designed for an individual's research. The PhD approach to learning and research does not allow much for co-learning and cognitive justice. This is not to say that the rigour of this PhD process has not been valuable. It has been. Through its scholarly engagement I was able to introduce the solidarity concept of cognitive justice and re-explored emancipatory educators and thinkers.

However, the structure of a PhD does not model the experience of co-learning and knowledge creation, and that creates contradictions that have a real impact on the world and on scholarship, especially for a researcher like myself who believes that knowledge is created in networks and through relationships. An individual can become a curator or guardian of institutional knowledge while accepting this knowledge was not generated solely by him/herself (Leibowitz, 2017). This is the position we took in the Changing Practice course. Thus this thesis is only one of many writing practices that made up our reflexive learning practice. It needs to be understood in relation to a body of networked labour (See Appendices for examples).

As explained below, this iterative, reflexive and co-learning approach to scholarship took place over a period of 10 years and involved a growing network of educator-activists and activist-researchers each contributing to the learning process. The timeframe of a traditional PhD was too short, and the contradiction of situating it as an individual's learning process for social mobility, even though the topic was social mobilisation, was difficult. However valuable a university is for learning it is not suited for a long-term community based social movement and the networked learning it requires. It is therefore vital that a course like the Changing Practice course be situated within a broader process of continual learning and action built on collective engagement.

I came to view the Changing Practice course itself as a change project. This followed naturally from the tradition of social movement learning which emphasizes that the new social relations we want to see in the world should be practised in the learning context itself (Mayo, 2009; Dei, 2010) . The generative theme for our own change project (the Changing Practice course itself) is stated in our second article "Entering the mud" as "learning about and building examples for transformative learning as an activist practice, and as a valuable learning movement within social movements"(Burt, et al., 2019, 9) (See Part 2). One of the key learnings from our experience was that cognitively-just environmental learning is best designed and facilitated within an ongoing social movement or network and that part of the learning practice is to learn, collaboratively, how to nurture the movement.

In "Entering the mud" I explain how this reflexive, research-based cycle of the course is designed:

"Each time the course is run, we as educator-activists explore a generative question, one that has either emerged during the course or which has arisen while we were reflecting on the course and designing the follow-up course. We don't just research the questions but live into them through our practice. John Law advocates for different forms of knowing that social science methodologies do not generally take into account (Law, 2004). Such forms include knowing as embodiment (listening to the sensations in the body); knowing as emotionality (listening to the emotions as apprehensions, passion and fear); knowing through techniques of deliberate impression (questioning perceptions of what is rigorous and what brings clarity) and knowing as situated inquiry (how far local knowledge travels and whether it makes sense in other contexts) (Law, 2004, 4; Burt et al., 2019, 10).

Learning to listen at multiple levels becomes a core cognitively-just research practice. Listening to participants' and facilitators' experience of learning is a starting point for unearthing questions we need to address if we are to decolonize our learning practice. This is what Fricker (2007) calls "epistemic justice". Fanon argued that the experience of oppression could not be known only through theory: it was an embodied felt experience (Dei, 2010).

In this way listening for the stories of the body and the mind brings to the surface new 'learning about learning' that is cognitively-just. Such listening has led to explorations on the role of mediation and question-based learning[4], networked social learning and cognitive justice[5], and transformative agency through layered care work[6]. A new learning question emerged from the final Changing Practice course concerning networks of solidarity between academic institutions and activists. This has become the focus of a masters research project by Taryn Pereira, a facilitator on the Changing Practice course, although in a different context. (Pereira-Kaplan, 2019).

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[4] Documented in a Water Research Commission report ((Burt et al., 2014) See Appendix A) and a PhD thesis by Nina Rivers (Rivers, 2014).

[5] Documented in Wilson et al., 2016 (See Appendix A); Burt & Wilson, 2017; Burt & Lusithi, 2017 and in this PhD portfolio.

[6] Documented in "Entering the Mud"(Burt, et al., 2019) and this PhD portfolio.

Changing Practice course as a transformative learning change project

Changing Practice: Eastern Cape Communities & question based learning

Changing Practice: South African Water Caucus & monitoring the NWRS2

Changing Practice: Olifants CSO & resilience through collective action

Solidarity networks & Changing practice (Pereira Masters research)

Mediation & question-based learning (Burt et al, 2014)

Networked transformative learning & cognitive justice (Wilson et al, 2016)

Deepening transformative agency at multiple levels (Burt et al, 2018)

Jane's PhD research on cognitive justice & transformational learning

Figure 22: Changing Practice course as an ongoing change project

This PhD has been slowly distilled through collective scholarship. It contains layers of listening into questions and insights in the company of others (both individuals and institutions) (Mountz, et al., 2015). These distilled insights were then woven back into the learning and facilitating.

As can be seen from the diagram above, this PhD draws on evidence from 3 iterations of the Changing Practice. Although each course followed the same design and transformative learning approach, the way in which participants came onto the course and the material they engaged with was different every time. The course was adapted depending on what movement it was serving and the broader social change process it contributed to. Even the criteria for being able to attend the course changed over time as we learnt what worked and what didn't. Two criteria remained the same: 1) Participants needed to have a Matric certificate and should be able to participate in a course where English was the shared language. For the second and third Changing Practice course organisations applied to attend rather than individuals. For the final Changing Practice course we included in the criteria: 1) the organisation sending participants on the course could show evidence of an administrative structure e.g a organisation constitution or set of principles and 2) the organisation could provide the participant with access to a computer

for assignments. In the table below I show the differences in the course in terms of who attended, how many modules there were, and how participants were assessed.

Courses	Recruitment	Broader social change process	Participants	Demographics	Accreditation process
Eastern Cape Communities and question-based learning	As this was a pilot, volunteers were recruited from Eastern Cape community based organisations or local NGOs. Attendance was fully funded.	The course piloted the question-based learning model and was situated within a broader research project on change-oriented learning and mediation of water knowledge.	1 post graduate university student who worked for a student run NGO 4 NGO participants 2 participants from community organisations	5 black South Africans 2 White South Africans 4 women 2 men	Each assignment was judged on a set of criteria shared with participants beforehand. Assessment. Each criteria was judged as Basic, Good or Excellent. Half of the criteria had to receive a Good or Excellent to pass. A participant could rework their assignment as many times as they wished.
South African Water Caucus and the monitoring of the NWRS2	This course was specifically designed for the South African Water Caucus a national social movement in South Africa. Organisations from four provincial nodes of the SAWC	The course was part of a broader action research project investigating civil society monitoring of the National Water Resource Strategy 2. Organisations who attended the course were part of	Three organisations attended from the Eastern Cape WC(ECWC), the Western Cape water caucus (WCWC), the Mpumalanga WC (MWC) and the Gauteng water caucus GWC). 3	All participants were black South Africans 4 women 5 men	The first and second assignment was done by each individual on the course. The third assignment was a collaborative assignment. Assignments were assessed as above.

	were requested to nominate an organisation to attend. The organisation then had to nominate 2-3 members to attend the course	the research project	people attended from the ECWC, 2 from the WCWC, 3 from the MWC and 3 from the GWC.		
Olifants River CSO and the resilience through collective action	Organisations from the Olifants CSO network needed to apply to attend the course. Each organisation could nominate 2-3 members to attend.	The course was funded by the Association of Water and Rural Development as part of the USAID: RESILIM O project. It formed part of the projects support to building capacity in civil society.	Six organisations attended: 12 organisation from the Upper catchment, 3 from the middle catchment and 1 from the lower catchment	13 participants were black South Africans 1 was black Nigerian 12 women 5 men	All assignments were done collectively and assessed as above.

The final section of this thesis is a letter to the next generation of educator-activists who hope to generate Changing Practice courses in their own contexts and work environments. This is followed by a transcribed conversation between myself and these next generation educator-activists as well as one other Changing Practice course facilitator. This represents the ongoing reflexive and collective scholarship that is required for cognitive justice learning practices.

3.6.1 Evidence of respectful engagement as an ethical position

Above I write about how this PhD is based on 10 years of co-learning within environmental activist movements. One of the mechanisms for this ongoing learning has been the Changing Practice course which this PhD investigates. As an educator-activist working from within social

movements the ethical considerations for writing about our collaborative work for a University degree is challenging and contradictory. As I argue above, the University structure (like most of our structures) is not currently suited for cognitively just scholarship although shifts are happening fast. It takes a lot of careful thought to navigate the passage between gaining an academic degree and positioning this PhD process within a broader movement of learning and change. This is particularly so as a white woman in South Africa where structural whiteness is so entrenched both within our own views of ourselves, in relationships and in structures. I worked with the activists that participated in the Changing Practice course to understand how to navigate the constraints between co-learning and an individual representation of that learning in the form of a PhD. Luckily the department where I was doing this PhD work encouraged transgressing the traditional PhD.

The participants of the Changing Practice course and the facilitators attempted many collaborations of sharing in spaces where community activists often are not heard. I tried to use the PhD as a way of enabling community activists to get access to these spaces. We used these experiences to discuss the feelings, challenges and inequalities that activists experienced in these spaces such as at two international conferences where community activists were shocked about how rural and poor communities were spoken about in abstract terms without no one from these communities being present at the conferences. One activist described how he felt lonely at an international conference. In comparison, when we attended a popular education conference the experience for both of us was different. We both felt we could speak openly about the challenges of dismantling structural whiteness and patriarchy and white fragility was openly challenged without there being any repercussions besides open and difficult conversations.

The PhD, as a work of scholarship for a degree, means that I need to demonstrate my individual abilities and one of these abilities, for me, is to engage in the presentation of the PhD with integrity by acknowledging the structural weaknesses of the PhD process and at the same time working at transgressing them towards a more cognitively just scholarship. This takes a lot of extra work and also planning so as to enable collaboration with activists who often do not have access to email or computers. It also means doing the hard-emotional work that it takes to

navigate the structural inequalities that are expressed in our material lives and our relationships to each other.

The first step I took was a simple one. Most educational institutions ask people to enter the world of the educational institution without acknowledging that this context is often alienating and painfully excluding for people of colour and women. For this reason, I made the conscious effort to be in the worlds of the activists, to meet them in their communities and in their offices rather than asking them to meet me in the world of the University, online or in University buildings that are often built like colonial palaces with private security guards patrolling the premises. Secondly, my PhD was openly part of the Changing Practice course. It was discussed at meetings and I was open with all participants about what I was researching and how the facilitators were working with what we were learning. In the last Changing Practice course two facilitators were previous participants of the course and engaged with the facilitators reflections. Facilitators reflections were shared with participants and we were open about how we came to changing aspects of the course based on participants experiences and input.

When it came to writing up the PhD all interviews were cleared through the usual procedures with activists. Unlike researching other sectors, activists usually want their names to be mentioned in scholarly writing. This is seen as a way of acknowledging their knowledge. In line with this, interviews were not done to capture data but rather designed as an opportunity for activists to engage in the sense making process. This is why I made a concerted effort to reference activists in the same way that an academic would be referenced rather than reducing their knowledge to data as an interview.

One of the articles ([article 3](#)) was based on the change project of the Vaal Environmental Justice Alliance (VEJA). I requested permission to use the change project from VEJA. I chose to quote their change project as any scholarly work would be referenced (secondary data) rather than see it as primary data/data generated from the Changing Practice course. I specifically worked with their writing as I would have worked with any professional scholar's work. I did this on purpose to make a point that as we don't have to view research engagements as data collection but rather as collective scholarship. For me this meant respecting people's knowledge as vital, valuable and

as important as any professional knowledge and asking clear permission to use their work even if it is not published through recognized professional channels. I also shared the article with the VEJA participants who wrote the change project and waited for their clearance of the article before submitting it to the journal.

Although some of the articles I wrote were written in a style that would be difficult to access due to the language and theory that I engaged with, I shared all articles with a short description with all the Changing Practice participants on our WhatsApp groups and private Facebook page. This was done before publication to enable activists to comment or query my analysis.

For article 2, which contained re-constructed stories of learning moments, I used pseudonyms because I wrote the reconstructions. I did send both stories to the women on whom the stories were based and asked whether they were happy with the reconstruction.

For article 4, in particular, I sent the article to every facilitator on all three of the Changing Practice courses (12 people) and waited for each person to comment before finalizing the paper for the PhD and submitting it to a journal. Based on the conversations that arose from this engagement around article 4 we decided to hold a follow up reflection meeting on the Changing Practice course which became the final chapter in the PhD.

3.7 Distilling a PhD from a broader process of social change

Distilling a PhD from collective scholarship
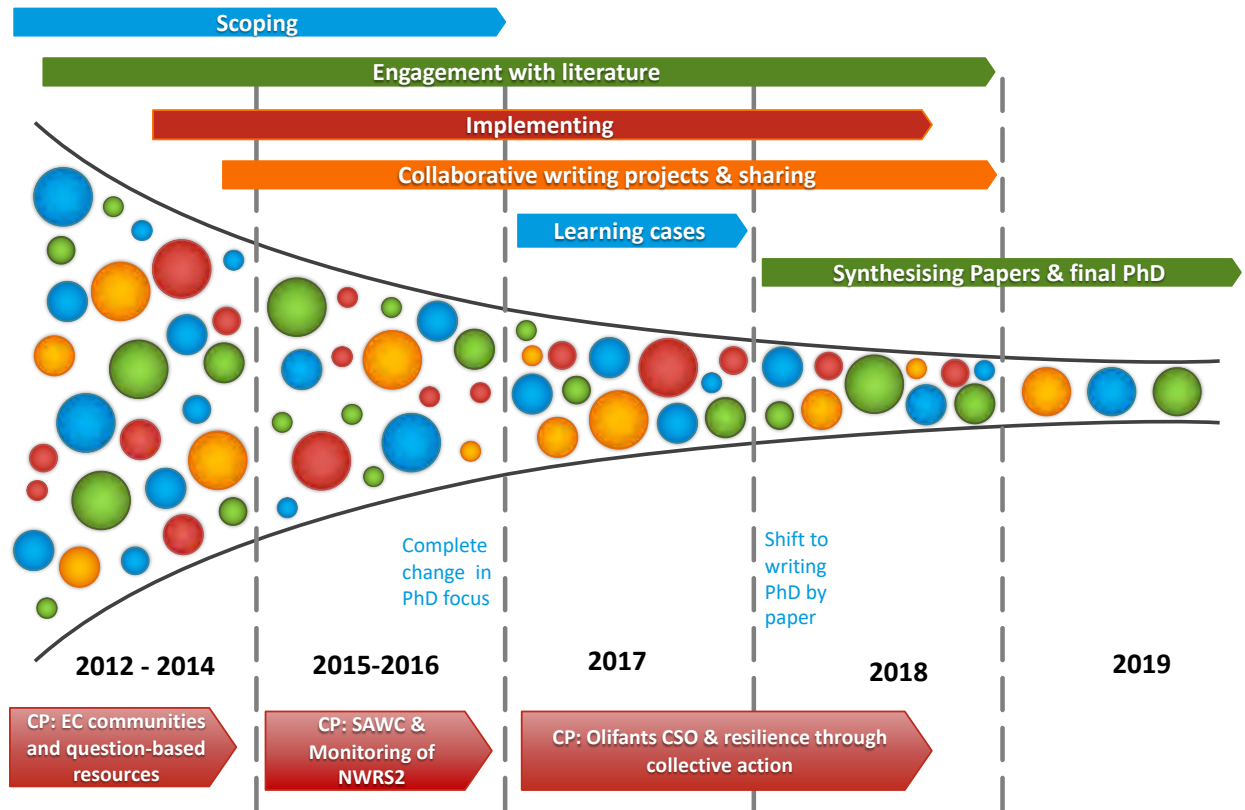
Figure 23: Distilling a PhD from collective scholarship

The figure above documents the slow distillation of this PhD from collective scholarship. It has not been a step by step process but a weaving in and out of various activities – reviewing literature, diagnosing, explaining, analyzing, writing and synthesizing.

In mid-2016 I had to change the PhD focus due to external circumstances, being difficulties in connection with situating the PhD within an NGO programme that was adopting a trans-disciplinary focus. Internal conflicts within the organization and between its directors made it impossible to situate the PhD research there. Fortunately, the Environmental Monitoring Group, with whom I was about to run the second Changing Practice course, agreed that I could research that process for a PhD. In retrospect it was a highly significant change, because the original focus would have been a more theoretical study on trans-disciplinarity (Burt, 2014). I soon changed focus to this applied study on social movement learning and cognitive justice praxis. Thus,

although I had been registered for the PhD since 2012, my research work only effectively began in mid-2016.

From the start of 2018, Rhodes University Education Department allowed the option of doing a PhD by publication of articles. This approach opened up an opportunity for me to explore a more collaborative format and use the PhD writing process as a distillation of collective ideas with four other scholars.

3.7.1 Distilled analysis

The analysis of evidence followed the same dialectic process as the Changing Practice course participants followed in generating their change projects. Evidence was collected as follows:

Raw Data: Confidential data – Interviews with participants, minutes from modules, minutes from research meetings, minutes from SAWC meetings, participants' assignments, course modules, WhatsApp messages, reflection notes, Facebook posts. Interviews were part of formal course evaluations that were designed into the courses and therefore not all were done by myself but were done by the evaluator of the course. Below is a table highlighting where this data comes from. All this data was used in the first distillation (see below).

Data	Course	How	Language	Who
Interviews	Eastern Cape communities and question -based learning	3 interviews were done after each module. 9 in total	English with Xhosa translation for 2 participants	Nina Rivers evaluated the course
	SAWC and monitoring the NWRS2	3 Interviews were conducted after Module 2 with participants. Interviews were conducted with 2 facilitators. All interviews were recorded and transcribed.	English	Jane Burt evaluated the course
	Olifants catchment CSO and resilience	6 interviews were conducted after Module 4.	English	Dr Victor Munnik evaluated the course

	through collective action			
Minutes from Modules	SAWC and monitoring the NWRS2	Comprehensive notes were captured for all modules and for all research meetings	English	Facilitators took turns to capture process.
	Olifants catchment CSO and resilience through collective action	Comprehensive notes were captured for all modules and for all facilitators meetings	English	Facilitators took turns to capture process.
Recordings from mentorship sessions	SAWC and monitoring the NWRS2	Recordings were taken from 2 MWC mentorship sessions and 1 GWC mentorship session. Recordings were transcribed.	English	Jane Burt recorded and transcribed
SAWC meetings	SAWC and monitoring the NWRS2	All SAWC meetings that were attended were recorded and transcribed	English	Jane Burt recorded and transcribed
Assignments	Eastern Cape communities and question -based learning	6 x 3 assignments were used as data along with various versions of the assignments.	Most assignments were written in English. Two were written in Xhosa	N/A
	SAWC and monitoring the NWRS2	11 x 2 assignments, 3 x final assignment along with various versions of these assignments.	All assignments were written in English	N/A
	Olifants catchment CSO and resilience through collective action	6 x 5 assignments along with various versions of these assignments	All assignments were written in English	N/A
WhatsApp messages	Olifants catchment CSO and resilience through collective action	A WhatsApp group was established for the Changing Practice network. Participants	English	N/A

		shared what they did during their 'work away sessions' as well as asked questions on this WhatsApp group.		
Facebook	All	A Facebook page was set up for the course. Participants took turns to manage it and post interesting articles, updates on what they were doing and questions.	All languages but mostly English	N/A

First distillation of data: Data in the public domain – research reports, evaluation reports, participants' change project case reports, implementation reports.

Second distillation: Confidential data – two reflexive case histories on the Changing Practice course: South African Water Caucus, with reflections back into the Changing Practice: Eastern Cape course and forwards into the Changing Practice: Olifants course.

Third distillation: Data in the public domain – Collaborative writing projects in the form of one conference paper presentation, one conference poster presentation, research papers and one book chapter.

Final distillation: Data in the public domain **–** Papers arising from PhD work and final PhD portfolio (two papers of which are currently in the public domain).
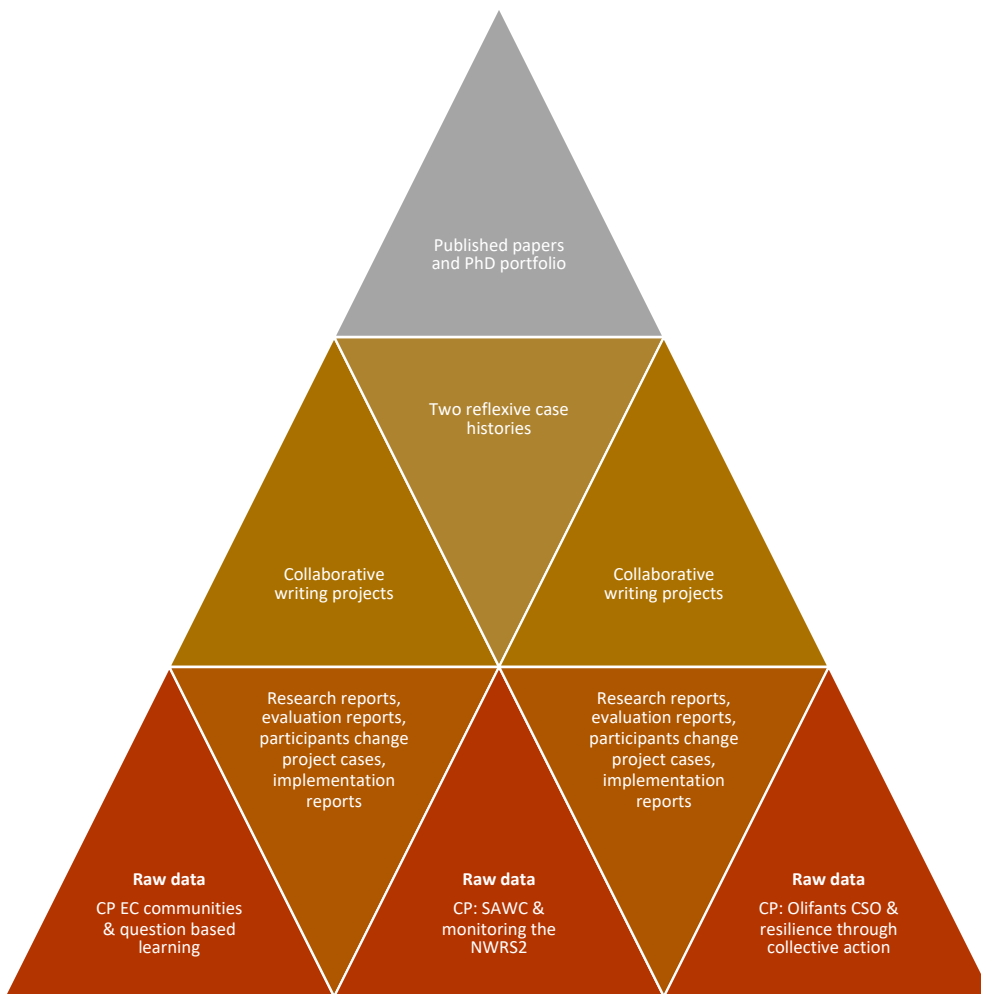
Figure 24: Data and distillation through writing

The figure above represents the distillation process based on the levels of data and distillation. The first and third distillation are in Appendices A, B and C. The final distillation is Part 2 of this portfolio. Below is a table listing the different levels of data and distillation and where these can be accessed.

Table 4: Levels of data and distillation

Distillation level	Documents available	Access
Raw data	- Interviews - Minutes	Confidential. On request from Jane Burt for

	- Reflection notes - Participants assignments - Course materials	examination purposes only.
First Distillation	*i)* *Changing Practice: Eastern Cape Communities & Question-based learning* - Deliverables (access here) - Final research report - Change Project case booklets - Masters & PhD's other than this portfolio	In public domain. Appendix A Appendix B
	ii) *Changing Practice: SAWC & monitoring the NWRS2* - Deliverables (access here) - Final research report - Change Project case booklets	In public domain Appendix A Appendix B
	iii) *Changing Practice: Olifants CSO & resilience through collective action* - Monthly reports - Deliverables - Final research report	In public domain Internal reports to AWARD. On request from Jane Burt for examination purposes only. Internal reports to AWARD. On request from Jane Burt for examination purposes only. Appendix A

	• Change Project case booklets	Appendix B
Second distillation	Two reflexive case histories	Confidential. On request from Jane Burt for examination purposes only.
Third distillation	Collaborative writing projects & blog	In public domain
	Burt, Jane, and Jessica Wilson. 2017. "Changing Practice: A Course to Support Water Activists in South Africa."	Appendix C
	Burt, Jane, and Thabo Lusithi. 2017. "Being the Earth's Comrade: Research for the People, by the People."	Appendix C
	Burt, Jane, Anna James, Shirley Walters, and Astrid von Kotze. In press "Working for Living: Popular Education as/at Work for Social-Ecological Justice."	Appendix C
	Insecurity of Knowing PhD blog	Website (Will be reconstructued once PhD has been examined)
Final distillation	PhD articles & PhD portfolio	This document.

3.8 Narratives, biography, autobiography and learning moments.

In all four research articles I use a narrative style to counter the academic style which often masks the sometimes-messy process of reflexive praxis and the multiple voices out of which new knowledge emerges. The narrative style is also an attempt to lay bare the moments of learning about learning as listening, to critique and reflect and imagine and practice alternatives.

Edmund O. Sullivan (Sullivan, 2016), a Canadian radical educator, speaks of three educational moments: critique, resistance and creation. In naming these as identifiable moments, he is stating that we have a responsibility, when theorizing or practicing educational work within a social movement context, to be aware of the responsibility for rendering visible these distinct yet interwoven functions. "They are not cleanly separated, but rather exist in the world of social movement life in a combined and mixed discourse that may begin with create, return to resistance, then on to critique and back again, in a kind of dance or poetic state." (Hall et al., 2012, xiv).

In article 1, "A peaceful revenge" I draw on four stories from the reflexive case histories, as well as raw data, to explain how the facilitators of the Changing Practice course were engaging with the thoughts of Biko, Freire and Visvanathan. The stories capture moments when 'it is happening' became 'what is happening?' and how the retrodictive application of the ideas of Biko, Freire and Visvanathan resulted in the change from 'how has this come to be?' to 'how can it be transformed?'

In "Entering the mud" I wrote up two learning moments in the form of stories of participants' experiences on the Changing Practice course. The stories were narrated in the third person but from the perspective of the participant to give a sense of immediacy to the learning moments. The learning moments were recreated from interviews, module minutes and reflection notes. We also wanted to center the participants' experiences to highlight how the reflexive practice in transformative learning involves listening to and bringing into focus the participants' experiences. The word 'moment' suggests something which, although immediate, becomes noticed, listened to, shared, not forgotten – something that, once experienced, changes thought, feeling and

action. Von Kotze speaks of moments as being "when participants uncovered the secret of voicelessness and invisibility and developed a clearer sense of individual or collective identity" (von Kotze, 2012, 103). They are moments of political imagination. She also names 'moments of opening' in which 'alternatives appear as real possibilities' (von Kotze, 2012, 110). In Choudry (2012, 143) moments of confrontation are a wealth of research material and signposts for the activist-researcher, as they open up opportunities to see how the world is socially organized. In our case there were moments when, through reflection, we understood the underlying mechanism that needed to be absented to address a contradiction.

In "Research for the people, by the people" I describe and reflect back on the change project case study produced by the Vaal Environmental Justice Alliance (VEJA) and then engage in a conversation with their change project through the transformative leaps of the critical realist dialectic (Bhaskar, 2008b) in relation to three core arguments by VEJA that have transformative capacity. This is similar to "A peaceful revenge" except in this article I trace how VEJA reasoned through 'what is happening?' to 'how has this come to be?' to 'how to transform?' in relation to their change project. I then reflect on how VEJA's transformative work led to transformative capacity within their change project and also within the course itself.

In "Reflections of imperfect educators" I work with autobiographical and biographical accounts of educator-activists, including accounts of my own, to articulate the cognitively-just praxis of environmental transformative learning as activism. I reflect that it is rare to read academic articles that expose the messy and emotional work of what it takes to learn and love as an educator: "the constant internal self-reflection, the work with the shadows of our embodied personalities, and the pain of witnessing and experiencing suffering." (Burt, 2020, 3). I draw on Fanon's argument that oppression cannot be understood only through theory, and that it is an embodied and emotive experience (Dei, 2010).

I prefer the biographical and autobiographical form as it includes the physical, emotional and the intuitive, not just the intellectual. Scott and Bhaskar (2015, 4) write that the biographical method "is an attempt to overcome the divide between structure and agency and in the process to mediate between the structural and the phenomenological. It does this by focusing on the

individual life, lived in terms of social narratives, institutional norms and those relatively enduring institutional, structural and discursive structures that constitute the social." This again centres the participants' experience of violence in a colonized education system, as well as educator-activists' attempts at absenting what enables such educational violence.

3.9 Conclusion

In this chapter I have outlined how my PhD research has drawn on a critical realist ontology and epistemology both to underlabour the design of the Changing Practice course and the solidarity concept of cognitive justice. It has also been used as a theoretical framework for generating explanations for why we need cognitively-just learning praxis, and how we enact cognitively-just learning praxis.

I consider this PhD work to be a research project on reflexive learning design and reflexive facilitation to enable co-learning. Reflexivity is the foundation of the critical realist dialectic. As Bhaskar describes it, "In its most basic form it specifies the capacity of an agent or an institution to monitor and account for its activities" (Bhaskar, quoted in Price 2016a, 34). The reflexive stance of critical realism leads us towards taking an ethical stance as educators and researchers. Researching education as reflexivity is part of this ethical practice. This is not an easy process, as it demands facing up to our own ideologies, blind spots and theory/practice inconsistencies (Price, 2016a). It requires both self-reflexivity and practice reflexivity, both of which are carried out within a collective and as an act of care for the collective. It could also be called a feminizing of research and learning as care work, because it emphasizes relationality, care, vulnerability and responsibility (Maeckelberghe, 2004). It offers a process through which care can be authentically and rigorously engaged in, both in our work as activists and in our work as educator-activists.

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Part 2 : Four scholarly articles

Figure 25: Meeting for mentorship in Emalahleni for the Olifants changing practice course

Introduction

This chapter presents the four scholarly articles of my PhD portfolio. As mentioned in [Chapter 1](#), I view the writing of these articles as a conversation between theory and practice. In the articles I have, wherever possible, used a narrative style as a way to emphasize the embodied nature of the work. Narrative also helps link the way we think about learning to the material realities with which learning approaches are in dialogue.

The option of doing a PhD via publication of articles has for me (as a working practitioner studying part-time) been a route preferable to full time research. It allows me to choose projects that can be explorations of immediate and pressing concerns in my learning practice. It has also, to some extent, allowed me to transcend the isolated and individualized nature of a full time PhD process. It meant I could align the PhD process to be more in tune with the educational approaches that I subscribe to – relational, dialogic, contextual, cultural, and situated materially and historically.

Research with separate articles also gave me the opportunity to engage with younger PhD activist-educators and researchers, and invite them to join in my research as a way to begin exploring their own PhD projects. I found this particularly invigorating. It made my PhD process relevant to a community of PhD scholars and gave a space for seeing patterns in our respective research paths that networked into a broader emancipatory project, which was a great joy. The writing collaborations with younger scholars has led to the start of a small informal practitioner-scholar group which we call the 'fourth leap", which is a reference to the final leap or transition in Bhaskar's transformative dialectic. Bhaskar calls this "a real negation or absenting of contradictions in practice" (Hartwig, 2007, 177). I turned this movement into a question: 'How do we embody transformative praxis?'

Our group (the fourth leap) meets online as we are based in different geographical locations: Bristol, Cape Town, Makhanda and Bulgaria. We read books and articles that inspire us, and talk about what this means for our practice as activist-educators. We are all women, in fact all white women, so we also use this opportunity to explore what this means in our work, how we can

directly engage with the oppressive status of whiteness, how we can transform this within ourselves and so within our practice. Working with the reality of gender-based violence is also central to our dialogues.

We try to understand and practice what it means to be in solidarity with others and the complexity of privilege and pain deriving from the structures we are born into. We align ourselves with absenting the structures that enable whiteness, and those that allow gender-based violence to be a reality that most South African women live with. We believe strongly that these inequalities are preconditions for a violent and uncaring relationship with the earth.

Mapping the four papers against the PhD objectives

The overall question of this PhD project is:

How can cognitively just learning be an activist labour within social movements towards water justice?

My three research objectives respond to Bhaskar's DEA model of moral reasoning: diagnose, explain and act (Bhaskar, 2008b). As explained in Chapter 3 this is not a sequential linear process, but a weaving between diagnosing a problem as contradiction (in theory and practice, thought and action) and then looking for explanations for this contradiction that will lead to learning interventions to absent the contradiction.

If cognitively just learning is to be an activist process, there is also an interweaving required between reality (in terms of space, time and social practices) and the educational process itself. For example, let us say the problem we are dealing with is water polluted by mines. We would then need to learn together how to diagnose, explain and act in order to absent what leads to the pollution. At the same time, we would note the contradictions within our own learning practice that inhibit us from 'learning together' to do the diagnosis, as learning practice contradictions often mirror contradictions in the real-world problem, such as why water pollution exists to begin with. If we only focus on our internal learning practice without engaging in the material world of environmental injustice, we may find ourselves cut off because we have been

creating an abstraction removed from the material world. If we only focus on the material issue without also engaging with the learning experience, we will miss core contradictions that inhibit us from 'learning together' and the relations between us that mirror the oppressive relations in the world. As Bhaskar notes, this requires moving beyond the dualisms to transformative praxis.

In the table below I show how the four articles speak to the three PhD objectives

Table 5: PhD objectives and four scholarly articles

Objective 1: to diagnose and explain the problems facing the environmental and social movements in the context of water justice in South Africa by using the theories that lie behind the concept of cognitive justice	Objective 2: to consider the effect of trying to achieve cognitive justice by critically describing instances where it was the guiding principle of learning interventions in the environmental and social movements associated with water justice in South Africa	Objective 3: to use the explanation obtained in objective 1 and the experiences of objective 2 to identify learning actions that enable knowledge creation and agency
Article one, *A peaceful revenge*, explores how three emancipatory thinkers diagnose and explain contradictions of knowing and learning under conditions of oppression. They also offer theories of how to absent these contradictions.	All four articles consider the effect of trying to achieve cognitive justice and describe instances of how we used it as a guiding principle of our work which enabled us to continually work towards a cognitively just learning.	Articles *two*, *three* and *four* offer learning actions that enable knowledge creation and agency. Article two, *Entering the mud*, explores facilitation and offers a model of facilitation as care work at multiple scales. Article four, *Research for the people, by the people*, reviews the role of the change project and how it can enable transformative capacity both within the change project

Article three, *Imperfect educator-activists*, shows how, through reflexivity and centering the participants' experience of learning, we diagnosed contradictions in our learning practice and explained how these had come to be.

itself and within the course. Article four, *Imperfect educator-activists*, reveals what it takes to work consciously with often buried contradictions in our learning practice. We argue that the starting point for changing learning practice is the participants' actual experience of learning and listening with compassionate rigour.

Table 6: Status of PhD articles

Article	Authors	Status
A peaceful revenge: Achieving structural and agential transformation in a South African context using cognitive justice and emancipatory social learning	Jane Burt, Anna James & Leigh Price	Published in Journal of Critical Realism, 16 December 2018
Entering the mud: Transformative learning and cognitive justice as care work	Jane Burt, Taryn Pereira & Heila Lotz-Sisitka	Submitted to Canadian Journal of Environmental Education, 3rd December 2018. Accepted for publication with changes due on 31st March 2020.
Research for the people, by the people:	Jane Burt	Published in Sustainability on 12 October 2019, a special edition titled "Transgressive Learning and Transformations to Sustainability"

The political practice of cognitive justice and transformative learning in environmental social movements.		105
Imperfect educator-activists: The praxis of cognitively just learning	Jane Burt	Submitted to Critical Studies, Critical methodologies. Editor responded that the article would be better suited for publication in 'The Qualitative Report'. Currently being submitted to Studies in the Education of Adults.

Article 1: A peaceful revenge: achieving structural and agential transformation in a South African context using cognitive justice and emancipatory social learning

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Abstract

This is an account of the emancipatory struggle that faces agents who seek to change the oppressive social structures associated with neo-liberalism. We begin by 'digging amongst the bones' of the calls for resistance that have been declared dead or assimilated/co-opted by neoliberal theorists. This leads us to unearth, then utilize, Paulo Freire's Pedagogy of the Oppressed, Steve Biko's Black Consciousness and Shiv Visvanathan's ideas; which are examples of Roy Bhaskar's transformative dialectic. We argue, using examples, that cognitive justice – a concept common to each of our chosen theorists – is vital in enabling emancipatory social learning. By embracing cognitive justice, the agents gained confidence, which led to their increased ability to champion community and non-academic knowledge. It also uncovered structural tensions – attendant in neoliberalism – around privilege. By articulating these tensions, the participants were able to 'come closer together'. Such processes, initiated by ensuring cognitive justice, are possible steps in achieving universal solidarity; which is likely to be a necessary step along the path of achieving emancipation.

Keywords

Epistemological dialectic; cognitive justice; water governance; civil society; social learning; emancipatory learning

Introduction

This paper tries to answer the question: How do we prepare the ground for a conceptual framing of cognitive justice that can serve the emancipatory struggles of civil society against water injustice in South Africa? The title of this paper is a response to de Sousa Santos's articulation of 'the revenge of dead thoughts'. He describes how, over of the last thirty years, neoliberal thought has gained the appearance of immortality by pronouncing its rival thoughts dead and making this credible for large sectors of the population. For de Souza Santos, ideas such as 'the end of history', 'the death of the state', 'the end of the left/right cleavage' and 'the obsolescence of revolution and the Third World' have allowed neoliberal thought to flag its immortality. However, as he explains, 'The truth is that, as the Greek philosopher Epicharmus once admonished us, "mortals should have mortal, not immortal thoughts". That is perhaps the reason why the last decade has witnessed a kind of revenge of the dead thoughts' (de Sousa Santos, 2006, ix). We therefore borrow the term 'revenge of dead thoughts' to describe the return of the powerful work of transcendental Western thinkers such as Karl Marx, Simone de Beauvoir, and Sigmund Freud, and thinkers influenced by them (Irwin, 2012). In our case, we raid the ossuaries of neoliberal ideology to resurrect the theories of Paulo Freire (2005); Steve Biko (1978); and Shiv Visvanathan (2005).

From a positivist/empiricist perspective, the theories of these great transcendental thinkers deserve to be entombed as irrelevant historical curiosities because they are neither measurable nor subject to experimental justification. From a postmodern perspective, these thinkers provide 'grand theories' that should be assigned to the cata- combs because there is supposedly no 'grand theory' of truth, merely particularized 'truths'. The critical realist perspective, however, sees transcendental theories as trans- factuals: whilst they describe certain relatively universal structures and mechanisms (such as sexism, the workings of the unconscious, or how capitalist economics creates class divisions), these structures are always unfolded in reality in unique ways

due to the unpredictability of the open system of the world. The critical realist perspective keeps the 'critique' of these theories – that they cannot predict circumstances in context – but does not undermine the theories by assuming that they have no ontology and are therefore not about reality. When we acknowledge that reality is layered, we can see that something can exist at one level and be manifest at another level in unique and unpredictable ways (Bhaskar, 1975). Thus, critical realist meta-theory makes re-engagement with these transcendental thinkers possible by providing them with a sturdy ontological base.

In this paper, we first introduce the idea of cognitive justice and how critical realism can underlabour for it by providing it with an ontology that avoids relativism. We then outline the critical realist dialectic – the tools for digging – and describe how each of our three Global South thinkers can be shown to have tacitly followed this dialectic. By retrospectively digging into their work, we also learn from each of them something about cognitive justice, as a key component of emancipatory practice. We follow with a brief description of the state of water resource management in South Africa to provide a context for our work. Finally, we recount four stories developed by activists in the Changing Practice course as an illustration of emancipatory work in practice.

Cognitive justice

A concept that we use in this paper, which perhaps requires further introduction, is that of 'cognitive justice'. This concept questions the dominant paradigm of Humean-based science and argues that we should recognize the value of alternative paradigms or alternative sciences by facilitating and enabling dialogue between, often incommensurable, knowledges. For instance, Visvanathan (1997) explains how the 'cognitive injustice of development programmes' means that they do not 'acknowledge the powerful and inventive knowledge creation of all people within their own contexts' (in Burt & Wilson, 2017, 103). We assume that cognitive justice, with its requirement for dialogue, includes 'social learning' which involves working and learning together on an issue or problem that is collectively shared (Wals, 2007).

However, when cognitive justice or 'social learning' is underpinned by hermeneutics or postmodern meta-theories, it can tend towards relativism (Green, 2013). Relativism undermines agency and the achievement of emancipation because there is no way to arrive at value

judgments about which actions are most likely to be optimal. It leaves activists in an axiological void, lacking in direction. Furthermore, empiricist scientists – who work in a context supposedly devoid of values – tend to ignore the effects of injustice on communities, both human and non-human. However, cognitive justice underlaboured by critical realism avoids relativism through its concept of ontological realism, epistemological relativism and judgmental rationality; it also denies that facts do not lead to values, thus returning to values their scientific credentials (Bhaskar, 2009). In mainstream perceptions of science, the truth is arrived at by determining the strength of correlations. When truth need not be packaged as 'scientific' in the sense of being based in numbers and correlations, that is, when it becomes possible to arrive at truth without first going the route of laboratories and statistical analyses – interpreted by statistical experts with expensive daily consultancy rates – it then becomes possible for the average citizen to contribute to the knowledge-making process. This is not to say that laboratory-based, statistical knowledge is not useful, just that it is neither necessary nor sufficient, especially in a context of environmental injustice. However, what is necessary and sufficient are transcendental theories about the way that things are and how they work – and this kind of knowledge is ubiquitous. We use it in our everyday lives; and it is the basis of indigenous knowledge (Sabai, 2015).

This democratization of the knowledge making process is what critical realism makes possible when it states that constant conjunctions (correlations) are neither necessary nor sufficient for knowledge (Bhaskar, 2009). This means that our criteria for judging something to be truthful changes from whether or not it is statistically generalisable, to whether or not it is the best explanation for the greatest part of reality, compared to competing explanations. This is known as judgemental rationality (Bhaskar, 2009, 24). Just as critical realism allows us to bring back to life the ideas of the great transcendental thinkers; so, it also allows us to return to the transcendental thinking of the average citizen. We need both retroduction and retrodiction for emancipation. The retroductive transcendental thoughts of the emancipatory-inclined 'big picture' thinkers provide the analytical tools for those of us active in particular contexts to retrodictively (but also retroductively – when we arrive at our own theories)[1] better understand what is happening and therefore to better strategize towards our emancipation. Cognitive justice, which insists on putting local, contextual knowledge on the same level as expert or technical or scientific knowledge, is therefore made possible by critical realism. Critical realists

would say that critical realism therefore 'underlabours' for cognitive justice. It is because cognitive justice is a concept that has both developed from, and taken root in, the Global South that we have chosen to engage with the transcendental thinking of Biko, Freire and Visvnanthan (Biko is from South Africa, Freire from Brazil and Visvanathan from India).

The critical realist dialectic: the tools for digging

Bhaskar (2008) provides us with a version of the dialectic that involves several 'transformations' or points of change; moments where absences are absented. These transformations are:

- From 'it is happening' to 'what is happening?' (absent the absence of acknowledgement that there is a problem – things are assumed to be normal)
- . From 'what is happening? to 'how can this be?' (absent the absence of an explanation for the problem)
- . From 'how has this come to be?' to 'how can this be transformed?'(absent the absence of action to address the problem)

We consider each transformation in more detail below and then show how our three Global south thinkers approach them.

1. From 'it is happening' to 'what is happening?

This transformation occurs when we reflect on contradictions in our lives that have become normalized habits (Hartwig, 2007). We begin reading the world differently because something about activities or actions in the world suddenly does not make sense. It is a transformation from 'living everyday life' to 're-looking at life' – an understanding that was not there before. Another way of putting this is that up to now we lived as if 'life is happening'. Now, in the transformative movement, we are asking 'what is happening?'

2. From 'what is happening? to 'how can this be?'

This transformation is the movement of dialectic reasoning in response to the emergence of practice-theory contradictions (Hartwig, 2007). Dialectic reasoning moves towards transforming a situation which is incongruent either due to its inherent contradictions or because of a theory or

ideology which enables these contradictions. The result is the articulation of these contradictions (Hartwig, 2007, 176). It is a movement from 're-looking at life' to 'troubling life' through identifying what is troubling. We move from asking 'what is happening?' to 'how can this be?' through a meta-critique of absences. There are two stages to this meta-critique:

(a) Understandingthegaps/absencesintheideologythatenablethecontradictionsand so opening the way to a truer explanation of what is occurring.

(b) Understanding why the ideology or contradictions are being maintained. This leads to questions as 'who is benefitting?' and what forces keep an obviously problematic ideology from changing.

The transformation process is largely a process of negating. Bhaskar argues that the legacy of philosophy has 'bequeathed the generation of a purely positive, complementing a purely actual notion of reality' (Bhaskar, 2008, 4). This Bhaskar calls the doctrine of ontological monovalence. He argues that negation is essential to the process of change. It is a process of 'mediating, distancing and absenting' (Bhaskar, 2008, 5) and makes the process of science possible.

3. From 'how has this come to be?' to 'how can this be transformed?'

This transformation is the movement of reasoning or rational totality (Hartwig, 2007, 176). It is a creative and generative process in which we speculate on what is required to resolve the identified contradictions. It also results in dialectic comment, but in an expansive form, highlighting what is possible to generate new theory or more complete theory by absenting the absences. It is a transformation from 'troubling life' to 'expanding life', from asking 'how has this come to be?' to 'how can this be transformed?'

Freire, Biko and Visvanathan: digging amongst the bones, a dialectic enquiry

In this section, we unearth the work of Freire, Biko and Visvanathan and consider their influential contribution to our understanding of the best way to approach emancipatory social learning responses.

Freire's dialectical process

1. From 'it is happening' to 'what is happening?

Freire was writing about education during a time when capitalist political economies were spreading aggressively throughout the world (Lange, 2012, 14). Rather than taking this as a given and simply normal, he critiqued it as problematic and he viewed education as a social institution that was actively participating in this invasive neoliberal/neo-colonial wave.

2. From 'what is happening? to 'how can this be?'

Freire's argument is that people's willing cooperation in the spread of capitalist political economies – that is, their co-operation in their own oppression – is the result of the banking education model.[2] Such education is infected by a narrative sickness that attempts to separate out narration – transferral of information – and cognition. This results in a 'teacher student contradiction' because teacher and student roles are polarized. The teacher has the role of narrator; and the student has the role of receiver of information provided by the narration. In these authoritarian conditions learners are alienated from the ability to make sense of what they are taught and apply it to their own realities. They are given knowledge; and it is assumed incorrectly that they do not have a way to develop their own knowledge. Therefore, any knowledge that they think they have is assumed to be inferior to the knowledge obtained from elite learning institutions. Their life experiences are absent from the process of learning. Thus, education can be practiced through authoritarian relations to maintain the status quo because there is a restriction against the opportunity for contradictions to surface, that is, an absence of the ability to challenge the authorized narrative, using the learners' life experiences or their local/indigenous knowledge. Freire's ideas have an ontological premise since we (and our minds) do not relate to a static, separate reality but rather we are involved in the formation of reality; humans and their thinking minds are part of reality. A notion underpinning this dehumanizing education is that, 'a person is merely in the world, not with the world or with others; the individual is spectator, not re-creator' (Freire, 2005, 75). This misrepresentation – which we can also call a contradiction – considers objects of knowledge as static and transferable.

3. From 'how has this come to be?' to 'how can this be transformed?'

Freire argues that we can transform this situation if we see 'knowledge as a process of inquiry' (Freire, 2005, 72). That is, gaining knowledge is a social, interactive process rather than the passive reception and memorizing of information (Freire, 2005, 79). Knowledge cannot be transferred from one person to another without being mediated by the social subjective of the learner. He goes further to say that a situation/act that prevents one engaging in 'the process of inquiry' is a situation/act of violence (Freire, 2005, 85) and thus cognitively unjust.

In light of neoliberal appropriations of Freire, it feels important to add that he was not in favour of engaging knowledge and learner participation vaguely, but argued for thorough problematizations, getting to the root cause of the challenges experienced within contexts together with the people of that context. Coupled with this was the rejection of educators as neutral. Rather they should take a stance – albeit a fallible one that could change in the face of further evidence – and be involved in directing the educational process towards an emancipatory goal. He is quoted by Tejeda, Espinoza, and Gutierrez (2003) as saying: 'I cannot be in favour merely of people, humanity, vague phrases far from the concrete nature of educative practice. Mass hunger and unemployment, side by side with opulence, are not the result of destiny ... .' Freire's praxis which 'absents the absences' within the banking education model leaves us with a more complete explanation of the relationship between education and cognitive justice. It is a model that understands knowledge as something that emerges only through 'invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other' (Freire, 2005, 72).

Biko and non-racial engagement

1. From 'it is happening' to 'what is happening?'

Steve Biko entered the University of Natal, South Africa in 1965 to study medicine in the segregated non-European medical school of this predominantly white University. He soon became active in student politics and a member of the largely white National Union of South African students (NUSAS) (Biko, 1978). It was through his experience of being involved in NUSAS that Biko began to understand that white privilege was embedded into the consciousness of student politics. Just as Freire's critique reveals the teacher- student contradiction, so Biko's

critique reveals the black–white contradiction continually present in South African white liberal institutions.

2. From 'what is happening? to 'how can this be?'

Biko articulates the 'lacks' that lie behind this contradiction. White liberal groups conflated the goal of non-racialism with the means of getting there, and in the process absented the lived experience of black people and their own white privilege. They absented the history of black oppression as well as the history of black leadership and ultimately could not conceive of the possibility of a liberation movement being led by a black imagination and a black leadership (Biko, 1978).

Biko denies the assertion by white liberal groups that apartheid cannot be beaten without the joint efforts of both black and white movements. He argues that this position protects white liberals and their privilege because it ignores the historical positions of white and black people. He describes how the superiority and inferiority complexes that people unconsciously bring to any engagement perpetuate the racial divide rather than crossing it (Biko 1978, 20). He questions whether a slave can sit down with the master and negotiate freedom unless the slave is truly free and the master is no longer a master. History, he says, brings these power imbalances into the room and history will not be ignored.

Biko analyses how 'non-racial' white leaders in the student movement were 'setting the pattern and pace of black aspirations' (Biko, 1978, 21). Furthermore, these white leaders were conflating the black power, to which the black students' aspired with the white power of apartheid – seeing them as identical. It is useful here to link Biko's ideas about power with Bhaskar's ideas, written forty years later. Bhaskar differentiates 'power$_1$' meaning 'power to act' from 'power$_2$' meaning power in the service of maintaining master/slave relations (Burt & Lusithi, 2017, 55). Power$_1$ is an umbrella term that includes power$_2$, but we can have power$_1$ without allowing it to become power$_2$: we can be powerful without using our power to oppress. By seeing power$_1$ and power$_2$ in this way, we avoid either dichotomizing them, or conflating them. Biko is arguing that there can be no power$_1$ if the effects of structural oppression have not been addressed. However, this power$_1$ is not the same as the power$_2$ of white supremacy to dominate and control. Biko writes, '

... one cannot be a racist until one has the power to subjugate [...] What blacks are doing is merely to respond to a situation in which they find themselves the objects of white racism' (Biko, 1978, 25). He also argues that, up to that point, all their attempts to create a non-racial society were still an attempt to convince white people that the black person is 'still a person that should be given a seat at a white table' (Biko, 1978, 22).

3. From 'how has this come to be?' to 'how can this be transformed?'

Biko aimed to develop black consciousness. To achieve his aim, he suggested an approach to praxis that can be described as a humanizing process, in which the objective is to absent the absence of black thought and leadership in the racist structures in South Africa. Biko paints a stark picture of how, when a person is treated as inferior, the idea of inferiority becomes internalized. Thus, like any beaten person, the oppressed soul blames itself for not being equal to its oppressor. The result is that, before any integration can occur, the 'empty shell of black people' (Biko, 1978, 29) needs to be infused with pride. This can be achieved by first, understanding the truth of what a history of oppression has done to a people's soul; second, reclaiming pride in 'who we are' as a people; and, finally, acknowledging how the oppressed are complicit in their own oppression. Biko argued 'A people without a positive history is like a vehicle without an engine' (Biko, 1978, 29). He thus provides a more complete theory of oppression, one that led to the idea that students must claim back their minds as part of their resistance against systemic oppression (Biko, 1978, 22). Biko therefore believed that the consciousness of black people needs to be re-formed and self-perpetuated by black people. It cannot be owned or curated by anyone else. This, Biko argued, is only possible if black people walk away from white-run structures. The task then is to reclaim a black identity, a black consciousness and a black vision of what equality should look like (Biko, 1978).

Visvanathan and a non-violent science

1. From 'it is happening' to 'what is happening?

Epistemological choices made in the name of science have a direct effect on people's lives and their livelihoods. Like Freire and Biko, Visvanathan identifies how apparently positive social processes can lead to unforeseen disasters if enacted within a hegemonic ideology. For

Visvanathan, the social process that he critiques is that of infrastructural development (for Freire it is banking education and for Biko it is white-lead activism against racism). In India, the building of dams led to the generation of electricity, but it also led to over 40 million refugees. India has also designed and implemented 'reforms' related to forest management – the principles of which are delineated in its Forest Act – that threaten the livelihoods of one seventh of India's population (Visvanathan, 2005, 87). This coercion in the name of science was first challenged, not by scientists and universities, but by movements at the grassroots – activists, ecologists and feminists – who saw the direct effects of a 'science war' by colonial science on the lives and the landscapes of people in India (Visvanathan, 2005). Shiv Visvanathan's contribution was to document, analyse and support (an act of solidarity) this grassroots challenge. In so doing, he began to articulate the need for cognitive justice in development contexts.

2. From 'what is happening? to 'how can this be?'

Visvanathan identifies the lacks that lie within science-led development projects that are supposed to lead to improved livelihoods in the Global South. He argues that these are bound to fail if people can only participate in the consumption of the products of science and not in the knowledge creation that leads to the technology to be applied. This is similar to Freire's critique of how the student, in the authoritarian model of education, is excluded from being an active creator of knowledge. Like Biko, he argues that cultural and historical knowledge, which is central to people's livelihoods, identity and survival, can be lost through development projects. All three see the danger when knowledge is seen as static rather than emerging out of lived experience and embedded in social-ecological contexts.

Visvanathan argues that the innovation chain is like a production line where scientific knowledge is produced for mass consumption. He describes how science, technology and society are linked through the chain of invention (the creation of a scientific idea and the visualization of a product), innovation (the upscaling and commercialization of the idea) and development (absorption and mass distribution) (Visvanathan, 2005, 86). Only in the last stage of the process civil society is consulted at all, and only for the intention of distribution. Visvanathan reflects on how India has viewed science and democracy as a saviour with the power to develop communities and drive out superstition. The result has been a disembodied knowledge both at

the level of governance and development practice. When the grassroots movement first began to resist this, they understood how dangerous it would be if the knowledge embedded in the lived experience of people were to be lost. If colonial science were to be adopted as the only way of knowing the world, then not only would local knowledge be lost but so also alternative ways of being in the world and the possibilities of alternative futures.

3. From 'how has this come to be?' to 'how can this be transformed?'

The (ongoing) way in which grassroots movements in India absent the absences of an inherently violent science is to realize that it is not enough to protest against the actions of development projects such as the building of dams or the mismanagement of forests. One also needs to resist the epistemological position that led to these development projects. The grassroots movements therefore resist the hegemony of colonial science by challenging, as did Freire, the opposition of expert and lay person and between science and ethno-science. They then absent the absence of meaningful civil society participation in all the stages of the innovation chain. They also label the science – as it is practiced in India – as a human rights problem (Visvanathan, 2005). They argue that this version of science, Indian government policy and the country's constitution has dis-embedded local and experiential knowledges. It does this by either marginalizing other knowledge systems or appropriating them. Finally, grassroots movements reject the 'scientific' perception of nature as an external object or resource to be used and experimented on. Rather, drawing on Indian cosmologies and the experience of Indian citizens – 70% of which depend directly on nature for their livelihood – they argue that nature is not 'a mode of production but a mode of thought' (Visvanathan, 2005, 89). When a forest is destroyed, the women's Chipko movement argued, it was not only the trees that are destroyed but 'a common body of knowledge about the trees' (Visvanathan, 2005, 89). The forest is a pool of knowledge that 'sustained a way of knowing' (Visvanathan, 2005, 89). This is similar to arguments that South African activists have been making about water, based on traditional African spiritual practices which revere water as a home of the Ancestors. Visvanathan calls for two alternative approaches. The first is to envisage knowledge engagement as a 'parliament of epistemic debates'. The second is to acknowledge that knowledge systems are ecologies that need to be given the space to thrive as 'active practices' (Visvanathan, 2005, 93). In 1989, along with journalists and economists, Visvanathan made a plea to the World Bank to ensure that a human rights team be

attached to every development project, that an audit of each project be provided in the vernacular, that local theories of knowledge be respected alongside scientific knowledge, and that the World Bank offer insurance or security against the damage that could be caused by development projects. Knowing that these pleas would be ignored, he also asked that the World Bank install a wailing wall so 'that we can mourn or grieve together in the aftermath of some projects' (Visvanathan, 2005, 84).

A peaceful revenge: cognitive justice and emancipatory social learning

After visiting these dead thoughts, we now retrodictively apply them – use them to explain – our context, which is that of educators involved in emancipatory social learning to address issues of equitability around water management and access in South Africa. We also describe how we followed the already outlined dialectic through the medium of what have come to be termed the 'changing practice courses' and their direct-action projects.

The context of the 'changing practice courses'

The threat to the water resources of South African is growing for several reasons. First, there is a move to recentralize the decision-making process which will undo much of the legislation that protects the water rights of South Africa Citizens (South African Water Caucus, 2017). The legislative changes are also motivated by the Government's intention to follow 'global trends for economic efficiency and cost recovery' (Bond, 2005; Burt & Lusithi, 2017; Burt & Wilson, 2017, 3). Second, the legacy of the old apartheid divisions is still visible in terms of unequal access to water (Environmental Monitoring Group, 2017). Third, water is polluted by corporations and municipalities without them being held accountable (Centre for Environmental Rights, 2016). The Changing Practice cases, deepened through the Changing practice course which draws on an emancipatory social learning approach, are therefore a response to the threats to the water. The cases we draw on for this paper were initiated by members of the South African Water Caucus (SAWC), a network of NGOs and CBOs active in the water sector, and the Olifants civil society organization network (Wilson et al., forthcoming). These cases are 'grounded in local realities, contribute to a deeper understanding of key ecological, participatory, social justice and spiritual

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aspects of water governance' (Burt & Wilson, 2017, 2). As an attempt to achieve community participation in water governance, the Changing Practice cases have been described as 'an in-situ experiment to see what role civil society plays ... in building participatory democracy in the water sector' (Burt & Wilson, 2017, 1).

'It is happening', to 'what is happening', to 'how has this come to be', to 'how can it be transformed'

In the four stories that follow, we explain how engaging with the 'dead thoughts' of Biko, Freire and Visvanathan guided our facilitation of the changing practice course, to support the activists development of the Changing Practice cases. These stories describe instances where 'it is happening' became 'what is happening' and how the retrodictive application of the ideas of Biko, Freire and Visvanathan resulted in explanations of 'how has this come to be' leading to 'how can it be transformed'. The stories are found under the headings: 'Valuing community knowledge', 'Speaking about past oppressions'; 'We are all co-activists'; and 'Gender troubles'.

Valuing local and community knowledge

In the changing practice course, the starting point is always honouring participants' own knowledge of their context and practice. This 'honouring' often unearths experiences of how activists knowledge has previously not been acknowledged. Samson Mokoena from the Vaal Environmental Justice Alliance explains how this affected him and his community:

We have lost our confidence because our ways of knowing have had to take to the dark. We want to bring them into the open again. (Burt & Lusithi, 2017, 112)

These lived experiences can become the point around which we engage with each other. Thabo Lusithi & James (in Burt & Lusithi, 2017) documented several instances of the way that spaces for participation and engagement are being closed down in their community in demeaning ways. This sparked a deep discussion about how this is happening in other communities and what mechanisms are being used to limit community participation. Thabo reflects on his experience:

We went to Du Noon to learn more about water issues, but we learned more about mobilisation and the importance of solidarity. When spaces[3] were closed it sparked other communities in

other areas to share their own stories and how they dealt with the closing down of spaces without resorting to violence. This shared space helped the Du Noon community to share deeply about how things are in their community and to feel supported. (Burt & Lusithi, 2017, 111)

This deep questioning would not have surfaced without placing the experiences of the participants and their communities at the starting point of the learning engagement. Governance in South Africa is supposed to make space for the consultation and participation of communities, particularly those that have been disadvantaged due to apartheid. Thabo and Manelisi revealed how the theory and policies of how participation is supposed to take place is flawed in practice. Their research, through the changing practice course, revealed a significant contradiction between policies and laws around community engagement and what is actually happening on the ground. Together with their networks, they recreated this situation as an opportunity to build solidarity and build relationships with other communities experiencing similar issues of local political control (Burt & Lusithi, 2017). This is therefore an example of how the dialectic in which 'it is happening' (things are normal), moves to 'what is happening' (the people's knowledge and participation is not being taken seriously), to 'how has this come to be' (people are not collaborating), to 'how can it be transformed' (people need to come together to build relationships and to act collectively to challenge the status quo). Notice that having the people's knowledge taken seriously was not in this case dependent on outsiders taking it seriously. Rather it was dependent on the people themselves collaborating and independently sharing their knowledge. It could be said that the solution was to remove the obstacles to the already existing truth; which is that the people's knowledge is already valuable, already shareable, and already able to be valued. Although it would be ideal to have community knowledge universally valued, there is no need to wait for this; we can advance our community knowledge with or without mainstream support if we are ourselves confident of its truthfulness. To not do so, is to believe the deception that community knowledge has no value; and, as Biko pointed out is often the case, to be complicit in our oppression. Bhaskar's democratic version of what counts as science furthers the argument that different knowledge systems are valuable. This conversation with Bhaskar's version of science can return pride to knowledge systems that have been oppressed and argue that professional institutions of knowledge production should acknowledge the value and necessity of multiple knowledges without belittling or appropriating this knowledge.

Speaking about past oppressions

Retrodictive engagement with the dead thoughts of Biko, Freire and Visvanathan led us to answer the question 'how can this be happening' with the idea that one of the mechanisms by which the status quo is maintained – because it veils the role of the oppressor – is a social 'rule' that the history of oppression should not be discussed. We therefore purposively facilitated the absenting of the loss of histories through a process of reclaiming, with pride, a past that has been seen as irrelevant or described as negative history. As we have pointed out with reference to Biko, the history of indigenous cultures is classified by the Global North as predating 'development' or 'civilization' and so irrelevant. Educational practitioners therefore need to enable people to articulate and narrate histories that have been silenced. An example is the history of a people being forcibly removed, not only by apartheid but also to make space for commercial forests plantations, as documented by one Changing Practice course participant in the case 'Saving Moholoholo' (Moholoholo is the traditional name for a mountain which is now covered with commercial plantations) (Ndhlovu et al., 2016). In this case the activists reclaim this history of forced removal that has been silenced and also tells their history of the chiefdoms that used to live at the foothills of the mountains. Educators and participants also need to resist histories curated by colonialism which 'obliterate the experiences of the oppressed and label knowledges as primitive or 'museumized' (Visvanathan, 2005, 90). This includes being open and honest about their own histories especially if, like the authors of this paper, their history differs from the majority of the participants and they were born into a certain degree of privilege. The history and stories of how white people in South Africa perpetuated oppression are generally known but not personally articulated. The shame of what has been and continues to be done in the name of the white race is often silent and the personal stories of how whites have benefitted is rarely admitted, even in whispers. It is only when the violence and abuse is openly spoken about and admitted that it can be properly condemned, and reparation made. It is only then that trust can begin to be rebuilt to allow all peoples from all backgrounds to work together in solidarity. This leads us to the next story.

We are all co-activists

Biko, Freire and Visvanathan show us the need for a process that acknowledges the psychological damage of oppression. Biko clearly envisaged how oppressed people can only consider dialogue with the oppressor once this inner rediscovery has occurred. For those of us in educational work, this means that we cannot turn away from the wounds of oppression as they arise, because these wounds are etched on the landscape and histories of our social lives. Here is our version of one discussion that came about as the result of this particular approach to cognitive justice:

During a check-in some participants expressed a feeling that they had been treated unequally. Together we designed a dialogue circle where we all participated equally. Some participants expressed their anger at their current situation. This was the second last session of the Changing Practice course. Everyone had worked very hard on their cases and yet times were tough. They could not help feeling angry that they were still unemployed, still struggling to make ends meet and yet they were the ones fighting the battles against environmental injustice in their communities. Jane expressed her sadness that the course could not address all these wrongs and admitted that she felt ashamed and deeply saddened about this situation, especially as the activists' work was not being valued economically. She and the other course facilitators expressed the injustice that they felt about how their facilitation work was remunerated, yet the course had been unable to shift the economic situation of the volunteer participants to the point where their important, and often dangerous work could also be paid for.

She did not know what to do about such inequality. Others also expressed feelings of pain and struggle at how this lack of value extended to how the participants had been excluded by the Government from recent consultations about the new South African mining charter and how the Minister of Mineral Resources had told one of them to 'go and get an education before I listen to you'. The dialogue circle brought us all closer together as the big gaps of inequality – created by the historical oppression of apartheid and the ongoing inequalities perpetuated by our political and economic system – became visible/no longer hidden, through being talked about. These gaps were now present in the room and became woven into our conversations as we moved forward.

What is remarkable about this dialogue is that it was an honest exchange between the historically black oppressed and the historically white oppressor; also, between the educated middle-class

bourgeois and the less educated (through no fault of their own) working class. Nevertheless, it may seem that the exchange was unsatisfactory because 'what is happening' and 'how it has come to be' did not lead immediately action. However, it demonstrated the absence of power for the facilitators, one of whom is Jane, an author of this paper (the narrative being provided here by Leigh). Jane also did not want things to be this way; but she did not know how to change it alone. What had occurred was that 'what is happening' was identified as not only involving a simple dichotomous master-slave relationship – epitomized by the struggle of the volunteer participants in contrast to the paid organizers – but that the masters (in this case, Jane) were in fact also slaves, or as Bhaskar (2008b, 366) puts it, the situation also involves 'the slaves of masters who are themselves masters of slaves'. The realization that both sides are in fact facing the same oppressor – that Jane and the facilitators also felt powerless and were also emotionally moved by the powerless experiences of the participants – was an 'aha' moment. The fact that, after this engagement, the atmosphere seemed to lighten and 'we moved forward' with participants wanting to work with new rigour on their cases, can perhaps be explained by a significant shift in which both the participants and the course presenters felt themselves to be better aligned politically, despite their different social positions. The participants felt that they had been heard, and that their suffering had been acknowledged. However, simply being 'heard' – if nothing then changes – is gratuitous. Nevertheless, in this case it seems that something did change, specifically, the $power_1$ of all involved was increased due to the increased ability to collaborate and an understanding by the participants that the facilitators were indeed in solidarity with their suffering and had begun to work towards changing it even if they did not as yet fully know how. Such $power_1$-infused collaboration between 'the slaves' and 'the slaves of masters who are themselves masters of slaves' poses a significant threat to the agents/structures that create master-slave relationships. This is a clear example of 'it is happening' (things are normalized, there are no problems in this context of community action around water issues) becoming 'what is happening' (people are oppressed in this context, a fact bravely pointed out by the participants, facilitated by the course commitment to cognitive justice) and then 'how has this come to be?' (the middle-class 'oppressors' leading the sessions are also slaves of the masters). This suggests the question of who the ultimate 'masters' are, who seemingly exist higher up the chain of command, but it seems possible that 'they' may be certain structures and mechanisms, which human beings reproduce through their daily actions. However, this question

was not addressed. Rather, 'moving forward' ('how can it be transformed?') meant solidarity – 'moving closer together' – to address immediate structural questions as a unit, in which all the participants, paid and volunteer, were co-activists.

This is also an example of the problem that has beset Marxism from its inception, namely the role of the intelligentsia. In this case in South Africa, we have the (often white) educated facilitators from bourgeois backgrounds working with the (usually black) proletariat – note that issues of class intersect with race, as the comment 'get yourself and education' indicates. Marx did not comment on the role of the intellectual in the process of emancipation, arguably because he was aware of the contradiction that he was a privileged academic fighting for the oppressed classes (Blackledge, 2007). However, Bhaskar seems to have provided a way to overcome the impasse, both through his approach to science that allows local, indigenous and non-technical knowledge derived from communities to be taken seriously (which significantly reduces the class-related distance between academics and non-academics) and through his idea of 'the axiom or principle of universal solidarity, which specifies that in principle any human being can empathize with and come to understand any other human being' (Bhaskar, 2016, 73). This case study reflects one group's attempt to achieve universal solidarity.[4]

'Moving closer together', of which solidarity is a pre-requisite, is possibly one of the most powerful things that we can do to begin to change the world for the better; because, on our own, we have relatively little power. Within this context – in which the slaves of the masters who are also masters of slaves have become turn-coats, no longer serving the masters – an important process of healing has begun. 'What is happening' has become 'how can this be happening', which has become 'how can it be transformed'. In our case, one of the things that could be done was that those playing the masters' roles could reject those said roles and in so doing free themselves (as they are also slaves) as well as those that they are oppressing. Another thing that could be done is the development of allegiance between all the 'slaves' whether higher or lower in the current social hierarchy. In other words, it seems possible that one of the mechanisms by which the 'masters' manage to enslave is by setting the different categories of slaves against each other, yet all the different slaves have the same ultimate desire for freedom.

Note also that, although the use of the terms 'masters and slaves' may usually be associated with dichotomous thinking, in this case the dichotomies have been broken down (slaves are masters and slaves) and we have not identified any particular person or group as the ultimate 'master', indeed it seems possible that what enslaves us are the structures and mechanisms of society, which are reproduced collectively. It may be structures that enslave us all and that it is our agency that perpetuates these structures rather than transforming them. Therefore, we face the possibility suggested by Biko that we are ourselves, at least in part, complicit in our oppression. What we, as facilitators, learnt from the participants of the Changing Practice course is how vital it is to listen and to participate with our whole being, to avoid being complicit with the oppressive structures. One can only listen 'with one's whole being' if one has to some extent silenced one's ego. One of the roles of the ego is to 'protect' the self by denying difficult truths – when given reign, ego results in the opposite of listening with one's whole being, as it manifests in splits within ones being – which leads to compromise formations (Lapsley & Stey, 2011). Bhaskar (2008) referred to the way that compromise formation keeps ideology in place through his concept of 'There-Is-No-Alternative' (TINA) compromise formations, which are a key component of his dialectic. When we embarked on the Changing Practice

course and committed ourselves to cognitive justice, we did not expect to learn how the process of the course and the focus on cognitive justice would enable trust to develop between all of the involved parties. This trust allowed the participants to point out how structural inequalities were manifesting in the course itself.

A key aspect to this process of developing power$_1$ includes broaching issues which are psychological in nature, for instance forgiveness and honest acceptance of accountability. In terms of forgiveness, the participants could have dismissed Jane's embarrassment and admission of pain and struggle as inadequate, simply 'poor rich person' syndrome, or white guilt. In terms of honest acceptance of accountability, Jane could have denied the participants' truth with a counter to their accusation, for instance, she could have said that the participants had indeed benefitted from the workshops (e.g. through developing skills). We have here an example of people being willing to be remorseful, accept accountability and be willing to learn in the face of accusations; and other people being willing to offer forgiveness. Both positions require a certain largeness of character and an absence of ego – 'that your flourishing and development becomes

as important to me as my own' (Bhaskar, 2016, 164). It is this lack of ego that may well be a precondition for achieving emancipation. Without it, in this case, there would have been no 'moving closer together'.

It is important to stress here that 'moving closer together' can be an impossibility: not in the sense that it is not theoretically possible but in the practical sense that we have not yet understood the conditions that absent the systemic violence entrenched within neoliberalism, patriarchy and neo-colonization. Without depth knowledge of ourselves and structural oppression, it is possible to continue to inadvertently reproduce, for instance, racism, despite the best of intentions; indeed, until the personal psychological work and depth explanation has been done, it simply may not be possible. It is also worth noting that this 'coming closer together' is not something that a privileged person can insist on, manufacture or control for a person who belongs to an oppressed class. As Biko argues, a first step in solidarity is for whites to dismantle white racism; they cannot emancipate black people by defining their emancipation (Biko, 1978. 'Coming closer together' is acknowledging this and working in solidarity with groups as we find our freedoms that will hopefully bring us closer together. In the case of white, middle class South Africans this means dismantling white privilege and racism within ourselves and working to dismantle its structural manifestations that keep us entrenched and complicit. We are still learning how to do this. It is a path that requires commitment, empathy and vulnerability.

Gender troubles

However, in order to achieve the solidarity necessary to fully co-operate and thus to increase their power 1, healing is not only necessary between the classes and the races, but between the genders too. For example, on one occasion, when Jane was facilitating the 'gender dialogues', the words of anger and disagreement between the men and women became overwhelming. Jane felt that the process was spiralling out of control and the angry responses of the participants triggered her own feelings as a survivor of sexual violence. She realized that words may not be the best way to deal with these issues, and drawing from her experience working with Freirean-inspired 'Theatre of the Oppressed' (Boal, 2000), she asked if the group would consider trying an approach in which they 'stop speaking and express with our bodies, in frozen images without words, what we were feeling and saying'.[5] They agreed to the idea and Jane started by curling up

on the floor in a ball and beginning to cry. Each person then followed with an image: some angry, some pained, some hopeful. According to Jane:

What was apparent was that we shared these feelings. We knew them regardless of whether we were man or woman, black or white. December, another facilitator, reflected on how he thought this session would tear the group apart but, instead, it drew the group together. The next day, during our morning reflections, we each brought an object from the garden as a symbol of what we give to the group. We could all feel and express the tender love and appreciation we were feeling for each other. The act of symbolic gift-giving (see Figure 7) became a gentle ritual of moving closer together.

Figure 26: Symbolic gift giving

It also gave the facilitators courage to continue exploring gender. In the following module, based on what we had learnt from the first module, we deepened the conversation by exploring, through image theatre and dialogue, how society wants us to be as a man/woman and whether this is how we want to be.

Again, we see the process of 'it is happening' becoming 'what is happening' and leading to 'how can it be transformed'. The surface equanimity and peacefulness of the relationship between the genders (it is happening) came to be seen as belying the underlying gender tensions (what is happening). Using her knowledge of the Freirean-inspired work of Augusto Boal, Jane realized that this was a situation that required emotional and empathetic, rather than intellectual and logical intervention. As facilitators, we also realized that we needed to deepen the conversation

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by understanding our personal and deeply emotional reactions in the context of social norms, leading to personal/agential transformation and synchronous structural change (how can it be transformed). In the words of Bhaskar et al. (2018), 'There are some other implications of the critical realist ontology as it relates to agency. One of these is that, due to holistic causality, and the deep interconnectedness of all being, a change in one part of the world is a fortiori a change in the other'. Therefore, in changing ourselves, as agents, we also synchronically change the structures. Whilst we cannot assume that the men and women in this process are now completely healed, it does seem that some kind of healing took place, and that this was enabled by creating a non-threatening space for empathy. One participant reported that these gender dialogues were the most powerful experience of the course for him. He was close to tears when he realized that the way he verbalized his view of women was hurtful to them. At the final session, he spoke openly about how the gender dialogues had changed the way that he related to his partner. The use of theatre-training techniques, specifically the using of people's bodies to interpret their feelings as 'images', allowed the individuals to better understand each other and thus to achieve a 'coming together'. Again, this is an example of the Axiom of Universal Solidarity – in this case men and women, despite seemingly vast differences, were able to understand each other but it is interesting to note that such solidarity was achieved not with words, but through a different form of communication via body-language.

Conclusion

Emboldened by Bhaskar's ontology and his approach to the dialectic, in this paper we have resurrected the ossified ideas of three thinkers from different parts of the globe – Biko, Freire and Visvanathan – to retrodictively re-describe what was going on in our context of water activism, leading to transformed actions. Biko provides us with a link between racism and its manifestation in the psychology of the self – insisting that if change toward non-racialism is to be real, it needs to be from a position of black consciousness because only this would address the root cause of white supremacy. Freire articulates the relationship between processes of education and the treatment of knowledge. He explains how educational actions and their assumptions about knowledge serve to separate: people from each other and from the world; and people from the production of knowledge and practice. Visvanathan shows how social movements can reveal the limitations of the politics within science for realizing socio-ecological

justice. He emphasizes that knowledges outside positivist knowledge must be nurtured if we are to make an economy of well-being with the earth. All three thinkers are advocates of cognitive justice, for which critical realism underlabours by providing an ontology; and all of them tacitly make use of Bhaskar's dialectic. This dialectic moves from 'what is happening?' to 'what can be transformed?' As an integrative version of praxis – relevant to both theory and practice – it offers a way to approach emancipatory action, as well as research and education. It allows us to better understand what is absent and what needs to be absent if we are to respond to complex issues as an act of solidarity with each other and the earth.

Each of our chosen three authors rejects the devaluation of participants' voices and the absence of an engagement with their and our lived experience. This is the foundation for cognitive justice as an educational response and as a resistance to hegemony. What this means for educational responses is that the social learning process that works within a frame of cognitive justice becomes a collaborative, critical and ontologically scaled (depth) investigation into how the issues experienced have come to be. Through educational processes we meet the violent aspects of development that participants in the educational process experience directly. Their critique of 'development' is not because they are anti-science, as suggested by Green (2013), but rather because they challenge the questionable politics of the chain of scientific knowledge, which results in inequalities in the application of technological products, and the unquestioning consumption of the natural world for profit.

Through this lens we have been able to re-look at our educational work. We conclude that it is important to: honour people's lived experience, knowledge and practice by placing these at the centre of the learning process; acknowledge the psychological damage of oppression; reimagine the process and purpose of education in the context of South Africa and South African social movements; resist anti-science by engaging with a reimagined science based on retroduction as a creative process of knowing our world; curate learning spaces together; and become educator-activists in solidarity with other activists in communities, by carefully and continually questioning how we situate ourselves in relation to a movement towards environmental and social justice.

Freire, Biko and Visvanathan call for more than a participatory and educational process that brings together a group of diverse people to share knowledge. They also ask us to create a space

that must be engaged through acknowledgement of our histories and that leads to meaningful action. They ask us to grapple with the relationship between the personal and the structural. Such a space enables us to openly acknowledge and work with the contradiction that many of us – possibly everyone reading this article – are (now) privileged people engaged in an activist struggle that involves teaching and engaging with comrades who are systematically deprived of dignity, including the dignity of having their voice taken seriously. It is from this point of critical interpersonal acknowledgement that we might effectively struggle against the broader structures.

Our paper demonstrates that we academics are primarily 'allowed' our voice on condition that we limit ourselves to Humean generalizations and non-generalisable case studies. We turncoat academics refuse to remain faithful to this version of epistemology, which serves the ideology of oppression (Bhaskar, 2009, 224–308). Therefore, we embrace both transcendental community knowledge and the transcendental ideas of our great emancipatory thinkers such as Biko, Freire and Visvanathan. Furthermore, as Thabo Lusithi[6] discovered, in the first story provided above, it is often not our access to knowledge that limits our emancipatory action. In fact, our communities already have valuable knowledge. They therefore do not need permission to speak, and like the turncoat academics, this right to speak is implicit in our refusal to accept the deceit that the only valuable knowledge is Humean-based scientific knowledge. Rather than a lack of knowledge, what more often limits our emancipatory action are the factors that prevent us from 'coming closer together'. To achieve this increase in transformative power[1], a possible pre-condition may be healing at both the individual and collective levels of society, which suggests that we should not underestimate the need to deal with past traumas and psychology.

Postscript: The absence of women's voices

Of the three thinkers whose ideas are presented in this paper, none are female. As com- mitted feminists, this is not due to our oversight but rather due to structural sexism. For instance, despite the significant role played by women in agriculture, leading to the fact 70% of the world's food is grown by women (Shiva, 1988; Cock, 2018) and despite women's leadership in emancipatory action, such as the Chipko environmental movement in India (Visvanathan, 2005;

Mgxashe & Doughan, 2018); their writings are rarely on university reading lists unless they are for feminist courses.

We also note that two thinkers who are analysed here, namely Biko and Freire, have been heavily critiqued by feminists (Jackson, 1997; Gqola, 2001; Weiler, 2002; Magaziner, 2011) although they have also been recovered and re-discovered by these movements. For example, bell hooks (1994, 50) writes of Freire's sexism as follows: 'I came to Freire thirsty, dying of thirst (in that way that the colonized, marginalized subject who is still unsure of how to break the hold of the status quo, who longs for change, is needy, is thirsty) ... Because you are thirsty you are not too proud to extract the dirt and be nourished by the water.' This feminist critique touches us deeply given that we are female educators and activists who have been inspired by Freire. We also note the passionate way that bell hooks writes and how this impassioned, emotive voice is frequently silenced within us. Through the process of writing this paper we have begun to critically engage in how women's voices are either silenced in intellectual circles or significantly subdued; not only is this discriminatory, it also results in the loss of the unique skills and ways of being that women bring to our quest to protect our water. What these unique ways of being might be is a question that we hope to answer in a future article.

Notes

1. Retrodiction is the use of established theory to explain what must have been for things to be as they are perceived to be. Retrodiction is the creative positing of a theory of plausible mechanisms that explains why reality is the way that it is perceived to be. Retrodiction is always fallible as there is always the possibility that new information will arise that will require us to change our theory.

2. Freire used the metaphor of banking to emphasise how mainstream education views the learner as a passive recipient of deposits of information from the expert.

3. 'Spaces' refer to formal and informal community-based meetings where civil society is encouraged to engage in governance. 'Closed down' means that these spaces are either no longer available for civil society participation or that they have been appropriated by local political factions or are controlled by the economic elite as is the case with

catchment management forums. These forums are often dominated by large scale water users such as industry or large-scale agriculture.

4. We hope one day to write a paper that discusses these issues in more detail.

5. Jane Burt has worked extensively in development contexts with the work of Augusto Boal's (2000) 'Theatre of the Oppressed'.

6. Thabo Lusithi was a participant on one of the Changing Practice courses, who then became a facilitator of the course.

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Article 2: Entering the mud: Transformative learning and cognitive justice as care work

Jane Burt, Taryn Pereira and Heila Lotz-Sisitka [1]

Abstract

This paper describes the inner workings of the Changing Practice course for water activists, and our reflexive facilitation practice via two learning moments presented in narrative style (Bennett, 2015; Hamdan, 2009; Houston, 2015; Quaye, 2007) [3]. We describe how these two learning moments led to significant changes towards a more cognitively just learning process. By unearthing profound contradictions at multiple levels, we arrived at co-learning as cognitive justice and care work, allowing us to embody contradictions and integrate towards a different way of being in relation to our inner selves, towards one another, and to the environment as a whole.

Cognitive justice and environmental learning

Figure 27: In the mud

We had to enter the mud together and only once we were all fully covered, could a teacher stand up. Paulo Freire[2]

The photographs illustrating this article are taken by Tim Hopwood, an artist in Port Elizabeth, South Africa, who has a sensitive eye for how spaces change, move and decay and so teach us about our past and our history. These photographs are of the Eastern Cape dancer, Siya Mbambaza, moving from a womb like pose close to the earth to dancing on the earth. The mud he dances on is dry and cracked which also depicts the fragility of water security in South Africa.

And yet even in a mud that is dry and cracked we can be willing to embed ourselves, to listen and move towards each other in solidarity with the earth. We describe how we attempted to facilitate a process of 'moving closer together' in this article.

This is particularly important as water activists in South Africa face increased levels of intimidation as they deal with complex injustices that affect their community and their livelihoods. These include the mismanagement of water by government (Centre of Environmental Rights, 2011; South African Water Caucus, 2017), unregulated industrial pollution particularly from mines (Centre for Environmental Rights, 2016; Hallowes & Munnik, 2016, 2017), and the repercussions of neoliberal policies adopted during apartheid and after, which ignored the social and financial costs of environmental destruction (Bond, 2005; Bond & Mottiar, 2013).

We designed the Changing Practice course to offer a different approach to traditional training models. We wanted to support water activists to be able to monitor and respond to water injustice. A key concept that has challenged and re-visioned our work has been cognitive justice, and this is where we would like to begin.

Visvanathan was the first thinker to introduce the cognitive justice concept. He argues that citizens are not only consumers of knowledge but also generators of knowledge (Visvanathan, 2005, 2006). He criticises the view of knowledge which proclaims that science can provide a definitive understanding of the world. He argues that this reduces people and whole countries to consumers of knowledge and ignores the inherent creative and generative knowledge creation that is held within cultures, landscapes, and lived experience (Visvanathan, 2005).

Miranda Fricker's (Fricker, 2007) work distinguishes cognitive justice (coming to your own knowledge) and epistemic justice (having your way of knowing recognised). She maintains we also need 'hermeneutic justice' -- the justice of being heard, of claiming a space for others to listen and respond to one's voice, experience and story.

De Sousa Santos considers cognitive justice to be a reclaiming of our right to a critical utopian vision, to the potential of a different world (de Sousa Santos, 2006). He explains that

neoliberalism has captured time and space in a "conservative utopia" where the 'total fulfilment or application of this ideology cancels out all other possible utopias" (de Sousa Santos, 2006, 12). The (intended) result is that there is no other way to think. Especially in the context of neoliberalism, which Marxist scholar David Harvey (Harvey, 2007) describes as a political project embarked upon to boost capitalism above all else.

Bhaskar (2016) articulates a 'concrete utopia' and argues that the possibility of something new is essential for science and for social life. This is because, "when we assume that something is wrong with the world, we also assume that something else is possible. Concrete utopianism differentiates those possibilities that are real from those that are not. 'Real' here means 'realisable' and it applies to those possibilities that may be reliably actualised given particular constraints (Bhaskar et al., 2018, 43).

From the literature we can summarise the three most important aspects of cognitive justice for our work as:

1. Cognitive justice means having your own knowledge recognised, as well as listening and responding to the knowledge of others (Fricker, 2007).
2. Cognitive justice enables communities to problem-solve and rejects a production chain of knowledge that excludes whole sectors of populations as knowledge creators (Visvanathan, 2005, 2006).
3. Cognitive justice rejects a hegemonic vision of the future and embraces the possibility of an ethical and inclusive future as essential for knowing and being in the world (Bhaskar et al., 2018; de Sousa Santos, 2006).

We now move on to describe the Changing Practice course and how it has evolved to include cognitive justice in both its theory and its practice.

The Changing Practice course: What is it and how it works

Figure 28: We are forging this even though we can't see where we're going

> Social learning is like a mountain pass through all these very difficult obstacles. On every level; through the challenge of trying to understand what social learning is, through the challenge of trying to make a difference when we feel so tiny compared to the hugeness of the problem. We are forging this even though we can't see where we're going. It feels like we are in quite a narrow space together. We are forging this path. – Changing Practice participant, February 2016 (cited in Burt et al.,2016, 3).

Changing Practice courses are facilitated and designed as 'learning together, learning away experiences' around a core 'change project' which an individual or organisation brings to the course – something they are doing or are considering doing in their daily work practice, structured around four course assignments that are linked via a collective engagement around a

local matter of concern. The assignments are done individually but within a collective (local environmental justice organisation), and in the final assignment the collective work is collated into a booklet on the Change Project, to share more widely (See Figure 10). Through engagement with the change project, shared generative themes (Freire, 2005) emerge which become grounding for the emergent and iteratively developed curriculum of the Changing Practice course. "Generative themes arise at the point where participants lives intersect with the structures of society at a local and global level thus linking their personal experiences to political, scientific, aesthetic and literary concerns." (Kincholoe, 2008, 11). This critical pedagogy shifts the power dynamics between facilitator and participant and gives the participants the right to "direct the flow of inquiry on their own terms" (Kincholoe, 2008, 12). Thus the participants in effect shape their own curriculum around their emerging change projects, with the supportive co-engagement of the course facilitators, mediated by the course materials and process framework, which provides a supportive social learning pathway

This paper draws on three iterations of the Changing Practice course as documented below in Table 1, and Figure 10 below shows the course design.

Table 7: Three iterations of the Changing Practice course involving community-based water activists

Name of Changing Practice course	Area	Number of participants	Number of change projects	Implementing organisation	Funder	Duration of project
Community practitioners and mediating water knowledge	Eastern Cape	7	7 individual change projects	Environmental Learning Research Centre	Water Research Commission	2011-2014
South African Water Caucus & monitoring the National Water Resource Strategy 2	South Africa	10	3 organisational change projects	Environmental Monitoring Group	Water Research Commission	2014 - 2016

Olifants Catchment CSO's and resilience through collective action	Olifants catchment	17	7 organisational change projects	Environmental Monitoring Group	Association of Water and Rural Development via USAID	2017-2018
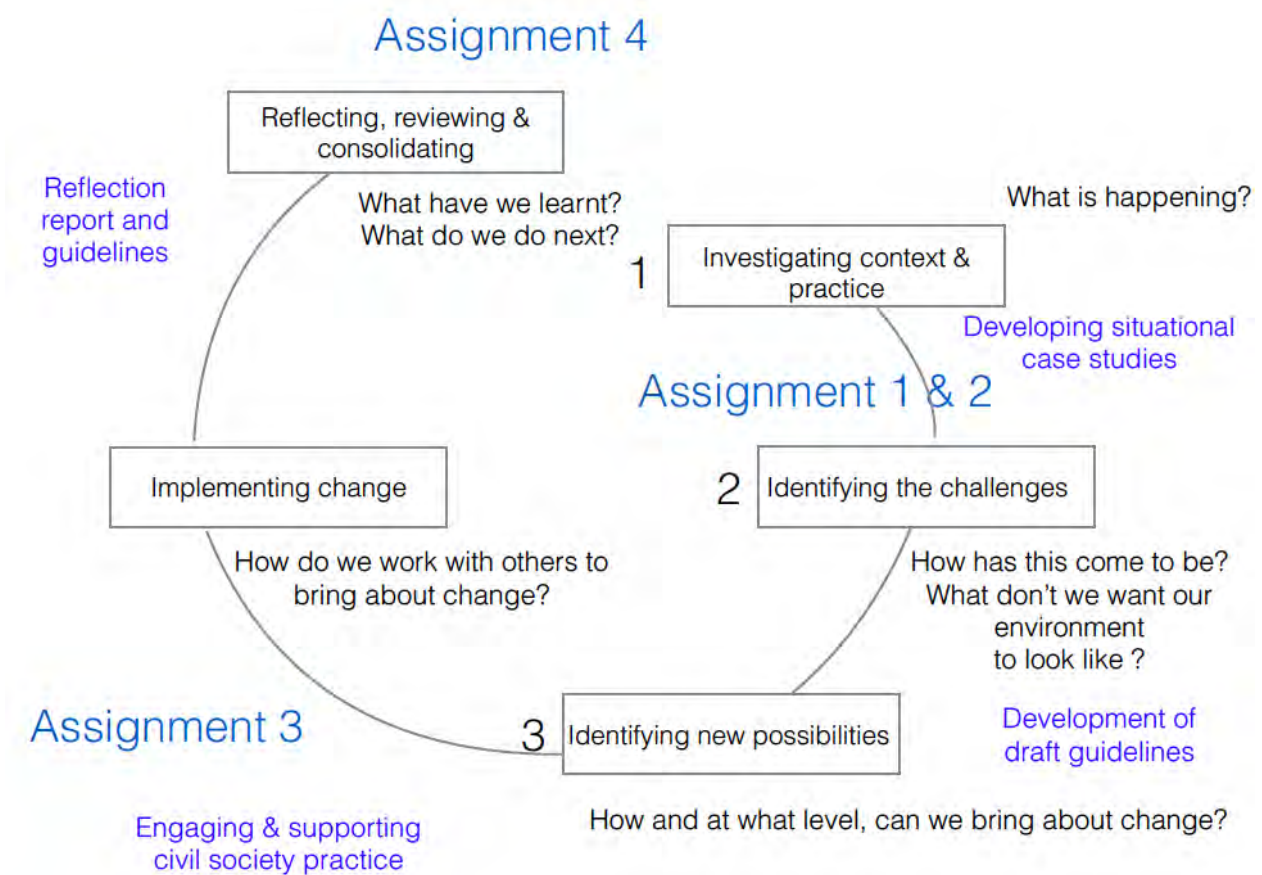
Figure 29: The design of the Changing Practice course for the South African Water Caucus. The boxes show the theme of each module in the form of a question. Thus Module 1 investigates current context and practice under the question 'What is happening?' This question continues into a linked assignment, Assignment 1, where participants explore their understanding of contextual issues by drawing on local communities' knowledge and experience of the issues. Module 2, emerging from Module 1, asks the question 'How has this come to be?' and therefore includes historical factors including government, political actors and policy as well as building knowledge networks to help answer this question. In module 3, the emergent assignment focuses on possible actions, while Module 4 expands this learning into shared strategy and action planning and implementation actions for the selected change project.

What emerges from participants' change projects is woven into broader dialogue with social movements, with government, and with other networks and platforms. As educator-activists we

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also take whatever opportunities we can to present together in conferences and workshops, and where possible we encourage activist-researchers to write and/or present their research with educator-activists [4]. This reflexive practice enables the emergence of the 'learning about learning' questions, which have led us to engage in cognitive justice as learning practice and as care work.

Transformative learning: co-learning and co-design

Figure 30: Grounded and embodied

We view the Changing Practice course itself as a Change Project. Our generative theme could be stated as 'learning about and building examples for transformative learning as an activist practice, and as a valuable learning movement within social movements.'

The primary cognitive justice element of the Changing Practice course is the continual research, reflection and evaluation of the course. Each time the course is run, we as educator-activists explore a generative question, one that has either emerged during the course or which has arisen while we were reflecting on the course and designing the follow-up course. We don't just research the questions but live into them through our practice. John Law advocates for different forms of knowing that social science methodologies do not generally take into account (Law, 2004). Such forms include knowing as embodiment (listening to the sensations in the body); knowing as emotionality (listening to the emotions as apprehensions, passion and fear); knowing through techniques of deliberate impression (questioning perceptions of what is rigorous and what brings clarity) and knowing as situated inquiry (how far local knowledge travels and whether it makes sense in other contexts) (Law, 2004, 3). For this reason we draw up models and frames for our evaluation based on each unique generative question rather than following the same evaluation method each time.

In the figure below we show how each iteration of the Changing Practice course has brought to the surface new learning questions as we learn and facilitate in solidarity with activist-researchers. This has led to explorations on the role of mediation and question-based learning, networked social learning and cognitive justice, and deepening transformative agency through layered or laminated care work (the focus of Jane's PhD work) the qualities of which we unearth below.
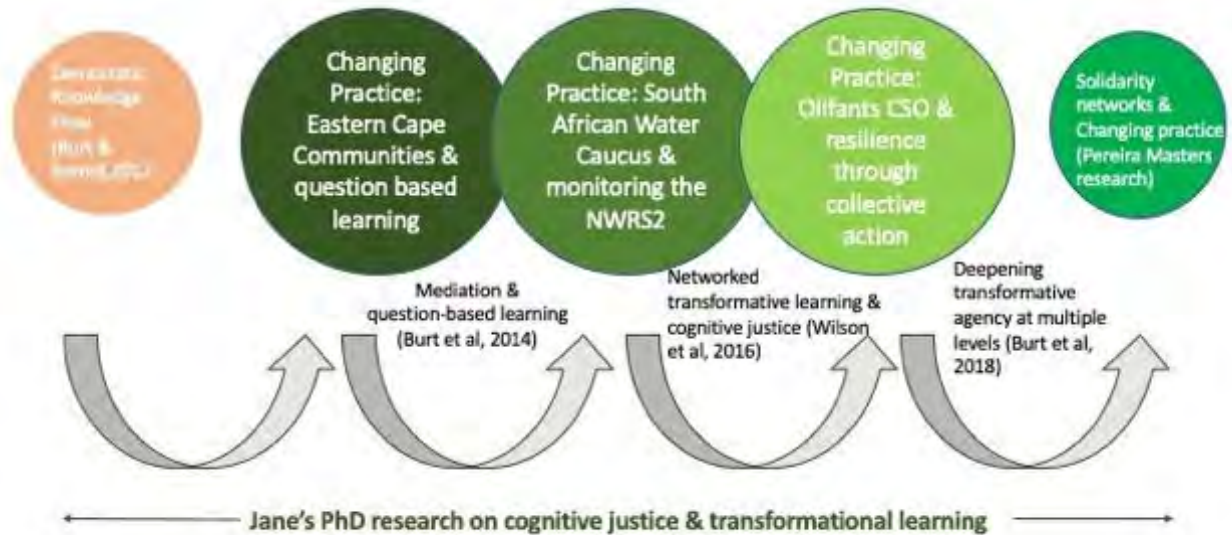
Figure 31: Changing Practice course as a change project

Figure 12 summarises the transformative learning questions that educator-activists have engaged with during each Changing Practice course. The team pays a lot of attention to these emerging questions and how to improve learning interactions in order to engage with them (Burt & Berold, 2012; Burt et al., 2014; Wilson et al., 2016; Burt et al., 2018)

Jane's PhD research, from which this paper derives, draws on collective scholarship, a process that opens up new opportunities for listening, dialoguing and reflecting, the starting point being the facilitators' own experience and knowledge. The PhD has been a conversation between this praxis and formal scholarship: a co-creating of meaning through slow distillation, with the researching and writing being collaborative and reflexive. This research approach contains layers and layers of listening (Fricker, 2003) into the emerging questions and insights in company with others (both individuals and institutions) and slowly, over time (Mountz et al., 2015), distilling insights which are then woven back into the learning and facilitating, and foregrounding the importance of listening and hearing as a form of hermeneutic justice (Fricker, 2007). This paper describes how course processes (including researching the course) can be co-engaged to allow for hermeneutic justice, which we consider an integral feature of cognitive justice.

The evidence we draw on is based on Jane's experience and PhD material and analysis over eight years of facilitating three Changing Practice courses all (as summarised in Figure 12) involving distillation, analysis and writing. This is reinforced by Heila's experience in working with others over many years in reflexive change project-based course designs and supportive engagement with researchers working in the CP courses, and Taryn's co-facilitation of two Changing Practice courses, her role as researcher in the Environmental Monitoring Group and experience as a South African Water Caucus member. The material consists of:

- raw data (interviews with participants, minutes of modules, minutes of research meetings, participants' assignments);
- first distillation (research reports, evaluation reports, participants' case reports, implementation reports);
- second distillation (two case histories based on the Changing Practice course: South African Water Caucus, with reflections into the Changing Practice: Eastern Cape, and Changing Practice: Olifants courses);
- third distillation (collaborative writing projects in the form of conference presentations, research papers and one book chapter)
- final distillation (published papers arising from PhD work, and final portfolio).

We now introduce two narratives that reflect, through participants' stories, the contradictions that emerged in our learning together, and how this research methodology allowed us to respond to these contradictions through engaging with cognitive justice.

First learning moment: personal experiences of colonial/apartheid education

Phumla 5 was excited to be doing a fully funded accredited university course. "It has been 30 years since I have studied, and I've never been to a university," she said to herself enthusiastically. On the first day the lead facilitator explained the course to them and spoke about the assignments that they would be doing. She said "This is a different kind of course. You will not be given marks for the 'right information' but you will be assessed according to criteria that we will share with you. And you can write your assignment as often as you like." Phumla

could hardly hear her. There was a ringing in her ears and she felt like crying. She felt a hot flush coming over her, her heart was beating fast. "I'm a 50-year-old woman," she thought "I can't do this."

When Phumla sat down at home with her first assignment the panic returned. She had a tutor, a nice bubbly young man, a student himself. But all she could think about was how she didn't know how to get the assignment right. She thought of phoning the young man, but he was young enough to be her grandchild. It was embarrassing... and what would she say – that she was scared? All she could hear in her head was her high school teacher from when she was 15 screaming at her for being so stupid. She remembers being beaten for being late to school. And then the student protests, the police, and the burning tyres. She remembers the hunger of going to school without food, and how her onerous duties at home made it impossible for her to study. How could she tell this young white man all this?

She did her assignment, trying to answer the questions correctly. When she went back for the next module, the facilitator sat with her and explained what she liked about her assignment and also how she could develop it. "So have I failed?" she whispered. "No, not at all," the facilitator said, "I can see that you have written this assignment as if you were trying to get it right, like the way you had to do for school. I remember this from my own schooling. But this is different. I really want to know what you think. I want to know what is happening in your community, and what they think." Phumla struggled to understand, but she started to feel that she had another chance.

Later on in the course, the facilitator asked her if she would like to write her assignment in Xhosa, her home language. She had suggested this at the beginning of the course but Phumla had not wanted to – if you were educated, you wrote in English. But now she was starting to question this.

Phumla made the decision to write in Xhosa. She found herself working with a Xhosa mentor and a white man who was her age. The two men spent many hours with her, often sitting in the sun outside the university department. She would talk about her work in Xhosa, then write it, and

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give it to her Xhosa facilitator. He would read it, ask her questions, and suggest changes. He showed a deep interest in her work. This took some of the fear of failure away but not all of it.

At the end of the course she produced a booklet for her community. This was a proud moment, although throughout the course the fear never really left her.

Learning from the learning moment

Even though the research team 'knew' of the educational experiences of most South Africans we were silent about Phumla's experience.

During our facilitators' reflections we came to understand the experience of the participants and how the trauma of learning under an oppressive educational system bonds itself to their bones and their hearts (Darder ,2018). Black people and white people were taught different curricula based on how apartheid defined their place in society and the black curriculum was limited and depressing.

Phumla's anxiety about her ability affected all the facilitators. One mentor wrote in his reflection notes:

> "I think for all students, sometime should be spent in the course on breaking down previous conceptions of learning, what learning is and what constitutes valid knowledge, so as to open the space in the course for people to value their own stories, experience and thinking and those of the people from their context. This would in essence empower the students in their ability to feel they do know things, people in their contexts do know things and this knowing is valuable and it is safe and constructive for them to contribute with their own voice." (Burt et al., 88)

That particular course had been about mediating knowledge into local contexts, but we had not acknowledged the psychological damage caused by authoritarian educational systems and what it meant to grow up in a society where one is part of the marginalised majority. Paulo Freire wrote that democratic education was not possible without "a profound commitment to humanity

and a recognition of the dialectic relationship between cultural existence as individuals and economic existence as social beings." (Darder, 1998, 1).

We realised that we had to work harder to decolonise our educational approach. Maldonado-Torres explains that "educators do not even realize the extent to which their students may find themselves breathless as they sit in their classes and listen to their lectures and the comments of their peers, as they go to libraries and find symbols that over-glorify certain bodies and societies and dehumanize others, and as they walk through campus to constantly be reminded of their place by the symbols of white power and control, now presented in liberal forms as representatives of pure excellence" (Maldonado-Torres, 2016, 5).

We had brought participants into our university context without understanding the symbols of power and control that they noticed and feared. We tried to accommodate them by offering Xhosa-speaking mentorship but this was not enough. Phumla was responding to the structural inequality she perceived in the space of power, the university, which we had invited her and other participants to enter. We had neither addressed or understood her fears.

Choudry (2015) warns how even education that considers itself emancipatory and draws on the pedagogy of Freire can be affected by market or capitalist perspectives. There is no method or idea that in itself guarantees emancipation. All methods and theories can become commodified in the market of knowledge production. This, Choudry argues, can block the recognition of development, innovation and experimentation in popular education adapted to different contexts, drawing from diverse histories. (Choudry, 2015). The participants' articulation of their experiences during the first Changing Practice course forced us to reflect on whether we were not ourselves falling into the trap of going through the motions of transformative education without 'sinking into the mud of learning'. This led us to engage in a different form of facilitation, one that was more transparent, more politically-situated, which drew on people's personal and cultural histories, weaving them into a process of critical thinking and critical feeling.

Second learning moment: a course designed for cognitive justice moments to arise[6]

For his Assignment 1 of the Changing Practice course: SAWC, Lesebo[7]and two of his young comrades, Dineo and Khosi, chose to explore the context and practice of African religions and the way that spiritual water users (a term that his group developed during Assignment 1) had been affected by the polluted Vaal river.

Lesebo spoke about how the river was not just a body of water. Rivers, he said, are sacred spaces where people gather to commune with their ancestors, ask for forgiveness and pray to God. Even the very polluted rivers of the Vaal Triangle are integral to the spirituality of the urban communities who live alongside industries that make the Vaal Triangle one of the most polluted places on earth. Lesebo was struck by the church members' devotion and the symbolism of submersion.

While Lesebo was coming to the end of his assignment presentation, Dineo[8] felt butterflies in her stomach. She had not presented anything before. She stood up and started telling the group about her experiences of speaking to preachers, how they used water from the river to cleanse their church and to cleanse people, how they made a blessed tea that was used for healing. They knew that the water was polluted, but they believed the preacher's prayers would protect them. One woman admitted that some people get skin rashes from the water.

Then Dineo took a deep breath and looked down at her feet. "Something bad happened – ", she said, "a man said he would take me to a preacher but he didn't. He took me to a place where he started his funny business. It was really horrible". She sat down. There was a shocked silence in the room.

The facilitator moved quickly to the front of the room and looked Dineo in the eye. "We need to talk about this as a group", she said. "I have had a similar experience to Dineo. When I was younger, I worked in a store where a co-worker started stalking me. He wouldn't stop even though I approached the manager. Eventually I had to leave the job. And this is not the only such

experience I've had[9]. Women are not safe in our society. How is water justice going to be possible if women can't even participate in a course without being in danger?"

Lesebo thought about how women who belong to the African Christian churches have to practise at a different part of the river to the men, and how the preacher is always a man. He thought about how different the world of traditional African spirituality was where women are most often the leaders, spiritual teachers, and healers. "It has not always been this way", he said. "Our women hold our wisdom too."

One year later, with a new group, the Changing Practice facilitators were facilitating the second 'gender dialogue', a new part of the course introduced after Dineo's experience in the previous course, and drawing on the work being done in the South African Water Caucus around gender and water[10] Using image theatre, men and women created images with their bodies of how society expected them to be as men or women. This unearthed the societal pressures that men and women felt. Men spoke of the pressure of having to make a living, of the negation of their manhood if they did not have a job, Women noticed how in the men's image they were standing straight and facing the world whereas in them women's image they were curled up, facing inwards and in pain.

The facilitator then asked each gender group to make an image of how they wanted to be in the world as opposed to how they thought society wanted them to be. The women were quick, their image was complete in five minutes: "We know what we want – powerful women, women leaders". In the men's group there was a lot of discussion and disagreement, "some of us felt we can't share chieftaincy and money with women, but those were outvoted." They also expressed that the changing role of women was too ambitious and too challenging for them. It was happening too fast.

Before the conversation ended, the facilitator asked: "Let's listen to each other as if all the pores in our body are ears, let's keep thinking within ourselves whether we are going for 'power over' or 'power with'. Whenever there is a fight to end oppression there is a choice between these kinds of power."[11]

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"It is hard to know how to move forward", the facilitator said afterwards to her older colleague and mentor. "It is so painful to hear how people here have been disrespected by the mines and by government. It hurts. And I don't know how to move forward with the gender dialogues and words don't seem to take us forward[7]. "The older I get", the older woman says, "the more I feel that education is about bringing in more silence, more listening, more gentleness. Maybe the task is not so much the gender dialogues themselves as much as bringing a feminine way of being into all aspects of the course. Let the discussions on gender emerge from people's experiences and struggles for environmental justice. Bring in the gentleness, the heart, the body, contemplation, silences and listening. Above all listening and silence. Learning to listen and hear each other is powerful."[12]

Learning from the learning moment

The second and third Changing Practice courses took place within networks of civil society organisations. Running the courses within an environmental activist movement meant that issues of injustice could be foregrounded.

Knowledge and the process of knowing were politicised from the start. The course design was flexible and responsive enough to whatever emerged, and one issue that emerged clearly was how women as change agents experienced high levels of risk just because they were women. The gender dialogues revealed how men, even though having more advantages in society than women, are still slaves to the patriarchy. This led us to make gender inequality and other forms of inequality, a central theme in the third iteration of the course. We learnt together how to challenge power in a caring way by listening to each other's bodies and in dialogue circles that helped us talk about the inequalities between us.

We now describe what we have learnt through three iterations of the Changing Practice course as a 'lamination of care' ('lamination' referring to the different overlapping and emergent levels of care) towards facilitation becoming a cognitive justice learning practice.

Lamination of care towards facilitating as cognitive justice learning practice

Figure 32: What could be

Making cognitive justice an integral part of the Changing Practice course is possible when we as facilitators engage in a dialectical process between 'what is happening' and 'what could be' in the design of the course, and extend this approach to the way participants engage with their change projects (Bhaskar, 2008; Bhaskar, et al. 2015; Burt et al. in press). Through this reflexive praxis we can work with cognitive justice as care work. We can do this by drawing on critical realist notions of emergence (Bhaskar, 2008; Bhaskar et al. 2010; Bhaskar & Scott, 2015; Bhaskar, 2016) and articulate cognitive justice as a 'lamination of transformative care'. The lamination concept is adopted from Critical Realism (ibid). It demonstrates how we live in open systems and so need to

engage at several levels to bring about transformation. These levels of care are irreducible to each other and yet emerge from each other.

A critical realist notion acknowledges that an emergent level is dependent on the level from which it emerges, for example the mind depends on the body. In our case, looking at transformative care, a caring society depends on caring communities which in turn depend on caring individuals who care for themselves and who resist acts of violence. It follows that transformative learning as cognitive justice means working at all levels of our existence, unearthing all knowledge about ourselves, our communities and our world that can lead us into a caring relationship with one another and ultimately with the planet [14].
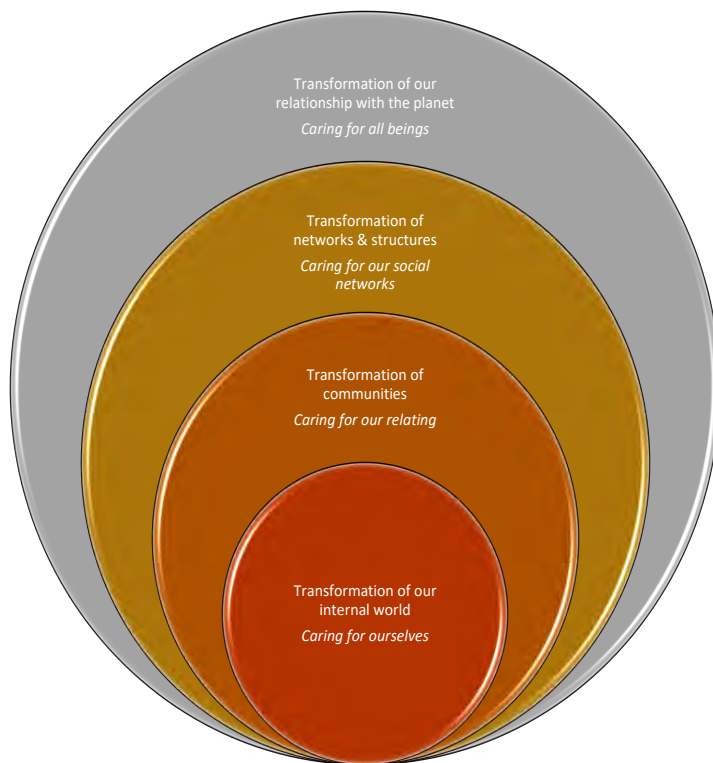
Figure 33: The lamination of care required to effect full transformation

We can now articulate the levels and qualities of learning design, learning research and facilitation needed to engage with cognitive justice as co-created transformative care work.

Caring for ourselves: transformations in our internal world

The facilitators in the first iterations of the Changing Practice course all had some intuitive sense of what cognitive justice could be, but we lacked the language and concepts to fully engage with it. Through the many hours spent in planning, module design, co-facilitation, reflecting, valuing and evaluating one another, our team of facilitators developed a robust circle of trust between themselves. Within ourselves, and within this circle, we were able to be vulnerable and fallible, which helped us face various contradictions.

We began to do so by listening to ways in which our course participants named the inequalities that manifested between us. Such listening had to be responsive to the direct concerns of the participant-activists on the course, with an understanding that transformative action emerged in unforeseen ways and needed to be engaged with at many levels. In short, we learned that to practise cognitive justice, we had to immerse ourselves in the mud of the learning process.

An example of this happened when participants on the Changing Practice: Olifants course mentioned that they were feeling that the transport arrangements to and from the venue had been unfair to them. This prompted the facilitators to dedicate a substantial portion of the morning to a 'dialogue circle', in which these concerns were voiced and acknowledged.

In all the concerns and expressions of pain described above, we did not dwell in the traumas – but traumas opened the spaces to build relationships and solidarity and imagine other ways of being. As Lily George, a native American anthropologist writes:

> ...what those such as Choctaw scholar, Karina Walters, say about historical trauma, is the point of it is not to dwell on the 'drama of the trauma' of that history; it is about acknowledging the trauma, dealing with it, healing from it, and transcending that traumatic history to move forward in a much more positive way. (George, 2018, 63).

Caring for others and ourselves: transformation of communities

As educator-activists, we show our solidarity with course participants by being part of environmental justice movements. The Changing Practice course is thus a way of expressing our commitment to work together. As we are facilitating learning within social movements, whatever

emerges from the course can be woven into the broader social movement, and conversely the social movement deepens the work emerging from the course.

We also create forms of alliance and solidarity which may be useful for other professionals to learn from. For example, we lobbied for the inclusion of Changing Practice participants in the 'professional' space of the 2018 International Seedbeds of Transformation conference. We brought perspectives of cognitive justice into that space by building the confidence of activists in their own knowledge and encouraging them to speak up in a more intellectual/professional space. We supported each other in this space, meeting over lunch to discuss what we were learning and how we were feeling in the space. One activist told the conference: 'It is time for you to be led by the oppressed'.

Caring for our social movements: transformation of networks

"We live in a class society, and we live in a capitalist society. So the capitalist class dominates us, and its teachings remain dominant in all aspects of life, including how we are socialised" (SAWC coordinating committee member during the gender and water dialogues, 18th October 2016) [15]

Caring for our social movements includes caring for our scholarly and education networks as potentially transformative movements. We take a firm stand politically against structural inequality, with an ear to listening not only to spoken expressions of inequality but also to the silences in our educational and professional institutions that are often pushed under the carpet in our own networks.

As educator-activists, we have to be clear about whose purpose our research and educational practice serves and who it benefits. We research co-learning processes to practice what Jane calls 'relational scholarship' or 'collective scholarship' -- notions that are vital to how she situates herself as an educator-activist. We discuss how universities (and other institutions) are caught in political and economic structures that reproduce class through categorisation of knowledge (Choudry, 2015; Darder, 2012), ownership of knowledge and rewards to the individual scholar. We prefer to think of scholarship as care, as relationship-strengthening and relationship-creating, scholarship as collective action. It is a feminising of scholarship as care work (Mountz et al., 2015)

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which can only be done as collectives. The intention of such work is ultimately the wellbeing of humanity and the earth itself.

Our approach is that research is not something done by academics or professionals, it is something that we all do if we listen, question, engage in dialogue, reflect and narrate the world. It is also not enough to name the inequalities in our networks, we need to understand 'what is happening?' and 'what could be?'.

Caring for our economic, social and political structures: transforming society

The care work required at this level is transparency about all the structures of the course, especially as they exist within economic and political structures. Cognitive justice and transformative learning as care work insist on transparency in their educational approach, transparency in how funds are distributed, and an openness about how the course is situated in relation to the university, social movements, NGOs and donors. It also means listening to all experiences of injustice as valid experiences regardless of whether or not they link directly to the environment. Environmental justice cannot be decoupled from social justice, just as social justice cannot be decoupled from the environment and the non-human world. What enables men to be able to objectify women is the same process that enables humanity to objectify the planet.

Caring for all beings: transforming our relationship with the planet

The final and perhaps the most important cognitive justice process is to clarify the significance of knowledges that exist beyond westernised culture, which are non-binary in their view of the relationship between humans and the planet, and expose how such knowledges are ignored or undermined by mainstream and professional knowledge systems.

We can change our perspective on this by seeing participants as already being experts in what they do. And if we do feel concern about any lacks on their part, to first identify our own inability to listen or see. When facilitating we take the perspective that what is being revealed by the Changing Practice participants is new and vital knowledge that offers us an understanding of what makes our world the way it is as well as providing ways to imagine a different world.

In one activist's reflections after attending Seedbeds of Transformations conference, she wrote, "What I took away is that with science there is always a solution but there are no strategies for solving or to implement the solution measures within the affected communities." This speaks directly to Visvanathan's critique of science in the developing world (Visvanathan, 2005). The knowledge produced by science is often perverted to impose solutions which often override the concerns of affected communities – solutions which either see affected communities as collateral damage, as liabilities in implementing reform, or as passive consumers of management, economic or political solutions.

The participants' knowledge offers educator-activists a different way of practicing their skills and to dialogue about their knowledge such as presenting the science of climate change as knowledge to dialogue with when developing local strategies. This does not mean that we have to proclaim, 'all knowledge is equal'. It is a call to understand that we need more than scientific knowledge to explain our human and non-human worlds and the way things are. This knowledge is held in our everyday lives and is the foundation of indigenous knowledge (Sabai, 2016).

Conclusion

Figure 34: A teacher emerges

"What is a changing practice? That a context is about history, the environment of that particular place, that a practice is a part of learning." (Reflection from a Changing Practice participant, Changing Practice: Olifants catchment, cited in Burt & Pereira, 2018)

When working with cognitive justice no contradiction can go unacknowledged. The learning process is one of listening to what is said and the silences of what is not said. It also means agitating – moving with the discomfort, and stirring up the silences that hide our past and obscure our futures. What is also apparent is that the language for describing this co-engagement is not yet wholly formed. It is heartfelt but vigorous. It is dialogic as well as metaphoric. It is body, flesh, emotion and thought combined. It is not always expressible in words but it can be communicated by being open to expressions of the body, voice, artistic expression and silence.

In conclusion, we believe that any educator-activist who wishes to engage with environmental learning and cognitive justice, has to engage in care work. Care work is the transformative work that enables cognitive justice. From our experience of working reflexively in this course, we have learned that cognitive and hermeneutic justice demands of course facilitators to co-design learning programmes and courses with care, and always be open the many different kinds of care work needed of educator-activists. We should always be willing to enter the mud together.

End notes:

[1] While Jane, Taryn and Heila are the stated authors of this paper, it has been a generative process involving all the facilitator-researchers who have been involved in the Changing Practice courses, as well as the participants of the course.

[2] After the first module of the Changing Practice course: Olifants catchment, Jessica Wilson, a facilitator on the course, wrote an email to the other facilitators. She told a story of how her mother had met Paulo Freire in Geneva, in the mid 1970s, when he was special educational advisor to the World Council of Churches for about a decade. Lindy Wilson asked whether they were on the right track with a literacy programme that they were running through the South African Committee for Higher education. He replied that he didn't give advice but worked with metaphors, saying that before you start anything it is necessary to immerse yourself in the lives of those you want to teach akin to getting into a mud bath with them and becoming covered in mud yourself. Then, covered in mud, you must stand up, stand tall and become the teacher/facilitator/leader. This story touched and inspired Jane to face the contradictions of environmental injustice in her work.

[3] We use a narrative style to counter the hegemony of much academic writing which often masks the messy process of reflexive praxis and the multiple voices out of which new knowledges emerge.

[4] Jane Burt and Thabo Lusithi's chapter in a book on forging solidarity (Burt & Lusithi, 2017) draws on Thabo's change project as an example of how solidarity can be built when spaces for public engagement are shut down. The chapter raises issues about the process of decision-making in building solidarity and the extent to which one can speak for oneself while representing a community organisation.

[5] Phumla (not her real name) was a participant on the Changing Practice: Eastern Cape course. We reconstructed her story from facilitator's reflections documented in the final report (Burt et al., 2014) and the evaluation report on the course (Rivers & Burt, 2014).

[6] This story came from a case history of one of the organisations in the South African Water Caucus Changing Practice course, which documented the learning history of this organisation and the generation of their change project.

[7] Names of participants have been changed. Lesebo means 'gift of the ancestors' in Sotho.

[8] Names of participants have been changed. Dineo means 'gift' or 'talent' in Sotho.

[9] Jane blogged on her PhD blog 'Insecurity of knowing' about her experiences of sexual assault and harassment in response to the protests against gender violence at Rhodes University in 2015.

[10] The issues around gender that affiliated organisations started to unearth through their change projects were taken up collectively by the South African Water Caucus (SAWC), though gender dialogues and a discussion paper, leading to a principle on gender equality being added to the SAWC principles.

[11] Taken from the minutes for Module 2 of the Changing Practice course: Olifants catchment and the Milestone 4 report (Burt, 2017). Jane, as the facilitator, was drawing on the work of Bhaskar. In the morning, during a session exploring different kinds of knowledge, participants had discussed how they would rather work with knowledge which leads to 'power with' and not 'power over' people. Bhaskar distinguished between two forms of power: power 1 (to oppress and dominate) and power 2 (power as a transformative capacity). The ability to actualise power 2 depends on the ability to know or to generate knowledge of explanatory structures and mechanisms that account for oppression and the conditions that can transform these (Bhaskar, 2016, 55).

[12] Pers comm, Shirley Walters, April 2018

[13] Bhaskar points out that even though some sections of society benefit from patriarchy, capitalism, whiteness, and neoliberal economics, this does not make these 'beneficiaries' free. The patriarchy may require men to be cruel, strong, and often violent. They may be expected to live in a dangerous world where they can be hurt or even killed, or hurt or kill others. And it is not only other men that expect this from them, but some women too. (Bhaskar, 2016; Burt et al., in press)

[14] This links to Bhaskar's (2016, 53) four-planar being which proposes that 'all social activity and all social beings occur simultaneously on the four dimensions of: material transactions with nature; social interactions with people; social structure; and the stratification of the embodied personality

[15] Taken from the report on the SAWC gender and water sessions held on 18th October 2018

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Article 3: Research for the People, by the People: The Political Practice of Cognitive Justice and Transformative Learning in Environmental Social Movements †

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† This quote comes from December Joseph Ndlhovu, a participant in the Changing Practice courses, who has recently become a Changing Practice course facilitator. He stated that the best people to research the contexts of people who bear the brunt of environmental injustice are those experiencing it and acting to change it.

Abstract:

This paper describes how Changing Practice courses, developed by environmental activists in South Africa and based on social learning practice, have seeded cognitive justice action. For the educator-activists who facilitated these courses, it became apparent that we needed a bold emancipatory pedagogy which included cognitive justice issues. This enabled us and the activist-researcher participants to understand the extent to which local, indigenous, and spiritual knowledge had been excluded from water governance. The paper investigates how participants in the 'Water and Tradition' change project, established by the Vaal Environmental Justice Alliance (VEJA, engaged with cognitive justice, to demonstrate how African spiritual practice offers a re-visioning of the natural world. Finally, using the tools of critical realist theory, the paper reviews how VEJA bring about transformative social action through their participation in the Changing Practice course.

Keywords

Introduction

This paper explores the transformative capacity that emerged from a cognitive justice approach to transformative environmental learning. The context was the second iteration of a Changing Practice course for environmental activists in South Africa – part of a broader action research project, implemented by the Environmental Monitoring Group (EMG) and funded by the Water Research Commission (WRC) that investigated how civil society could monitor how South Africa's National Water Resource Strategy 2 (NWRS2) brought about water justice [1]. The 'change projects', which were part of these Changing Practice courses, became case studies in this broader research project.

In learning from the first course [2], I designed the second course by drawing on Freire-inspired critical and emancipatory pedagogy [2] which emphasizes how a learning process has to respond to the historical and material realities of participants, and at the same time take into account how the learning process itself is situated historically [3]. This approach led to generative moments where we, the facilitators and the participants, all had to engage with inequalities such as gender violence and exclusion, and the politics of knowledge – i.e., how knowledge is used to support the values and interests of the powerful in a neoliberal economy. In engaging with these issues, we began using the concept of cognitive justice in our learning praxis. These perspectives significantly changed the way we participated in the learning process, both as activist-educator facilitators and activist-researcher participants.

In particular, the paper looks at the 'Water and Tradition' change project, which was developed by the Vaal Environmental Justice Alliance (VEJA) an organization participating who had three participants attending the Changing Practice course. Their change project explored the relationship between African spiritual practitioners and the highly polluted Vaal River [4]. As will be seen, a focus on cognitive justice praxis as transformative learning led to VEJA seeding transformative social action in their change project and influencing the design of the course.

Including Justice in Transformative Environmental Learning

Humans have created an economic system in which people in rich countries consume ten times more of the world's resources than people in poor countries [5]. The way we use resources has led to what Elvis Komane, an activist-researcher on the Changing Practice course, calls 'ecological

theft'. He made this statement at the Future Earth Seedbeds for Transformation Conference in Port Elizabeth held 9–11 May 2018. He was one of four activists who attended this conference. At this conference he spoke out boldly about the intertwining of inequality and environmental devastation, themes that come out of his organisations change project. There is a great need to transform this situation, and education and learning are seen as core mechanisms of transformation towards a more sustainable world.

However, David Orr writes eloquently about how Western educational systems and practices" equip people to become more effective vandals of the Earth" ([6] p. 5). Jickling and Wals ([7] p. 51) argue that education is only useful when we reflect on what kind of education we are engaging in, and for what purpose.

This section of the paper looks at how to include justice into environmental learning. Let us begin with a commonly used approach to environmental learning and see how it could be even more effective if situated within a broader social critique. A good example would be cultural historical activity theory (CHAT), which is useful and popular in environmental education. CHAT is a derivation of Vygotsky's research into childhood developmental learning [8], and its concept of expansive learning explores the co-constructing of the learning process through dialogue between the researcher/teacher and the employees/learners [9].

Engestrom defines expansive learning as the process through which an activity system (such as a particular work practice) resolves internal contradictions by "constructing and implementing a qualitatively new way of functioning for itself" [10]. This is achieved through broadening the shared object of work by explicitly (via the CHAT analysis) looking at the shared work task, tools, models and concepts of the activity, and identifying contradictions such that researchers and practitioners are able to construct new tools and models to overcome them.

Engestrom [9] points out that this process does not always lead to change, because once new tools or models are identified, an inertia often sets in. He suggests that the inertia is linked to identity formation – "After all, practitioners facing major transformations in work must somehow see themselves as individuals taking on a new personal identity, when the entire work activity is radically changed" [10], (p. 98). Gee (2003) argues that identity is a necessary component in all serious learning: All deep learning, he says – that is, active, critical learning – is "inextricably

caught up with identity in a variety of ways. People cannot learn in a deep way within a semiotic domain if they are not willing to commit themselves fully to the learning, and such a commitment requires a willingness to see themselves via a new identity ([9] p. 36).

Carpenter and Mojab [3] query whether expansive learning makes it possible to resolve intractable internal contradictions, and argue that there is a limit to which models and tools like CHAT can address deeply embedded inequalities (both contextual and historical) and the politics of knowledge generation. Nevertheless, expansive learning theory can contribute much that is useful for a more transformative approach to learning, i.e., its process of intervention, its identification of contradictions, use of dialogue and collaborative engagement, and generation of new models and tools for experimentation.

How then to integrate social critique with expansive learning? Social movements have a long history of learning [11–18], leaving a legacy of adult learning and social movement learning or popular education. Some approaches to adult learning that falls outside of social movements has been criticised for losing their political edge, and for being reduced to a methodology without the commitment to liberation that made the work of these thinkers so effective [8]. Environmental education has also come under such criticism, with demands for a movement closer to addressing social inequity and injustice [15,17,18]. This has led to a resurgence of Freirian educational theory and postcolonial theory to be included in environmental education, as well as (for me) the exciting prospect of introducing ecofeminism [19,20] into learning for transformation.

There have been calls for the environmental sector to reconceptualise transformative learning to include transgressive learning, defined as learning that "intentionally generates critical thinking and collective agency and praxis that challenge factors that have become normalized" ([21] p. 51) but have to be challenged vigorously for substantive sustainability transformation. Examples would be colonial practices, or gender and race relations [21].

Such approaches to learning are not common within the sustainability movement, where environmental risks to the planet are usually separated out from issues of justice and inequality. Expansive learning may lead to transformations within a work environment or lead to a new understanding about complex issues, but neither of these necessarily challenge normative

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practices. Lotz-Sisitka et al.'s [21] paper poses two useful questions about the purpose of education—Is it transformative and transgressive, and how? Answering 'how' reveals the transformative capacity that is generated for and by an educator-activist and activist-researcher. I have explored this in some detail in Burt et al. [22].

I would argue that much of the transgressive learning we need can be found in the way popular education happens within social movements [11]. In social movements the divisions between educator and activist are blurred, because activists are educators, and professional educators who work with activists are themselves activists who situate themselves within the social movement. Popular education is thus overtly political, in both theory and practice, engaging with questions and contradictions coming out of social action being thrown up for dialogue and analysis, action and reflection (praxis) [23]. Needless to say, such engagement cannot be extracted as a 'method' to be used outside its political-activist context. I emphasise this by referring throughout this paper to facilitators and educators as 'educator-activists' and to participants in the change projects as 'activist-researchers'.

This paper uses a case study to show how the Changing Practice course has been an example of the effective incorporation of cognitive justice into transformative learning, in two ways:

1. Activist-researchers' work in the Changing Practice course shows how engaging in cognitive justice throughout the course, and in the development of their change projects, was transformative and transgressive. The Vaal Environmental Justice Alliance case directly and explicitly challenges certain aspects of society that have become normalised.
2. Activist-researchers learned to act and reflect on how their work can transform their practice based on issues that activist researchers raised. This contributed to both the theory and practice of their learning, and to the theory and practice of cognitive justice.

I also demonstrate, through the example of the VEJA case, how cognitive justice praxis is core to transgressive learning practice.

Below, I briefly explain what educator-activists and activist-researchers mean by cognitive justice. I then introduce the methodology I used to investigate the VEJA change project and how it

engaged with cognitive justice, leading to transformative action both within their change project and within the Changing Practice course.

What Is Cognitive Justice?

In this section I explain the concept of cognitive justice and how we came to engage with it as educator-activists and activist-researchers.

The term cognitive justice was developed by Visvanathan as a response to how Western science (and the products of Western science) can become transferred in ways that lead to violent consequences, such as the forced removal of thousands of people to make way for the building of a dam ([24] p. 87). Visvanathan maintains that the fundamental violence built into Western science is revealed when the majority of people in the Global South are degraded to the status of consumers of knowledge generated in other contexts, and denied their rights as creators of knowledge.

Visvanathan advocates firstly that knowledge should be engaged as a parliament of epistemic debates, and secondly that knowledge systems are ecologies that need to be given space to thrive as active practices ([24] p. 93). Other activists and scholars have taken up the cognitive justice concept, showing how the legitimisation of Western knowledge often involves an act of seizing power in the intellectual sphere by belittling or ignoring the knowledge held by diverse cultures and countries in the Global South [25–31]. This seizing of intellectual power often includes the domination of mechanisms of knowledge generation such as the media, universities, internet resources, and professional institutions [31–34].

Cognitive justice has become an important generative concept in the Changing Practice courses in the water sector in South Africa. My own exploration of its relevance began with witnessing the need of participants in these courses to find a way of articulating the violence of the politics of knowledge [26,27,35]. I realised that I had been for a long time unwittingly assenting to such violence because of the nature of the institutions to which I belonged, historically linked as they were to colonialism and apartheid. Visvanathan's theory of cognitive justice provided a basis in which I, and others involved in the Changing Practice courses, could gain some perspective and include knowledges that are not heard or recognized in professional and government contexts. I

first introduced the concept of cognitive justice into the Changing Practice course when I was facilitating a module on 'knowledge networks' (February, 2015). We were discussing with activist-researchers how to access or create networks of knowledge, and the activist-researchers spoke about how they had long been excluded from certain networks. They later took this awareness to other contexts such as the Forum of Forums indaba. This was a research project funded by the WRC that looked at how to revitalize catchment forums in South Africa. Catchment forums were designed under the 1998 National Water Act [36] for civil society participation in water resource management, and the research project reviewed the establishment and functioning of forums throughout South Africa. The research culminated in a two-day 'Forum of Forums' indaba where various stakeholders gathered to discuss what was working and what was not working in catchment forums. Besides academics, government officials, activists and NGOs, there was a strong representation in the indaba from the South African Water Caucus, including participants from the Changing Practice course. The Changing Practice participants used their research to object to the way poor communities and African spiritual water users were excluded from forums because of the narrow forms of knowledge shared. In addition, they asserted, catchment forums were dominated by large scale water users and difficult to access, as meetings were often in cities and in expensive venues [37].

One criticism of cognitive justice has been that, in its attempt to value local and indigenous knowledge systems, all knowledge becomes viewed as relative or, alternatively, that Western science reduces the reality of indigenous knowledge to a quaint pseudoscience in which cultural practices become false explanations. To counter such criticism, I found it was effective to draw on critical realism, a theory which offers a way to engage with indigenous and spiritual knowledge without prejudice [38]. The layered nature of critical realism accepts that the non-empirical is real—so absences are real even though they cannot be measured (an example being how the absent past shapes the present). According to critical realism, solely empirical explanations provide shallow understanding of events because they do not include or reveal all the mechanisms that make an event possible [38]. Thus, we can describe a river in terms of water chemistry, or as a habitat for particular species, or as a hydrological system. Each of these explanations reveals much about the river but none of them explain the underlying interconnectedness between living beings that make the river essential for human life.

Leigh Price ([38] p. 345) calls Western science's inability to take indigenous axiology seriously 'effectively racist' in that it takes its own superiority for granted. Critical realism, on the other hand, sees mechanisms and structures as emerging out of empirical levels of reality, and so connects all phenomena to the real. Critical realism thus embraces epistemological relativism, allowing a diversity of explanation which does not take away the reality of the mechanism. Our explanation for the interconnected web of life can vary from our relationship with God, to honouring our ancestors, to systems thinking. Incorporating critical realism with cognitive justice into our educational practice strengthened its transgressive possibilities.

The conceptual framing presented above is meant to provide background on how we applied cognitive justice in the particular Changing Practice course described below. This paper does not attempt an in-depth overview of cognitive justice theory and practice as applied to the Changing Practice courses in general, although this has been done elsewhere (e.g., [39]).

The Changing Practice Courses

In 2014 the EMG, together with the SAWC, began a social learning and action research project funded by the WRC. The purpose was to strengthen civil society's monitoring of the NWRS2 by testing social learning approaches to capacity building. Some work had been done on this in a previous WRC Changing Practice course run through the Environmental Learning Research Centre (ELRC) Rhodes University [2]. This time, however, the Changing Practice course was embedded within the SAWC social and environmental movement. It gave the research team an opportunity to test a collaborative action research and social learning approach towards the realization of participatory democracy [1].

This was a radical approach for an established research institution like the WRC to be funding. It allowed participants on the course to respond to broader research questions of the WRC study as well as feed into and inform the SAWC's own campaigns and priorities. The project was ambitious—to understand the role of civil society movements in the monitoring of policy, to strengthen these movements, and to see how social learning could inform monitoring activities, while at the same time strengthening the member organisations of the movement and its network as a whole [1].

Changing Practice courses are designed as four or five iterative cycles of learning (See Figure 1). Each cycle consists of a working together session and a working away session, in which participants concentrate on their change projects in their home environment. The change projects include generative themes [1] (developed through the guidance of dialectic questions posed by the course) that participants bring back to the Changing Practice course, and for which learning is designed and facilitated. In this way the course content and learning methods change with each cycle, depending on what emerges from the change projects. The process is a continual back and forth weaving which requires care and reflexivity on the part of the facilitators. This flexibility made it possible to foreground cognitive justice in the course design and practice.

Changing Practice courses require facilitators to carefully (and care-fully) situate themselves in relation to the work of the participants. The facilitators have to know how to build relationships, be alert to generative moments, open opportunities for knowledge existing in living networks, notice and mediate multiple forms of knowledge, create access for activists to professionals and professional institutions, and engage in multiple levels of care work [36]. The facilitators have to see participants as experts in their own right, and allow participants' knowledge, some of it generated through their change projects, to influence them and the ongoing design of the course.
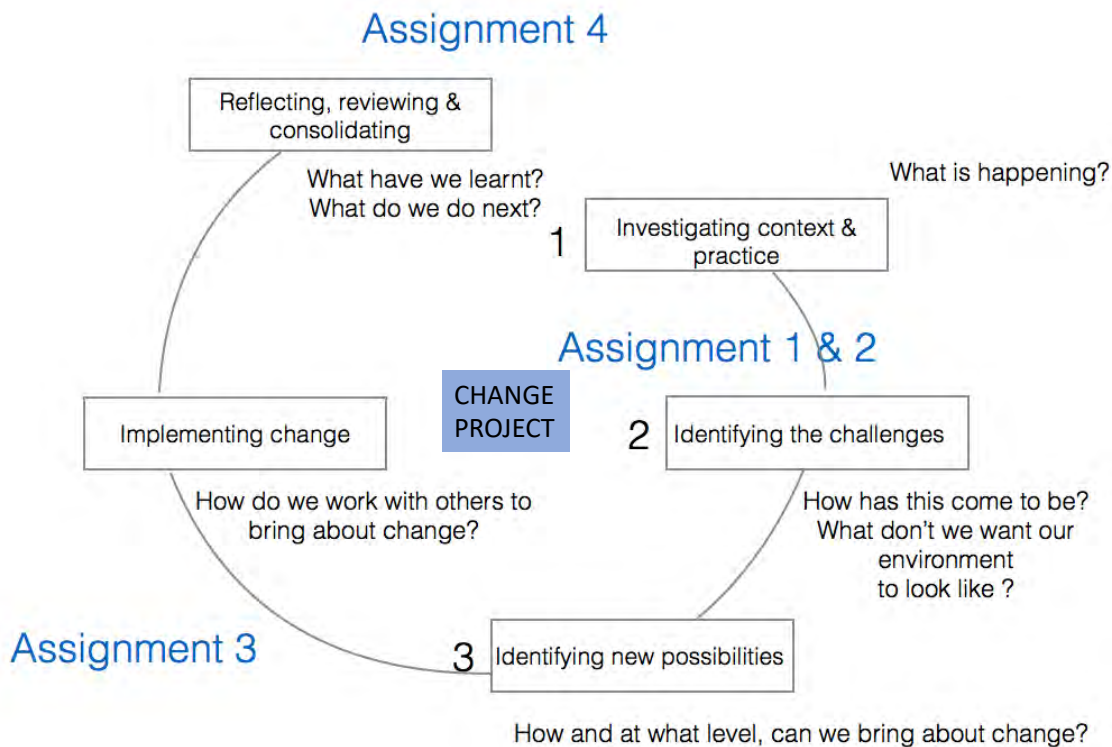
Figure 35: Design of Changing Practice course for the South African Water Caucus

Materials and Methods

Critical Realism and Transformative Social Action

In this section I outline a critical realist approach to transformational social action, called the transformational model for social activity (TMSA) [38,40–44] which I use to underscore the Changing Practice course educational approach. TMSA provides a theoretical basis for showing how cognitive justice social action can be enabled by the Changing Practice courses.

Critical realism, as explained by its leading theorist Roy Bhaskar, is an ethical philosophy that argues that an accurate way of seeing the world leads to the accurate way of acting in the world [45]. According to Bhaskar, Western philosophy conflates epistemology and ontology, and therefore speaks from an unsound ontological position which inhibits radical change [45,46]. In a further development of critical realism, which he called dialectical critical realism, Bhaskar identified another hiatus in Western philosophy, namely that it speaks of reality in terms of

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positive qualities and tends to be silent about negative qualities which he refers to as gaps and absences. For Bhaskar this means Western philosophy has a limited view of real change, because if reality only consists of positive qualities, then change can only be a redistribution of these qualities rather than an absenting of qualities or the filling of gaps [24,41]. This way of seeing has significant value for how we look at indigenous, local or spiritual knowledge. Most forms of spiritual knowledge include an ethic of care for the environment, the absence of which means a real gap between the ability to know and the ability to act ([38] p. 348).

I have found, in the Changing Practice courses, the critical realist epistemological dialectic [40,41] to be of great help in articulating the transformative learning process, because it sets out moments where 'absences can be absented' and thus new knowledge generated. I have described this ([39] p. 14) as a sequence of changed perspectives:

- From 'it is happening' to 'what is happening?' (absent the absence of acknowledgement that there is a problem, rather than assume the status quo to be normal)

- From 'what is happening? to 'how can this be?' (absent the absence of an explanation for the problem)
- From 'how has this come to be?' to 'how can this be transformed?' (absent the absence of action to address the problem)

A critical realist approach to agency acknowledges that we are all born into structure. We have no choice about the context into which we are born, but this does not mean that we cannot influence our context. All human beings have agency and every act is agentive. The issue is whether such agency reproduces structure or whether it transforms it. As Bhaskar puts it, "Society is both the ever-present condition (material cause) and the continually reproduced outcome of human agency" ([47] p. 37).

Bhaskar describes dialectic engagement as agency in four dimensions or planes [40]:

- Material transactions with nature: this refers to transformations at the level of personal and collective interdependence with species, habitats, landscapes, the planet, and even the cosmos ([48] p. 6).

- Social interactions between people: seeing relationships as a core ingredient for action, and acknowledging that individuals and social systems cannot be reproduced or transformed without social interactions ([41] p. 6). Social interactions between people are described by Bhaskar as on a continuum between the two poles of enabling, which Bhaskar refers to as power one (power as transformative capacity—'power with') and oppressive, which he calls power two (power as oppressive as in a master-slave relationship—'power over') [40]. We have the choice to reproduce oppression or move towards transformation in enacting our relationships.
- Social structure: although social structure precedes agency, the form that social structures take is dependent on what we have done and what we will do.
- The embodied personality: an individual is an embodied historical, feeling and thinking being. There are many ways in which individual freedom can be suppressed—human bodies can be incarcerated or treated with disrespect, ways of thinking and knowing the world can be unequally valued, individuals do not have the same access to education. Transformative action attempts to free the body from health risks, free the mind through more open ways of thinking, and heal psychological conditions such as lack of confidence or sense of inferiority—all of these being constraints that can inhibit action [40].

These four planes of being should not be viewed as staggered on top of one another but, as Bhaskar prefers to see them, like a cube ([40] p. 54). For transformative social action to succeed, there must be an absenting of obstacles to transformation at all four of planes of being.

If we as environmental activists take seriously the common assertion that we are all learners, critical realism gives us the tools to educate and transform our practice and transform how we think and practice learning. Carpenter and Mojab [3] write that what is required in adult education is a dialectic analysis of the injustices we want to change as well as an openness to our learning process that needs to be continually questioned in the light of the contradictions of the social, cultural and material world.

When a participant unearths one of these contradictions through direct experience, whether via anger or contemplation, the learning moment has to expand to embrace this. As facilitators we have to be willing to delve into these contradictions. I have found that the critical realist dialectic

as a facilitation practice, within an understanding of the TMSA, unfailingly opens a way to deepen my own transformative educational practice.

We turn now to the VEJA case as an example of how cognitive justice was applied.

Results

'Water and Tradition': A Case Study of the VEJA Change Project

"We began to understand the moral value of cultural religious groups' practice based on natural water" ([4] p. 1).

The Vaal Environmental Justice Alliance (VEJA) has for many years been involved in a community monitoring programme of the Vaal river system, one of the most polluted in South Africa [42,49]. The VEJA community monitors found that traditional healers and African churches were practising their rituals in the river system, including in some of the most polluted parts. This was of concern to VEJA as no representatives from these religious groups had attended the catchment forums where information about pollution is shared. The catchment forums are the formal channels for stakeholders to raise their concerns with the Department of Water and Sanitation.

As their change project in the Changing Practice course, VEJA participants wanted to investigate how spiritual water users (a term they coined) could be seen as valuable custodians and water users, on an equal footing with agricultural and industrial users of water. They wanted to know why spiritual water users were not participating in water governance forums, and what prevented them from participating. In their change project booklet VEJA wrote that "We argue in our case that spiritual water users are custodians of our rivers, fountains and dams and therefore should be involved as monitors of our water. We also advocate that spiritual water users, like other citizens of South Africa, should have the right to access clean water for their spiritual practice" ([4] p. 5). As Samson Mokoena put it, "South African policy doesn't see religion as a water management practice, and I think that's where it fails. It talks about mining, industry, agriculture, but not about culture, tradition and religion" (VEJA mentorship meeting, 2015).

The water system of the Vaal River, which supplies the water needs of households and industries in Gauteng, has been devastated by human economic practices, with profound effects for the millions of people who live in the Vaal Triangle. The spiritual healers and African Christian churches explicitly honour the river as a home of the ancestors. They consider humans to be visitors who should treat their hosts' home with respect. Their interactions with the river are fundamentally non-destructive, and their religious practices are geared towards nurturing human well-being and build connections to community life that help people deal with difficulty. Thandiwe Ngcanga points out that African churches are places where women go to receive and offer emotional support [4].

While the Vaal's spiritual water users cause negligible environmental damage, the damage caused to them by pollution is more than physical, it extends to the psychological and spiritual. Patricia Mdluli, a traditional healer on the Changing Practice course in the Mpumalanga Water Caucus describes how commercial timber plantations upstream have reduced the water flow in the rivers in Bushbuckridge, Mpumalanga so severely that some sacred places are "dead". By this she means that the ancestors have actually departed from their river home, and the river has lost its spiritual value. Yet Patricia still goes to these sacred spaces to honour what they once were. She writes of the loss of a way of being in the world, one that has been eroded and replaced with a way of life that values the natural world solely as an expendable material resource [50]. A VEJA course participant, Samson Mokoena, wrote about how spiritual water issues are affected by broader issues of land ownership in South Africa – having limited access to the river, and often confined to the more precarious parts, to places where people have been washed away and drowned [4].

Mduduzi Tshabalala and Thandiwe Ngcanga write about how the Vaal spiritual water users are suspicious of government bodies like the catchment management forums and shy away from researchers, viewing them as people who have come to steal their knowledge (as has indeed happened in the past). There is much suspicion, and past actions of researchers and governments towards communities have broken down trust [4].

In the first stages of their change project, the VEJA activist-researchers immersed themselves in the river's spiritual practices by attending churches' ceremonies and spending time with

sangomas and spiritual healers. They acknowledged these experiences as valuable forms of epistemic justice (the value of one's knowledge being heard) [51] and brought these perspectives to the Changing Practice course. The facilitators in turn acknowledged the validity of a spiritual way of engaging with the river ecosystem (Documented in the minutes of Changing Practice module 2, February 2015) (Figure 16).

Figure 36: African church members engaged in spiritual water practice   Photo ©Thandiwe Ngcanga

Although the VEJA participants made the effort to be physically present in African spiritual practices, they realised that the relationship between the knowledge systems of African spirituality and the knowledge systems of water managers would take a long time to bridge. They knew the spiritual water users were not willing to be involved with university research, which

they associated with oppression and knowledge-stealing. To overcome this impasse, VEJA decided to engage with the spiritual practitioners through their formal healer organisations, which are recognised by the government as valuable and significant institutions of knowledge. The healer organisations already had affiliations with the Department of Health and with NGO's supporting people with HIV/AIDS, and were willing to ally with VEJA after the dangers of pollution in the Vaal river were explained to them.

VEJA put their case to the South African Water Caucus (SAWC) and Department of Water and Sanitation (DWS) dialogues. The SAWC and the DWS dialogues were held as part of the WRC-funded action research project. The aim was to feed-back research done by activists, reinitiate regular meetings between the department and civil society groups like the SAWC, and to work with the SAWC on guidelines for the participation of civil society in water governance that were part of the broader WRC research project. At this meeting, Samson Mokoena called the high levels of water pollution in the Vaal system and the lack of enforcement 'a genocide'. Department officials responded by citing the water law and policy which provides a space for all citizens to engage with water governance. The VEJA participants had come prepared for this response, and related incident after incident showing how the policy was failing in practice.

At the same meeting VEJA also made a strong argument that spiritual water users had been excluded. The department officials responded that spiritual water use fell under the category of recreation users, which would make them eligible to attend the water forum meetings. VEJA explained, in turn, that it was not eligibility that excluded people, but more fundamentally the knowledge system on which government policies and laws are based—a knowledge system that sees the river as a resource to be used and not as a sacred space to be honoured. Other Changing Practice participants added their voices about other kinds of exclusion. They spoke of how water knowledge was communicated with cultural bias—in English, and in technical language, via PowerPoint presentations. They also spoke of how large scale industrial and agricultural users dominated and controlled both the decisions and the narrative about water use (SAWC/DWS dialogues, October 2015 and the Forum of Forums workshop [37]).

Some department officials nodded their heads. Most of them came from similar traditions and belonged to an African church, or at least grew up knowing that rivers were the home of the

ancestors. Some younger officials expressed their sadness to hear how policies that they believed in had become distorted in practice. Some even admitted that the department was struggling and their ability to act was limited.

Although this meeting did not lead to any immediate changes, it did regenerate a relationship with DWS that had been broken. A fragile understanding had been built through the passionate expressions of frustration, and a willingness from both parties to hear each other. But much distrust remained. After the meeting, VEJA continued to build their relationship with the traditional healers' institutions.

The traditional healers agreed to join the SAWC and were present at the next SAWC/DWS dialogue meeting (Minutes of SAWC/DWS dialogues, February 2016). They also started attending the local catchment management forums. With their collaboration, VEJA used their change project to draw up a proposal and apply for funding from the Human Rights Commission to continue developing their case. In 2018, both VEJA and traditional healers gave evidence to the Human Rights Commission of Inquiry investigating whether government negligence in industrial regulation non-compliance in the Vaal Triangle could be viewed as a human rights violation. At the date of this writing, January 2019, this inquiry is still ongoing. The VEJA case had raised the plight of the Vaal river to a national level.

The VEJA Change Project and How Cognitive Justice Led to Transformative Action

VEJA's arguments are important lessons about how cognitive justice can work in both learning practice and activist practice. The VEJA activist-researchers identified key issues that needed to be absented if cognitive justice, and thus environmental justice, was to prevail. We now revisit the three dialectic transformative moments of the critical realist epistemological dialectic and describe how these were applied by VEJA to generate their change project.

From 'it is happening' to 'what is happening?'

The Changing Practice course introduced concepts and skills to help activists define the context of their concerns.

From 'what is happening? to 'how can this be?' (absent the absence of an explanation for the problem).

The course guided VEJA's awareness of what was happening by asking how this came to be, in the light of history and context. The facilitators introduced the idea that knowledge systems are relational like ecologies [52] or parliaments [53] and exist in networks. Activists were encouraged to practice the skills of engaging with different forms of knowledge to broaden their understanding. They reviewed all the local knowledge they had gathered and came up with a series of questions for further exploration which they generated through mapping exercises at multiple levels.

From 'how has this come to be?' to 'how can this be transformed?' (absent the absence of action to address the problem).

Through the course, VEJA participants decided to test what could be transformed by presenting their work publicly. The course then introduced skills of how to develop arguments from evidence, how to interrogate relationships, and question whether existing relationships can be strengthened and developed.

VEJA articulated three themes related to cognitive justice in their change project.

How Spiritual Practices Are Affected by the Polluted Rivers

What Is Happening?

For VEJA, this moment was the realisation that the dire water pollution issues in the Vaal were affecting not only people's physical health, but also their spiritual well-being. They realised that treating rivers purely as resources was not a view shared by all people. Through the first cycle of learning, VEJA immersed themselves in the spiritual practices of their community (Samson Mokoena literally so, by taking part in a baptism ritual on the banks of the Vaal river). They came to understand how independent African churches and traditional healers perceived rivers as homes of the ancestors who they could visit for healing and wisdom.

How Can This Be?

To try and answer questions arising from their investigations into their local context, VEJA participants read published research, spoke to organisations and government officials, and looked at websites. Through this process VEJA began to see more clearly how pollution in the Vaal river was affecting the spiritual water users, and how they had been excluded from water governance. Samson linked this exclusion to the vested interests of capitalism and colonialism, the introduction of Christianity, and particularly the role of women in spiritual life. Their reading of a paper by anthropologist Penny Bernard [53] helped them to articulate how African spiritual knowledge is excluded from the river.

How to Transform?

Mduduzi Tshabalala, when asked to reflect on how the change project had developed between the first and second assignments, said that VEJA was becoming more resourceful. "The team is learning how to find more knowledge, how to get advice, and how to approach people. We are also more confident." He gave an example: "We go to present the project itself, maybe let's say to the forums, we have already done the research, we know what we are talking about . . . we have the evidence that the practice exists, and it is not given much acknowledgement." (Interview with Mduduzi Tshabalala, June 2015).

Mduduzi felt the assignment questions that guided the change project helped him. He was also encouraged by the way the group were continually asked to clarify their questions. He said, "I think it is a skill to develop a question and go to talk to somebody about it." (Interview with Mduduzi Tshabalala, June 2015). He expressed how the process had helped him to a greater understanding of African spiritual practice. "I know how important water is for them. So, it becomes more meaningful what we are doing. It is something that is worth it."

VEJA's change project was one of four presented at the Department of Water and Sanitation (DWS) and South African Water Caucuses (SAWC) dialogues. A practical point that VEJA raised was that DWS did not have a way of liaising with spiritual water users. To overcome this, VEJA proactively decided to use the methods of the Changing Practice course to run their own mini-course with spiritual water users and motivate them to become involved. This led to a successful

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request for funding from the Human Rights Commission which they used to deepen their case and present it at the Human Rights Commission hearings. Mduduzi called this presentation 'the most exciting adventure of the research" and wrote "The achieved evidence thus far proves the need to address issues of the spiritual water users as valuable in a democratic and developing society." (Interview with Mduduzi Tshabalala, June 2015).

Relationships have been Broken Down by Past and Current Inequities

What is happening?

VEJA learnt that spiritual practitioners had had bad experiences of researchers taking their knowledge and publishing it without permission, and so were suspicious of researchers. Traditional healers were also suspicious of government officials who they saw as having abandoned a spiritual morality in relation to rivers.

Having participated in catchment forums, VEJA did not have the same suspicions of government, but they too struggled to engage with DWS officials. Consultation and contact between government and civil society had been deteriorating over recent years. The SAWC used to have regular meetings with the minister of Water and Sanitation (then the Ministry of Water Affairs). This no longer happened, which was partly why the Environmental Monitoring Group had asked the WRC to explore and support civil society monitoring of the National Water Resource Strategy 2.

How can this be?

In Mduduzi's first assignment, he quotes a sangoma as saying, "I believe that my practice has nothing to do with business or anything else but cultural fulfilment. The bureaucracy will never teach us the right customs of doing or practising our culture or tradition, which is why we have our own traditional schools." (Mduduzi Tshabalala's first assignment, 2014). Traditional healers were disturbed by how industries are allowed to operate in ways that damage water. As one traditional healer said to Mduduzi, "Yes, we are aware of these users [industrial polluters], doing all the wrong things and taking the water and doing whatever they are doing with it. These people must be taught the proper ways of interacting with the natural resource, because once

one enters into the premises of the holy waters they must know that they are also visitors there and therefore must respect the owners [the ancestors], they must know all the proper ways of interacting. And there will be a time whereby the owners of the resources will be angry, and things may turn into a catastrophe." (VEJA pre-course assignment, 2014).

How to transform?

VEJA found that working with organised groups of spiritual healers and religious leaders was more fruitful and less secretive than working with individual healers. This was because the healers felt protected by their organisation, which gave them a sense of collective power. For their part the healer organisations were very interested in working with VEJA and already had relationships with the Department of Health. They quickly understood the link between health and polluted water.

VEJA found interactions with government officials and government-engaged consultants to be much more difficult. This was mainly because policy and law consider the river a resource, and so a complete negation of the spiritual users' perspective. VEJA had to develop a strategy of how to work in such inaccessible government environments. Samson explains it as "participating on our own terms where we develop our own agenda within their agenda" (Module 1 minutes, September 2014).

VEJA teams now meet before they go to a formal meeting like a catchment management forum. They decide on their own agenda, regardless of the official stated agenda. They decide what information they want to get out of the meeting and identify their objectives for attending the meeting. I witnessed how this worked with the SAWC coordinating committee of which Samson is a member, and which adopts the same strategy. Before a meeting with the DWS, they discuss their experiences of the previous meetings and what was achieved, if anything. Then, they decide on a joint strategy for the coming meeting regardless of the official agenda. This does not mean that they disrupt the meeting, but they know in advance what they want to get from it.

VEJA's communication with individual government officials in charge of the Vaal river system was equally difficult. Mduduzi's strategy was to attend meetings where he knew municipal managers would be and seek them out during tea breaks to express his ideas and glean information. VEJA's

strategy was to build alliances where possible but not to compromise in their stand that the current situation in the Vaal was unacceptable. They were unable to transform, at a structural level, the contradictions that made it difficult to engage with government officials, but they were able to navigate this because of their understanding of why government departments were difficult to engage with.

Women Do Not Have the Same Freedoms as Men

What is happening?

Gender dynamics surfaced unexpectedly during the research phase of VEJA's change project when Thandiwe experienced a painful encounter with sexual harassment. It happened when a man who was supposed take her to interview a pastor instead took her to an isolated area where, as Thandiwe put it, "he started his funny business".

How can this be?

Thandiwe's statement was a turning point for the group and facilitators. Among other things her experience made the group realise that being female could limit someone's ability to do research on her own. Women in the group started talking about how men often spoke for them. Samson, in his change project, noted significant gender differences in the African churches—that they were always led by men, and that women had to practice at a different part of the river. At the same time, he noticed, the majority of traditional healers were women.

How to transform?

VEJA's work on gender became a catalyst for the SAWC to better monitor the silent issue of gender in the caucus. SAWC set up a facilitated gender dialogue with its coordinating committee, which encouraged members to tell their own experiences of gender dynamics. Women expressed how they felt men spoke for them at SAWC meetings and how men and women were treated differently when they presented ideas. They mentioned how men held meetings by themselves without inviting women to participate. Both men and women reflected on the strength of their mothers and the power of women who had cared for them when growing up.

The dialogue led to a working document on gender being developed for the SAWC, and a principle on gender equality being added to the SAWC principles. It was acknowledged that this was only a first step, that there was still much resistance to talk about gender issues and the deeply entrenched attitudes to women in South African society. There was a call to think further about how gender and race discrimination are linked to class structures in capitalism [8], and also to environmental degradation.

Possibilities for Transformative Social Action Catalysed by the VEJA Change Project

The VEJA change project catalysed transformative capacity in the Changing Practice course itself, as well as within the social movement and beyond. This section is a more detailed description of the third moment of transformation – from 'how has this come to be?' to 'how can this be transformed?' It addresses our agentive power in the world.

Catalysed Agency at the Four Dimensions of Being

Using Bhaskar's four dimensions of being, VEJA's change project narrative could be called an interweaving of agency and alienation from agency. To explain this with an example: It is common for Changing Practice course participants to be people who have low self-confidence, having been educated in a system that does not acknowledge that their cultural knowledge has any value at all. In Bhaskar's terms, what then needs to be absented is the inability to hear the value of spiritual practice, cultural knowledge and non-normative ways of being by the education system as a whole. For the facilitator, this means drawing on theories that explain why we can and should value spiritual and indigenous forms of knowledge.

Bhaskar shows that not conflating epistemology and ontology enables us to explore real mechanisms in multiple knowledge forms [45]. So, for example, the act of valuing the environment as being more than a resource for consumption is a condition for developing empathy for a polluted river, which in turn is a condition for environmental action. By accepting such epistemic relativism we can understand that the value expressed as 'spiritual practice' has meaning for the relationship with a river for all of us, whether or not we are religious or African

To understand this, let us look at the process of absenting whatever inhibited transformative agency in the VEJA change project.

What Did We Absent at the Level of Material Interaction with the World through the Changing Practice Course and the VEJA Change Project?

Through the Changing Practice course and VEJA's change project we understood that knowledge is not a commodity which can be passed from one person to another, but rather a vibrant expression of being that emerges out of our connection with ourselves, with one other, with our institutions and with the living world. The Changing Practice course was developed in a university context where spiritual knowledge was not primary at all, unless perhaps when it was an object of study. But, as Bhaskar experienced when he began to explore spirituality in his work, drawing on spiritual knowledge in such a context is taboo, because it is not associated with empirical evidence. Nevertheless, Bhaskar argues, the underlying mechanism of faith is an" awe-inspiring awareness of the interconnectedness of all things and associated with creativity" ([38] p. 341). This is not very different from values held by many environmental educators, which are currently re-emerging in the academic world as 'complexity thinking' or 'systems thinking.' Spiritual traditions reach their explanations not by conjecture, but by intense observations of human nature, noting patterns, structures, or mechanisms to explain events ([38] p. 343).

For us facilitators, our educational experience in school and university had taught to be wary or hesitant about spiritual knowledge. We now had to take this same hesitancy and absent it from the educational space of the Changing Practice course. It was a salutary lesson in how silencing one perspective of the natural world led to the dominance of another perspective, one that saw that world as nothing more than a material resource. VEJA used their change project to insist that the knowledge of traditional healers and other spiritual practitioners be allowed to surface from its suppression by colonialism and Christianity (VEJA mentorship session, February, 2016). Both facilitators and participants welcomed indigenous spiritual knowledge into the educational process.

On a personal level, the VEJA case challenged me to be more open about 'unscientific' knowledge systems that influence my work, among them my Buddhist practice, my reading of mythology, my interest in consciousness, my socialist values, insights from science fiction and the voice of my

body moving. Taryn Pereira, another facilitator on the course, has spoken about how the work of the Changing Practice participants has changed the way she sees rivers and nature as a whole. She now finds it difficult in her professional work to call a river a resource, the way she was trained to as an environmental scientist. These examples also highlight how absenting the absence of other forms OF knowledge at the level of material interaction with nature lead to changes at the level of the embodied personality and a willingness to engage in scholarship and education as an activist practice.

What Did We Absent at the Level of Being in Relation to One Another through the Changing Practice Course and the VEJA Change Project?

Carpenter and Mojab [8] critique critical-educational theory as being locked into abstracted frames of culture that lack grounding in the materiality of the social world. This is counteracted or absented through a materialist analysis and revolutionary praxis that sees dialectics as a way of thinking about social life as relationships which emerge historically in the everyday [8]. For example, integrated water resource management and the constitution of South Africa call for the participation of all stakeholders in the decentralized management of rivers. This is an abstract concept that, as VEJA's case reveals, does not really occur in practice. Government officials speak to the law and the constitution without understanding how historical inequalities around water, combined with the current policy and law, affect people in their daily lives.

The VEJA participants navigated the bureaucracy of government departments by understanding the contradictions between policy and practice, and by being open to engagement while remaining clear in their intentions. They understood the historical nature of water governance relationships and how knowledge could become extracted from context. They understood that any relationship to knowledge requires ethical positioning and an expansive view of what it means to be human. They motivated us as facilitators to be willing to hear painful realities, open up to the historical and political reasons for contradictions, and assist participants in building these arguments into their change projects.

Through their well-articulated change project, VEJA was able to catalyse important alliances both with the formal traditional healer associations and with officials within the Department of Water and Sanitation. Although the DWS did not respond adequately as an institution, individuals within

the department were touched by the evidence that was presented to them. It connected them to the African heritage which lay beneath their roles as civil servants. The evidence-based stories of the change projects enabled this.

What Did We Absent at the Level of Structure through the Changing Practice Course and the VEJA Change Project?

Neither VEJA nor the Changing Practice facilitators can claim we made any significant change in policy or even any difference to the ongoing devastation of the Vaal River, which is still the most polluted ecosystem in the country. Such massive changes can only be made through multiple networks of resistance and well-coordinated political action over long periods of time. We were however able to focus on one of the factors that inhibit such changes, namely professional institutions.

Professional institutions find it hard to engage meaningfully with activists or see their knowledge as valuable. As facilitators educated in these same institutions, we are continually attempting to encourage universities and well-resourced NGOs to reach out to participants. While some individuals in some institutions have collaborated enthusiastically with activists, for the most part, these institutions have viewed activists and community members as liabilities, people to be 'trained' or 'educated', or simply not related to at all. Where there has been participation, it has been mostly tokenistic, designed by researchers or government officials who see civil society activists as countable physical bodies who are expected to be present and participate without any compensation while professionals receive salaries for their participation.

One of the difficult moments for us as facilitators was witnessing how NGOs and other professional institutions only took activists' work seriously once they saw their work in a form recognisable to them as valuable, i.e., publications. The Changing Practice courses publish change project case booklets at the end of each course, and it was often only after seeing such publications that these institutions took notice—sometimes after many months of difficult work of trying to set up relationships with them [53]. If activists had published their work in their own language, or as a praise song, or as a drama, these forms would most likely not have had the same effect.

The publishing of the change project booklets was simultaneously a moment of great pride and of much sadness. Or perhaps it was a lesson in cognitive justice, or in this case, injustice. The response was a forceful reminder of how professional institutions judge knowledge to be valuable, despite the fact that the transdisciplinary research and practice currently in vogue in these institutions calls for an engagement with multiple knowledge systems—multiple, both in the sense of knowledge being drawn from different academic disciplines, as well as knowledge generated outside institutions.

This experience is an example of how the value supposedly given to 'other knowledges' tends to remain at the level of abstract theory. The reasons for this abstraction are explained by Carpenter and Mojab ([3] p. 27), who point out that innovative approaches and methodologies theorise "notions of social change and social justice" in a way that obscures the history and practices behind these notions. It is only when professional institutions are able to find tools to address "the real, contradictory social relations of exploitation and violence that are present in everyday life" ([8] p. 29) that we are likely to see a breaking down of the commodification and colonisation of knowledge. One such tool is the praxis of cognitive justice underscored by critical realism.

VEJA's change project affected the structure of the Changing Practice course in two significant ways:

(a) As facilitators we became more sensitive to different knowledge systems, both through the way we interacted with participants and in the way we reflected on our own practice. Participants were emboldened by the way their own knowledge was given centre stage, and this developed trust and confidence between us. It did not remove historical inequalities, but it did allow us to find a different way of being and working together.

(b) Thandiwe's brave confrontation with the experience of sexual harassment made us realise that, as activist-researchers and educator-activists, we needed to address head-on the relations between men and women. This led to serious discussions on gender with the South African Water Caucus, which resulted in gender equality being added to the SAWC principles and a working document being produced on gender and water. It also led to our decision to introduce gender dialogues into all follow-up Changing Practice courses.

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What Is Catalysed by Changes at the Level of the Embodied Personality?

Speaking for myself, understanding knowledges as living systems existing in collective networks of beings, enhanced my confidence in the path I was walking. Often, in a university environment, I feel half-human, my body and spirit left at the door as I sit in a lecture hall or at a conference. The Changing Practice course participants, generous with their understanding of what it means to be knowing and caring beings in the world, encouraged me to challenge my limited view of education and gave me confidence to reside in a heartfelt space of vulnerability and care as an educator. The increase in my confidence to acknowledge the spiritual and local knowledge of the participants also led to an increase in their confidence to challenge me, as they witnessed how their ideas were changing my practice as an educator.

The VEJA change project enabled us to reassess relationships between participants and facilitators. One of the participants became a mentor on the next Changing Practice course and continues to champion space for indigenous knowledge practices. For myself, a learner in this space as much as anyone else, I was being asked to see a river as a spiritual being, and to reconsider my whole environmentalist training. Are we managers and governors of a resource, or co-inhabitors with it, along with the other rivers of the earth? Emboldened by African spirituality, I found the strength to ask myself what rivers can teach me before I presume to teach others about rivers.

Conclusions

VEJA's research showed how environmental and social justice is integrally linked to cognitive justice. It showed that the knowledge held within African spirituality provides a way of relating to a river as a living system central to a community's well-being. This is not new. Anthropologists, sociologists, poets, deep ecologists, eco-feminists, and environmentalists have described the intimate relationships that indigenous people have with nature. The difference for us was that VEJA brought this knowledge to the fore through radically absenting the absences of civil society participation in their own context, and drawing on their everyday attempts to bring about a change to the devastated landscape that they live in. They insisted on a process of honouring spiritual practices as an important reason for fighting for a cleaner river. They argued convincingly that African spiritual knowledge has something significant to offer water

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governance. Their work went to the very core of how rivers are valued and which voices get included or excluded as a result. They exposed the way in which current water governance and water policy in South Africa embraces a technicist view that inhibits us from knowing that rivers, and the whole living environment, are integral to our being alive in the world. Their arguments demand that we get to the root cause of our environmental crisis. Their ability to do this was enabled through their participation in the Changing Practice course and by prioritizing activists concerns as the hub of learning.

Using a critical realist epistemological dialectic [40,43] (with a strong focus on the historical and material [8]), and viewing the VEJA change project as transformative social action, we can clearly see its value and the transformational capacity that this approach enabled. It is both a catalyst for transformational change within VEJA's context, and at the same time a catalyst for learning praxis for future change projects and future Changing Practice courses. It showed how transformative learning as cognitive justice could be made possible by situating the learning process within the historical and material realities of the participants and facilitators, taking in the differences and inequalities of their education, knowledge and learning [3]. The concept of learning together, which is so central to social learning, was actualized through a careful engagement with the generative concept of cognitive justice. Therefore, I would argue that paying attention to cognitive justice as learning praxis facilitates and supports the transgressive labour that activists engage in. It is care work that otherwise tends to go unrecognized and undervalued [22,23].

The facilitators, who had iteratively designed the course process to respond to contextually embedded emerging contradictions, went through their own social learning experience. The adoption of an overt emancipatory pedagogy, shared with participants and in response to their work, helped us to work with the generative concept of cognitive justice.

In conclusion, I return to the two questions raised by Jickling and Wals [7] when considering whether education is transformative: "What kind of education are we speaking of?" and "For what purpose?" Engaging with these two questions is an ongoing reflexive praxis which generates knowledge for participants within their own communities while also generating knowledge about how we learn. Seeing this happen in real time, and being able to reflect and adapt to it, was made possible by viewing the whole process of learning as anchored in the

historical and material [3,40,43] contexts, with all its contradictory social and environmental relations. This is what led us to engage in cognitive justice issues which expanded both facilitators' and participants' understanding of environmental issues and learning practices.

The flexible yet rigorous combination of approaches allowed us to weave what was coming out of the change projects back into the course without side-stepping or avoiding issues as they arose. Nobody objected that gender violence or the politics of knowledge were not directly relevant to environmental learning, and the more we engaged with these core issues, the more we realized how they were interwoven with the environmental problems we faced. Ultimately the Changing Practice course is itself a change project with the aim of learning about learning as an environmental activist practice. If the purpose of education is to approach knowledge as living systems, as collective networks in relation to the self, each other, and the planet, it can be done.

Conflicts of Interest:

The authors declare no conflict of interest.

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Article 4: Imperfect educator-activists: the praxis of cognitively just learning

By Jane Burt

Abstract

> We live in capitalism. Its power seems inescapable. So did the divine right of kings. Any human power can be resisted and changed by human beings.
>
> (Le Guin, 2014)

This paper reflects on three Changing Practice courses for South African environmental activists. It uses the critical realist dialectic to reveal mechanisms that are vital for the practice of cognitively just learning (Bhaskar, 2008b; Norrie, 2010), a process that includes, but extends beyond, conversations between knowledges (de Sousa Santos, 2016; Visvanathan, 2005). As course facilitators, we had to prioritise the participants' experience of educational injustice as well as their experience of environmental injustice. These experiences of an unjust society needed to be openly acknowledged, then actively absented from the physical and emotional learning space, before there could be a possibility of cognitively just environmental learning. Commitment to this process is the essential agentive work (which Bhaskar refers to as the dialectic of self -reflexivity (Price, 2016b) of the educator-activist. I argue that to enable cognitive justice, we need to continually work at removing the historical pain from our educational systems in order for environmental and social justice to flourish. We do this by centring and foregrounding participants' learning experience, which also becomes a starting point for enhancing the facilitators' own reflexive agency.

Figure 37: Thabang Ngcozela

This paper is dedicated to Thabang Ngcozela who passed away on the 12th May around the time I started writing it. Thabang was a facilitator on the second Changing Practice course for environmental activists. May we find the love and humanity that you worked for all your life Thabang.

Introduction

Introducing the Changing Practice course

The Changing Practice course has been run three times since 2012, in partnership with non-governmental organisations (NGOs) and within different social movement networks (Burt et al., 2014; Wilson et al., 2016; Burt et al., 2018). It is based on the transformative learning practice developed through multiple research projects by the Environmental Learning Research Centre at Rhodes University, South Africa (Lotz-Sisitka, 2009; Lotz-Sisitka et al., 2012). Each Changing Practice course is focused around a 'change project' of the participants' own choosing. This change project is usually an issue arising in their day-to-day work that needs strengthening or developing – something that needs to be refined or transformed in order to bring about change. Normally we run four to five three-day workshops approximately two months apart, with the change project, as it develops, being analyzed collectively at each workshop. The facilitation process is inquiry-based[8] and the role of the educator is to 'absent' (to use Bhaskar's term) whatever inhibits learning and action (Scott & Bhaskar, 2015). After each workshop, participants return to their change project with greater focus. With mentor support, they carry out an assignment in the change project based on what has been learnt during the workshop. The findings of the assignment are brought back to the next workshop for analysis, discussion and modification, leading to the next iteration, and a new assignment.

The content for the workshop dialogues is generated by the facilitators, based on what is emerging from the change projects. For these three courses, the content always included

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[8] Inquiry-based learning is a form of learning that guides people to learn by questioning. Rather than a predefined curriculum, it uses a process of 'thinking about thinking, doubting about doubting, learning about learning and knowing about knowing" (Colvin et al., 2014, 763). It is a process of learning that is about learning, which unearths core mechanisms and possible contradictions in theory and practice. In the Changing Practice course we used it to guide participants through carefully articulated questions based on the social learning approach of Arjen Wals (Wals, 2010) at the same time underpinned and strengthened through the critical realist dialectic (Bhaskar, 2008b). McGarry articulates this process as using 'questions as a force to direct a constant iterative process through cycles of practice-based inquiry' (McGarry, 2013) which in our case is the activists' change projects.

strengthening knowledge networks and building the social movement as part of the practice of environmental activists.

By the end of the course many changes had taken place, including strengthening the activist network, strengthening engagement with government and other civil society organisations, as well as increased confidence and commitment among the participants and the facilitators. The final product of the course was a change project booklet documenting the activists' experience of the course, and the progress of their change projects.

Cognitive justice as a solidarity and mobilizing concept

During the second of the Changing Practice courses we introduced the concept of cognitive justice (Visvanathan, 2005). It became a solidarity and mobilising concept that both participants and educators could relate to and collectively work towards (Burt & Wilson, 2017). De Sousa Santos argues that social justice is impossible without cognitive justice (de Sousa Santos, 2004, 8).

A thorough overview of the concept of cognitive justice has been done elsewhere (Burt et al., 2018). In introducing cognitive justice to the participants, we drew on three main points from the cognitive justice literature that have been of value for forging solidarity and mobilization. They can be summarized as:

1. Cognitive justice means having your own knowledge recognized, as well as expecting you to listen and respond to the knowledge of others (Fricker, 2003).
2. Cognitive justice means that all communities (not only scientific communities) can solve problems. We therefore reject a view of knowledge that excludes whole sectors of the population as knowledge creators (Visvanathan, 2005; Visvanathan, 2006).
3. Cognitive justice rejects a hegemonic vision of the future and embraces an ethical and inclusive future as being essential for knowing and being in the world (Bhaskar et al., 2018; de Sousa Santos, 2006).

As facilitators and participants worked together, we came to realize that cognitive justice is not possible without also considering what inhibits it (Carpenter & Mojab, 2017). What we discovered in the Changing Practice course is that we have to address the intersectional issues of inequality such as sexism, racism, and capitalism as they emerge in the educational process (Carpenter & Mojab, 2017). The aim of addressing environmental injustice becomes polluted if we do not also engage with the intersection of environmental justice, cognitive justice and social justice. The indignity of poverty, racism and gender violence and the slow violence of environmental injustice often arise together (Nixon, 2011).

The purpose of this article

The work of praxis is close to the heart, and is often bound to its context. In a recent article, Rob O'Donoghue, reviewing critical education as applied in environmental education in South Africa, notes how critical education was reduced to a formula of 'plan, act, reflect' and so became decoupled from its roots in process theory. He argues for a situated process of reflexive transgression in the face of climate change, and warns that a process like this is not easily understood without a "grasp of contextual and cultural/historical complexities that we are normally blind to in modern education" (O'Donoghue, 2018, 16).

In this article I revisit the three Changing Practice courses conducted with environmental activist, and retrospectively trace the reflexive practice of the facilitators that led to changes in our educational approach, making it more cognitively just. I do this by drawing on the critical realist dialectic which articulates a series of transformative moments towards absenting whatever inhibits cognitively-just learning (Bhaskar, 2008b). I then pick three such transformative moments that point to the importance of directly engaging with race, colonialism, post-apartheid wounds of race and colonialism and gender inequality in environmental education. All three moments of learning about learning demonstrate the historical-material embeddedness of learning practice (Carpenter & Mojab, 2017). They also demonstrate that educating is a labour of care, at multiple levels, to absent or remove whatever inhibits learning – in particular, learning towards mobilizing for a better world, rather than only for individual social mobility (von Kotze et al., 2016).

How this article was written

I drew on biographical and autobiographical accounts of the Changing Practice facilitators and mentors, reports and the change project booklets of the Changing Practice participants across all three Changing Practice courses (2012–2014; 2014–2016; 2016–2018). Once the article was written it was sent to every facilitator and mentor of the Changing Practice courses for comment. These comments were then incorporated into the article.

The critical realist dialectic

> Said as simply as possible, dialectics is a way of thinking about social life as relationships in which social phenomenon are not abstracted, separated or fragmented from one another (Ollman, 2003). For us, to say that something is understood dialectically is to see it through the lens of its historical emergence, to see the way in which it appears in daily life, and to seek out an explanation of why it appears the way it does in order to understand the essence of the contradictions that form social phenomena.
>
> <div align="right">- Sara Carpenter & Shahrzad Mojab (2017, 30)</div>

As the above quote makes clear, a contradiction will inevitably emerge (often felt by participants before educators) from the daily practice of education. It is then a matter of seeking out an explanation in order to understand how the contradiction emerged in practice, and so potentially transform it.

Bhaskar was an economist turned philosopher who had become unhappy with the way in which Western philosophy seemed to block insight into the inequality in the world (Bhaskar 2008a). He began to critique what he saw as a fundamental error in Western philosophy, namely that it ignores gaps and absence and the negative, and he offered an alternative ontological position to both positivism and postmodernism, (Bhaskar, 2016). For Bhaskar absence is a valuable diagnostic tool, because looking for what is absent often gives insight into how the situation can change (Bhaskar, 2016, 120). He presented a version of the dialectic as taking place through four transformative movements. These start with noticing when there is a theory-practice contradiction or, to put it differently, when what is considered normal and everyday action does not produce the response or effect we expect in the world.

Bhaskar's epistemological dialectic process can be described as 'leaps' of transformative praxis (Hartwig, 2007). The four leaps can be articulated as the following questions[9]:

First leap: What is happening?

The first leap is the leap of reflexive or analytical thought to an awareness that something has become accepted as normal or everyday (Hartwig, 2007, 176). This leap can be prompted by some external experience that causes us to question the way the world is. It is a feeling that up to now we have lived passively, as though life was happening to us, and we now understand that this need not be so. 'Living the everyday life' is thus transformed into 're-looking at life'

Second leap: How has this come to be?

The second leap is a leap of dialectic reasoning in response to the emergence of practice-theory inconsistencies or contradictions (Hartwig, 2007, 176). Dialectic reasoning works towards negating and thus transforming any situation which is incongruent due to its contradictions, or because our theory or worldview enables these contradictions. The second transformative leap is a dialectical response in which these inconsistencies are articulated (Hartwig, 2007, 176). Thus the second leap happens when 're-looking at life' is transformed into 'troubling life'. We leap from asking 'what is happening?' to 'how has this come to be?'

Third leap: How can we transform?

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[9] One of the tasks of an educator-activist is to ensure that philosophical and scholarly work can be made accessible without reducing its complexity. Most academics write for other academics, but an educator-activist sees it as his/her duty to write for and communicate with both academics and activists. I resist the idea that complex ideas can only be communicated in a form inaccessible to ordinary citizens. For this reason, I have articulated and re-cast the four transformative leaps of the critical realist dialectic into a series of questions that anyone can engage with (Burt et al., 2018). These questions were used as themes in some of the Changing Practice modules and helped both participants and facilitators to focus our minds on the intentions of our inquiry. This method worked to reveal the process of dialectic reasoning to participants and facilitators in a way that could be applied to almost any situation or inquiry.

The third leap is a creative and generative process in which we speculate on what is required to resolve the contradictions we have identified. The dialectical reflection here is likely to be in an expansive form, generating a new or more complete theory and practice. It is a leap from 'troubling life' to 'expanding life', from asking 'how has this come to be?' to 'how can this transform?'

Fourth leap: How do we embody transformative praxis?

The fourth leap is the leap of re-appropriation (Hartwig, 2007, 177). This is where the integrated theory, which has now transformed earlier contradictions, is applied in the world. Bhaskar calls it 'a real negation or absenting of contradictions in practice' (Hartwig, 2007, 177). The result of transformative negation can now be realized, and a new level of ontological structure can be described by new or additional theory. It is the leap from 'expanding life' to 'living everyday within an expanding life'. We leap from 'how can this transform?' to 'how do we embody transformative praxis?'

These four dialectical questions do not unfold in a neat sequence. They often collide or weave together. Sometimes it is only in retrospect (Bhaskar et al., 2018) that we realize how they led to a significant moment of transformational praxis.

I will now look at three examples from the Changing Practice courses of learning moments which demonstrate the four leaps described. These example all show how learning praxis can begin to absent whatever inhibits cognitively-just learning.

Rivers of environmental learning are polluted by past and present inequities (Changing Practice course 2012–2014)

Educator-activists: Jane Burt, Robert Berold,Tim Wigley, Heila Lotz-Sisitka, Nina Rivers, Treve Jenkin, Monde Ntshudu, Mindy Stanford, Mangaliso Buzani, and Ewald Kruger

The first Changing Practice course emerged out of a Water Research Commission (WRC) project on knowledge flow to rural communities (Burt & Berold, 2012). The impulse for this had emerged from a discomfort with the way in which valuable knowledge was not available to rural communities, but tended to be dammed up in knowledge institutions – one of these institutions being the WRC itself, which regularly publishes research reports, some of which are specifically 'user-friendly'.

One of the things we wanted to do in the course was to develop a knowledge product that would allow a conversation between professional knowledge institutions and the knowledge(s) held by rural communities, which we hoped would lead, over time, for knowledge institutions to align their work, or at least their communication, more clearly with vulnerable communities. For various reasons we did not get to try out this process. We turned instead to the question of how we could support communities to engage with professional knowledge with their direct needs and questions. We couched this aim within the WRC research project as an investigation into the mediation of knowledge for water management practices.   Part of the aim was for participants to write their own booklets to share their knowledge, targeted at readers from their own and nearby communities (Burt et al., 2014). The research included using a contextually and historically embedded question-based approach to knowledge generation and then designing a course which we would pilot with local practitioners (NGO and community) working in the Eastern Cape, South Africa (Rivers, 2014; Burt et al., 2014). The course was fully funded and carried a short course accreditation from Rhodes University. Our learning approach and pedagogy drew on Arjen Wals's (2010) social learning approach and cultural historical activity theory (CHAT) (Mukute, 2010), in particular, expansive learning (Engestrom, 2007). Both these learning approaches are designed to be transformative.

However, when listening (not only listening with our bodies but also through reflection with participants and facilitators), we came to realise that participants were struggling with the process. There were at least two reasons for this: participants' past experience of education had been violent and discriminatory, and the historical symbols of this past oppression were still materially present in the context of the course. To give two examples:

Example 1, Language choice: We encouraged all the course participants to write their change project assignments in their own language, and were surprised that no one wanted to (by the end of the course two participants eventually did, in fact). They explained that they preferred English because it was a sign of being educated and their final booklet would be regarded as more valuable, even though it would limit access for some rural people. Nyamnjoh argues that all education systems in Africa are still victims of colonialism with education being "a compulsion for Africans to 'lighten their darkness' both physically and metaphorically" (Nyamnjoh, 2012, 1). The course participants' explanation of their wish to write in English showed to us how the language in which knowledge is presented is seen to give it authority. We had thought, mistakenly, that the opportunity to write in the mother tongue would absent this inequality. The participants knew better because of their experience of how their knowledge was treated by knowledge elites, so they politely rejected our token act of inclusivity. For our part we did not grasp the depth at which the language of the coloniser had appropriated people's ability to generate acceptable knowledge. Our willingness to accept work in languages other than English did not weigh as much as the structural power of English as a language of authority.

A facilitator on the second Changing Practice course pointed out later that this rejection by participants was also an expression of 'professional' knowledge holders not being able to understand or respond to languages other than English. Therefore the aim of bringing different knowledges into dialogue stumbles over an inadequacy of the privileged – with the burden of this inadequacy being carried by the oppressed. The participants knew this through experience, hence their rejection of our suggestion was logical (T. Pereira, email communication, 4th September 2019).

Example 2, The wounds of apartheid education: One of the participants was a middle-aged Xhosa woman who was well respected in her community. She was an activist working for the Border Rural Committee, a well-established NGO, involved in trying to restore a local dam that had fallen into disrepair, and trying to encourage tourism so as to generate jobs. In my meetings with her, she slowly began to express how anxious she was at having to study again and how it brought back memories of her schooldays in apartheid Bantu Education.

Writing about education under colonialism, Nelson Maldonado-Torres explains, "Educators do not even realize the extent to which their students may find themselves breathless as they sit in their classes and listen to their lectures and the comments of their peers, as they go to libraries and find symbols that over-glorify certain bodies and societies and dehumanize others, and as they walk through campus to constantly be reminded of their place by the symbols of white power and control, now presented in liberal forms as representatives of pure excellence" (Maldonado-Torres, 2016, 5). Transferring these insights to South Africa, all of us in education have to acknowledge the pain of state education that had been internalised by all South Africans during apartheid. Our educational system was highly unequal, and in some cases authoritarian and violent. Inequalities and violence remain in our education system even today, but as an older woman, she would have had a much more traumatic experience.

In our facilitator reflection meetings, we spoke about what was unfolding in the course – how the participants were held back by their past experience of education as well as their current experience of the racially divided educational institution in which the course was situated. However the fact that participants felt free to speak to us about their experiences showed that the course was allowing some change already.

Treve Jenkin, a student mentor on the course, spoke about his relationship with this same participant: "She expressed anxiety to me before and during the course, as part of my mentorship was to encourage and work with her to find her own pace and comfort. Her anxiety was because of many things: the 'prestige' of Rhodes University, the whiteness of Rhodes, the bigness of Grahamstown, the English, a fear of failure, uncertainty of what was unknown and unfamiliar, and the normal anxiety of an older woman who has been out of school a long time and is now 'going back' into that environment of 'having to learn and pass' ". (T. Jenkin, email correspondence, 7th September 2019). Treve appreciated the culture we tried to cultivate in the course: "The course experience was illuminating, in a way that forces you to reflect more intimately with your privilege and the enormity of the educational challenge. This kind of thing was definitely an emotional journey for me over a period of time, but this course stood out as quite a positive experience." (T. Jenkin, email correspondence, 7th September 2019).

The contradictions: Even though we were trying to offer a more collaborative experience of learning, participants were finding it impossible to let go of their feelings of fear and anxiety. Their educational experiences had in most cases been punitive – being judged not good enough (Dei, 2010). Their education had characterised (or caricatured) African values, language and knowledge to be considered as inferior beliefs, superstitions, and intuitions, while presenting western knowledge and the English language as truthful and universal (Zembylas, 2017, 402).

Some of the facilitators and mentors had been introduced to the critical environmental education approaches that considered the environment as the foundation of social, political and economic human systems (O'Donoghue, 1987). But current environmental education practice, although theoretically strong and critically engaged, had not yet considered the psychological effects of these wounds on participants' consciousness (Dei, 2010).

As mentioned, we drew in the course on cultural-historical activity theory (CHAT) (Engestrom 2000). Although CHAT helped us prioritise the importance of mediation, it did not help us grasp the mechanisms of the colonial educational system that had affected how participants engaged with the course. Carpenter and Mojab (2017) argue that CHAT erases both social relations and history because it de-historicizes its Vygotskian and Marxist roots. CHAT does not, for example, acknowledge that within capitalism, labour is treated as a commodity. Its assumptions do not allow the complexity of social relations to become visible. Mukute's (2010) study addresses this bias in CHAT. He describes CHAT as functioning with an implicit rather than explicit ontology. He draws on dialectical critical realism to enable an understanding of historical and structural causal mechanisms in agricultural issues (Mukute, 2010, 190).

We realized that if the course was to be transformative, we would need to consider how to absent the remnants of colonial educational experience that was still present in the university setting, and its psychological effects on people's minds and bodies (Darder, 2018). At the same time, we as facilitators had to continually absent our own ignorance, classism and racism – dig it out, examine it, acknowledge it, feel the shame of it, and work at undoing the blind spots that prevented us from fully seeing what the participants on our course were experiencing. It meant critiquing the professional education systems in which we were located. But, as Victor Munnik

put it, that an even deeper movement is necessary: "My feeling is that there is one more step beyond "undoing" and "seeing", which has to do with "joining the other side" and actively working against the racism, shifting the attention from ourselves and changing the bigger situation" (V. Munnik, email communication, 27th August 2018).

Clearly we needed to broaden our perspective on what it meant to facilitate environmental learning in post-apartheid South Africa. Unknowingly, we had triggered feelings of fear and inadequacy for our participants, feelings that, we understood later, the mention of education so often evokes for black South Africans (Darder, 2018). While we had learned from our lecturers that environmental practices were historically, economically and culturally situated, we had not considered how the educational process itself was also full of such bias. All this had to be acknowledged and absorbed if we were to design educational processes that were healing, made people feel safe, and enabled both facilitators and participants to move closer together. Environmental learning has to be an activist practice (Carpenter & Mojab, 2017). We have no choice but to free ourselves, both facilitators and participants, from past injustices, including the injustices done to our planet. This calls for a different politics, and a different education, which democratizes learning and knowledge (Lave, 2012).

As we reflected on this, we began to understand that the social learning theories we were using were not sufficient to lead transformation. What these theories offered us – most of them from the global North – were innovative models of learning as action. What they did not include were the contextual realities of education in the global South, or how to engage with education that took into account the experience of dominance and inequality in the education of our participants.

Changing the learning process and the design of the course

The facilitators' reflections on the participants' experience of the Changing Practice course led to some significant changes in the way we ran the next course.

The second Changing Practice course was also funded by the WRC. It was situated within a broader research aim of understanding and enhancing the role of civil society in monitoring the National Water Resource Strategy (NWRS)(DWS, 2013), which is the official strategy for water management in South Africa and is supposed to be renewed every five years after consultation with a broad range of stakeholders including civil society.

Our Changing Practice course was to be held with members of the South African Water Caucus (SAWC) an environmental movement established prior to the Conference of the Parties (COP) held in Johannesburg in 2002. SAWC represented grassroots activist organisations in South Africa, and had been significantly involved in the first drafting of the NWRS. Participation by civil society was more difficult in the second NWRS in 2014, but the SAWC managed to ensure that certain key strategies were included (Environmental Monitoring Group, 2014).

The purpose of the WRC research project was to strengthen the role of civil society, mainly represented by the SAWC, to monitor the NWRS2, using four key concerns of the SAWC (Pereira, 2013). The Environmental Monitoring Group (EMG), an important role-player in the SAWC, was to manage this research project. The WRC requested that EMG establish a partnership with the Environmental Learning Research Centre (ELRC) at Rhodes University, based on the findings of the previous WRC study (Burt et al., 2014). They wanted Prof Heila Lotz-Sisitka to be associated with the project because of the learning research expertise the ELRC could bring to transformative learning (Lotz-Sisitka 2004; Lotz-Sisitka 2009; Lotz-Sisitka et al. 2012). We proposed a Changing Practice course to test the benefits of a social learning approach to build the capacity of civil society. This context, especially with the social movement dimension of EMG and SAWC, opened up a number of opportunities that radically changed how the Changing Practice course was situated. My own role was to co-design and lead the Changing Practice course.

A priority for EMG was to be in solidarity with those who experienced injustice. This was particularly so for the Water and Climate change programme within EMG that was embedded in the SAWC. This programme was led by Jessica Wilson, a veteran of environmental justice, and Thabang Ngcozela, a socialist activist, both of them also prominent leaders in the SAWC. EMG

organized a 'research team meeting' where EMG staff, activists from the SAWC, and academics from Rhodes University, gathered to collaboratively design the research programme. Their approach encouraged me, as the facilitator of the Changing Practice course, to return to my roots in popular education (Freire, 2005; Darder, 2014) in which I had some years of experience. Because of the collaborative nature of the research, I did not feel I needed to be confined only to what the university valued in environmental education, and felt I could incorporate more radical ideas that were coming out of these conversations (Darder, 2012; Darder, 2018).

I could see the course was going to be different. It was not held at Rhodes University but in different venues across the country, usually close to where the activists were working – informal settlements, polluted industrial landscapes, coal mines and illegal coal mine dumps, rural landscapes devastated by timber plantations. More importantly, the course was being run within a broader social movement, which meant that learning would extend into the social movement – any knowledge the participants generated would have a home within the social movement. This linked to my earlier research into knowledge flow which concluded that knowledge should have a clear home if it is to be mediated into action (Burt & Berold, 2012). For this second Changing Practice course the home was not only a professional institution – the research was to be shared between the SAWC, EMG, Rhodes University and the WRC.

Given the social movement context, we decided not to ask each individual participant to propose a change project. Instead, participants arrived at the course with a collective change project from their own network or organization (each organization was part of the SAWC). Although some aspects of the course had to be assessed individually to respond to the needs of university accreditation, overall the learning work would be collaborative.

Normally community activist work only reaches research environments because professional researchers 'research the activists' and then publish their findings. In this second Changing Practice course, the community activists' own research coming out of their change projects was going to be part of the primary research for the WRC project. They authored their own work (Lusithi & Manelisi, 2016; Ndlhovu et al., 2016; Tshabalala et al., 2016), and their names appeared on the final research report. December Ndlhovu, one of the activists, described the

process as 'research for the people, by the people'. He argued that no-one knew his context better than he did, therefore he should be the one to research it. All he needed was the guidance on how to make the dialectic practice visible, so he could build his research skills. Ndlhovu later became a facilitator in other Changing Practices courses and now writes updates on all change projects once the courses have been completed.

As mentioned earlier, the collaborative research partnership also freed me from my own constraints. I had for some time been feeling that within the university I was unable to engage in difficult conversations about race, gender violence, and other contradictions in the academy. These feelings were no doubt linked to my own sense of inadequacy and inability to find my voice, but they were real nonetheless, probably related to my own early experiences of schooling as violent, inhibiting, judgmental, and oppressive.

I now felt free to return to my roots in community-based education and reintroduce the pedagogy of Freire (Freire, 2005), Boal (Boal, 1979) and Biko (Biko, 1978) into the research process. The caring and reflexive way in which the water and climate team worked made me feel safe to experiment and unearth my original experiences with Theatre of the Oppressed, the arts, and critical pedagogy, and Paulo Freire. Once popular in environmental education, Freirean thinking had diminished in importance. Prof Rob O'Donoghue explains this diminishing as caused by the advancement of post-apartheid liberal humanism and the soft paternalism of "for the other" that led to a sanitizing of action research for learner empowerment (O'Donoghue, 2018, 6). O'Donoghue's observations resonated with my earlier experiences of participatory action research in the rural Eastern Cape. I felt that action research had lost its emancipatory edge, and I saw in EMG a continual attempt to retain this edge, not least because EMG was part of the social justice movement in South Africa.

The opportunity to radicalize the Changing Practice course allowed me to introduce the pedagogy of critical realism to the participants directly, and explore with them what it meant for education to be an act against oppression and as a transformative force. It allowed me as a facilitator to situate our experiences of education within apartheid, to point out how education

can be used to oppress, as with the Bantu education system, but also how the violence of education can be resisted, as with the Soweto protests against compulsory learning in Afrikaans.

We took this a step further by exploring our own personal experiences of learning and how they had been experienced as enabling or constraining. In the third version of the Changing Practice course (2016–2018) we were to deepen this exploration by looking at how we learned from different knowledge systems, not only formal education. We did this by examining how we have come to be the people we are today and what has guided, influenced and informed us.

The link with the SAWC made it possible for me to have an organizational base in which I could align myself in solidarity with activists and their political aspirations. This was a significant change from the soft paternalism of 'for the other' that I had experienced while I had worked for a development research project in the rural Eastern Cape. At the time I had resisted it but did not understand why.

It was also during this second Changing Practice course that I started exploring the concept of cognitive justice (Visvanathan, 2005), particularly the emphasis on knowledge as contextually and historically situated within environmental and cultural spaces (Burt & Wilson, 2017; Burt & Lusithi, 2017). Cognitive justice gave us the language to talk about what we were all experiencing and feeling. It helped facilitators to be more responsive to what was emerging from the participants' experiences.

To strike the earth is to strike a woman, to strike a woman is to strike the earth Changing Practice course (2014–2016)

Educator-activists: Jane Burt, Jessica Wilson, Thabang Ngcozela ,Taryn Pereira, Victor Munnik

Even since I was an undergraduate student, I always felt that my experiences as a woman were silenced in the educational space. My personal experiences of gender violence were regarded as psychological problems, to be dealt with personally. But no matter how much money and time I spent on therapy, experiences of gender violence did not stop – I just got better at dealing with

them. Gender activism at my university became a political force only around 2016, when I was no longer on campus. I felt great solidarity with the women who were taking a stand, and expressed my experience of gender violence in a blog (Burt, 2016).

When I studied environmental learning as a graduate student, the closest we got to engaging with the gendered nature of the world was through a brief reading of deep ecology, and the work of Vandana Shiva (1988) and activist women in India. While it was a great comfort for me to read their insights, none of my lecturers applied them to the situation of women or LGBTQ+ scholars in South Africa. The gendered nature of education was not spoken about as something linked to environmental violence. It was only when I came into contact with critical realism that I saw how to bring this connection into environmental learning (Burt, 2012).

The challenge to engage with gender inequality in a Changing Practice course came from one of the participants. It arose in the second Changing Practice course when we had already worked on acknowledging how the educational process could not be separated from the historical and material conditions of society (Carpenter & Mojab, 2017). One of the young woman researchers had been sexually assaulted while researching her change project. When she presented her assignment, she spoke of this experience. In line with our educational approach, this was something that we collectively had to face up to immediately, as it was a precondition for social and environmental injustice to be perpetuated.

Ecofeminism has been a vigorous movement for many years (Salleh, 2017), challenging the gender violence that distorts learning, and revealing gender parallels in how humans dominate the earth. It has not, however, been much debated within South African environmental learning. Carpenter and Mojab (2017) argue that there is no form of labour, including the labour of educating, that is not gendered, and that gender inequality, along with race inequality, are part and parcel of capitalism. Likewise, the labour of women as care workers is devalued in the capitalist system (Walters, 2015).

Educators prepare the young for engaging in the market, either as slaves of masters or as masters of slaves, to use Bhaskar's (2016) terminology. In this context, violence against women is

the status quo, depending on the position women occupy in the master-slave hierarchy. To question this, we have to question what education is for, and to question the value of all human labour, including the unpaid labour called women's work. Ecofeminism asserts that women undertake the major share of the world's work without pay,[10] much of this work relying on caring and connectedness. Salleh (2017) argues that green movements tend to underplay the differences and inequalities between the sexes by focusing on the broader aim of being in solidarity with the earth (Salleh calls this being 'light green'[11]). Like the earth's resources, women's work under capitalism is given no economic value and largely invisible.

The course facilitators had for some time been discussing gender concerns among themselves. Gender inequality was a glaring contradiction, present in the social movements that both the facilitators and participants were part of. It was something that was frequently spoken about in superficial terms (for example, ensuring there were equal numbers of women and men in workshops or on committees), but not dealt with deeply, honestly, reflexively.

The account of this young woman who had been abused became what Freire (2005) calls a generative moment. She named the reality of gender violence, and the silence of gender violence was absented. It was now up to us to work out how to engage about it. While I was listening, I could feel the shame and fear arising within me in response to what she was saying. I stood up at that moment and spoke my response, as well as speaking of my own past experiences. The discussion was intense and serious. We talked about how to make sure women are safe as change agents, and the practical choices this involved, like not being alone when it meeting with men. We also discussed how practical arrangements could not by themselves solve the problem. Women should not need men's protection from men, no women should fear going

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[10] Salleh argues that women are effectively the proletariat if we consider that 65% of the world's labour is undertaken by women for 5% of its total pay (Salleh, 2017).

[11] Salleh suggests that in response to the environmental movements she calls 'light green', women activists have three choices: join the green-left compromise; build on the power base of liberal feminism; or collaborate with indigenous movements. She argues that the last is the choice that should be given priority (Salleh, 2017, 35).

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to speak to anyone alone. The absenting of gender inequality became inseparable from emancipation and environmental justice.

> Wherever women acted against ecological destruction or/and the threat of atomic annihilation, they immediately became aware of the connection between patriarchal violence against women, other people and nature, and that in defying this patriarchy we are loyal to future generations and to life and this planet itself. We have a deep and particular understanding of this both through our natures and our experience as women (Mies & Shiva 1993, 14).

The challenge in the second Changing Practice course was how to acknowledge and include the fact that activism and education are situated within a history of both race inequality and gender inequality. The young woman participant's brave account of her experience was enough to sensitize most participants to gender issues within their change projects. However, we needed to do more. It was an opportunity to keep gender on the agenda and to speak more freely about the overall gendered context we were working in.

Most of the participants in the course were men. All the leaders of the change projects were men, the leaders of the social movement were also mainly men. The men on the course tended to group together in the evenings and have long discussions about socialism and politics, without including the three women on the course. We were now able to verbalize these observations. We began a gender dialogue with the social movement's coordinating committee (Environmental Monitoring Group, 2016). This led later to the social movement writing a position paper on gender and adding gender equality to their guiding principles.

Carpenter and Mojab (2017) argue that in the absence of revolutionary consciousness and praxis, capitalism and imperialism will continue to reproduce themselves. An educational practice towards a revolutionary consciousness means a theoretical and historical engagement with how capitalism manifests in the world and in educational practices, how it is constituted, expressed and experienced through other contradictions of gender, race, sexuality, nationality and ethnicity (Carpenter & Mojab, 2017)[12]. We needed to talk about the contradictions of gender violence and

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[12] I am writing this in Bristol, England, in the middle of a heat wave. The mainstream media here (and even the media in the global South) are reporting on the heat in Europe and the effect it is having on people's lives. The experiences of white bodies

gender inequality, about how the historical effects of apartheid and colonialism had reproduced the gender relations that sat in the room with us and between us. We needed to include in our discussion our relationship with the earth, which is often expressed in the same conceptual framework as gender relationships – women considered weaker than men, yet dangerously wild and natural, men self-appointed as the controllers or protectors of natural wildness.

Environmental justice is more than protecting the earth, it is being in solidarity with the earth. The conservation narrative has led the environmental movement into a patriarchal position of 'protecting the wild' rather than changing the destructive forces that require us to protect nature. These forces secure wealth and power, and consider it their right to pillage the earth[13]. Elvis Komane, a participant in the Changing Practice course, calls this 'ecological theft' (E. Komane, pers comm. 9th May 2018).

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from the global North are all over the news, whereas the experiences of black bodies in the global South are hard to find – as if heat suffering is expected in Africa. Far away from my home country, I feel my heart aching. This morning I was on the phone to a friend and comrade in South Africa who had started a project to support women to grow permaculture gardens and increase their income. These women are supporting families on an income that is 50% below the poverty line. They started this project with no money and no salary but have slowly brought in donations. They have managed to secure fencing for their gardens. The next step is shade cloth because their vegetables will not survive the summer heat without it. This is hand to mouth survival. Stories like theirs are whispered, almost silenced, in the media noise of the global North.

[13] In South Africa, (and most countries in the world) conservation movements have aligned themselves with capital. The preservationist view is 'an idealistic and romantic view of nature from the position of a spectator, often a rich spectator' (Neumann, 1996). If one is only a spectator of nature, and nature is a commodity to be enjoyed through relaxation. sports. or game drives, then it is not surprising that you would want to preserve nature. If your relation with nature is one of living with, surviving with, being damaged by nature, there is more likely to be an understanding of the integral connection between you human existence and nature. For a spectator, nature as a commodity can be sold to the highest bidder or deals can be made for its protection. In South Africa, conservation clubs were used by South African businessmen to bypass apartheid sanctions and networks internationally (Holmes, 2012, 194). International business deals for protective parks often increase the value of property, a good example being the billion rand 'wildlife economy' in the South African lowveld. Business, in partnership with conservation, can steer interests away from controversial environmental issues like toxic waste dumps created by industry (Holmes, 2012, 194), or land redistribution. The wildlife economy sometimes has to comply with international certifications, but these do not cover the big issues of environmental destruction – unequal global economic food systems, close to slavery farm labour, land grabs by mining companies, the disenfranchisement of women from land, and the loss of indigenous communities' knowledge and practices.

Changes in learning process and design based on this learning moment

In the next (third) Changing Practice course we explicitly included gender dialogues, starting with conversations about what it meant to be a woman or a man in South Africa and the expectations that came with this. Right from the start differences were clear: not only between what it was like to be a man or a woman but also what it was like to be a white woman and a black woman.

The dialogues were hard. Sometimes we felt we had crossed a line that was too painful to come back from. Surprisingly, this was not the case. By going to these hurt spaces, the group moved closer together, with a deeper respect for one another. As a collective, we were able to be present with each other and accepting of our divergent views, including even those men who held hurtful patriarchal ideas about women.

One particular man was able, through this dialogue, to see the deep hurt and pain his views caused to women in the group. He had a strong commitment to helping people. He had not considered that his views on women's roles was hurtful: he thought it was simply cultural. During the final reflection on the course, with our external partners present, he spoke about how the gender dialogues had changed the way he worked with women in the movement, as well as his relationship with his wife.

To stabilize and deepen the gender dialogues we followed up with body work exercises and image theatre (Boal, 1979), in which participants acted out the roles society expected from them. These exercises revealed the world of women as inward-turning and sorrowful, while the world of men was one of being navigators and travellers, who at the same time felt they had no choice about this role. The violence of migrant labour surfaced in the way it had forced men out of domestic life. One comment from the men's image theatre was "Women expect men to be violent, we are expected to have a gun, we are expected to have more than one woman, we are expected to leave home and find work."[14]

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[14] Olifants catchment Changing Practice course, Minutes of Module 2, October 2017

What was immediately clear to all of us was that both women and men had been forced to exist in separate spaces, not only due to cultural norms but also due to apartheid and colonial practices. Both yearn for what the other has. Women also want to travel, be leaders, be out in the world beyond the home, while men also want to be able to be vulnerable, to love, to hold children, to be a father. In a significant symbolic transformation after the body work, some of the men felt they had been given permission to take part in caring for a small baby whose mother was one of the participants. Before that, only the other women on the course had helped to care for this child, soothe him and play with him. The next day four other men began to play this role too. This was a living example of practising how we could be together differently while working at changing systemic violence in the world (Mayo, 2008; Dei, 2010).

Figure 38: Changing Practice participants mothering the youngest participant.

The way in which relationships were aired and emphasized during the course created an opportunity for all of us to be vulnerable and safe. We were aware that we had created a different way of speaking amongst ourselves. It was a safe place for men to practice being nurturing, knowing that they would not face ridicule. It also changed the language we used when we spoke of the environment. When we did a contemplative practice about the earth, one woman spoke of how the soil had been traumatised and torn apart by humans, and how this saddened her.

A research article was written after the course, inspired by the work of one of the change projects, about how the popular education work of the activist-participants was a form of care work, a labour of love for their community and the earth. Their work is dangerous, unpaid, and often unseen, yet without it so many communities would be much worse off as we move into the unknown world of climate change (Burt et al., 2020).

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The confluence of knowledges is shallow and silted beyond the Changing Practice network

Educator-activists: Jane Burt, Stella Horgan, December Ndlhovu, Thabo Lusithi, Taryn Pereira, Jessica Wilson, Victor Munnik

> How can I enter into dialogue if I start from the premise that naming the world is the task of an elite and that the presence of the people in history is a sign of deterioration, thus, to be avoided? How can I dialogue if I am closed to – and even offended by – the contribution of others? How can I dialogue if I am afraid of being displaced, the mere possibility causing me torment and weakness? Self-sufficiency is incompatible with dialogue. Men and women who lack humility (or have lost it) cannot come to the people, cannot be their partners in naming the world. Someone who cannot acknowledge him (her)self to be as mortal as everyone else still has a long way to go before (s)he can reach the point of encounter. At the point of encounter there are neither utter ignoramuses nor perfect sages; there are only people who are attempting, together, to learn more than they now know.
>
> - Paulo Freire (2005, 88)

The learning praxis we had nurtured through the Changing Practice courses returned us to our earlier dilemmas on the politics of knowledge – questions of whose knowledge counts and how it is valued. The courses also raised the same questions about access to knowledge. In this, as in all the Changing Practice courses, participants returned from their change project 'working away' assignments relating how hard it was to access knowledge from professional institutions. This echoed the alienation that we had ourselves experienced when we developed the learning resource on rainwater harvesting (Burt et al., 2014).

Some years before the Changing Practice courses started, when I was working with catchment forum members at the Kat River, we ran up against an underlying contradiction. Research knowledge on water and the water law was in the public domain but the catchment forum (CMF) members were unable to access it without access to professional networks.

It was because of this difficulty with knowledge flows that the first Changing Practice course had focused on knowledge networks. This theme remained through all the Changing Practice courses, but as time went on, we learnt more. Following connections of knowledge to people and institutions, we began to understand how knowledge flowed, or got blocked, along class lines, gender lines, racial lines. If we drew a map of knowledge flow, we would have found it aligned with maps that show patterns of inequality, of North-South divides, rural-urban divides, right down to the divided geographies of South African towns. Knowledge flows easily between the houses, businesses and mobile phones of the affluent and the educated, but this flow dries up before it reaches most township or rural residents.

Bodies such as CMFs, designed to be spaces for civil society to engage in water governance, were also inaccessible, because they were dominated by large scale users, or because the language and culture of their communications was inaccessible to community activists, or because the venues for meetings were inaccessible to poorer communities (Munnik et al., 2017).

I now outline three examples of the material manifestations of cognitive justice and how activist-researchers (participants on the Changing Practice course) and educator-activists worked with these in the course and change projects.

Example 1: The closing down of civil society spaces

Thabo Lusithi and Manelisi James (Lusithi & James, 2016) were working in Dunoon, a township outside Cape Town with high levels of unemployment, poverty and population density. Households in Dunoon were unhappy with the water management devices being installed by the City of Cape Town to restrict and monitor people's water. There were many problems with these devices. They often leaked, so that the small daily quota of water being made available would be gone in a matter of minutes, leaving households without water. They were sometimes installed without proper permission – residents were supposed to agree on their installation.

The activists' first engagements with the community of Dunoon went well. But when they tried to hold a workshop in the community, hardly anyone came. Manelisi, who was from Dunoon himself, found this very odd. They investigated, and found out that low attendance of their

workshop had been due to pressure from their local councillor. A few years earlier, Manelisi had run an advice office that challenged the councillor to do something about a badly constructed and non-functional clinic. In the beginning, the councillor had ignored the community's requests to deal with the clinic, but then, with the advice office support, the community mobilized, and the issues at the clinic were dealt with. After this defeat, the councillor threatened the community with repercussions if they were seen associating with the advice office again.

Thabo was experiencing the same kind of intimidation in Khayelitsha. The two activists found that most community groups and activists in and around Cape Town were experiencing similar obstructions. In Kraaifontein people told them they needed to get endorsement from a local political heavyweight just to hold a meeting.

For their final workshop in the Changing Practice course, participants travelled to the Eastern Cape. Here they found another kind of intimidation. A local activist working for the organization 'Water for Dignity' had spent years trying to get the municipality to repair the burst drains that had been leaking raw sewage into the local river. One day the activist, who lived in a shack, had a visit from the local councillor. The councillor held in his hand a list of people who had registered for free government RDP housing. He told the activist that because of the trouble he had been causing with his constant phone calls and visits to the municipality, his name would be crossed off the list. The councillor then took out a pen and crossed his name off the list in front of him (Burt & Lusithi, 2017).

The third Changing Practice course was held with participants from mining communities. One of the successes of the social movements representing mining-affected communities at this time had been to legally challenge the new Mining Charter. This had resulted in a court ruling which compelled mining companies to consult communities whenever prospecting or purchasing of mining land was being contemplated (Thobejane & Sekome, 2018). After this, consultation processes took place. The consultations looked inclusive, but actually excluded the specific activists who had initiated the court challenges. Mining companies, and the government departments supporting them, met in municipality buildings. The public could attend only by

invitation, and municipal officials were delegated by government to represent local communities. Such delegation was hugely problematic, given the high levels of corruption in municipalities.

When activists managed get into one meeting, they were insulted by the minister of Minerals and Mining. To one young woman activist on the Changing Practice course, who asked him a question, the minister responded, "I don't have to talk to you, you are uneducated. Go get yourself an education." The activist recorded the minister's outburst on her cellphone/mobile and shared the recording with activist networks. This was a brave but dangerous move for her, as activists who take on the mining industry are constantly at risk[15].

The nurturing of knowledge networks is a challenge to centralized political power. As with apartheid strategies before them, current government response is usually to intimidate and reject community networks. Learning how to strategize, resist, stay safe and navigate bullying political forces became a core generative theme of the Changing Practice course.

Example two: VEJA's experience of the participation of spiritual water users being excluded from water governance.

Activists from the Vaal Environmental Justice Alliance (VEJA) came to the second Changing Practice course from the Vaal triangle, one of the most polluted places in South Africa. Part of their change project was to investigate the processes available to them for public participation (Tshabalala et al., 2016). They argued that Catchment Management Forums (CMFs) were in effect inaccessible to local communities, because they were held in English, and used complex technical documents and Power-point presentations. The dominant 'scientific' and management view of water governance, that rivers were resources, is not a view shared by all people. VEJA member Samson Mokoena always argued that it was not water that needed to be managed, it was people's use of and attitude to water (Tshabalala et al., 2016).

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[15] Reported at mentorship meeting, Burgersfort, May 2018

Besides these technical barriers, VEJA found there was no place in CMF participation for those who used the Vaal river as a site for African spiritual practices. Accessing the river, and experiences of being submerged in the river, are part of indigenous knowledge. For both traditional healers (sangomas) and independent African Christian churches, the river is the sacred home of ancestors. The river holds the history and values of African people and is integral to spiritual practice. VEJA's change project made the case that African knowledge challenges the economic resource discourse embedded in the language and practice of water management.

For VEJA, a defining moment was the realization that the dire water pollution issues of the Vaal river were affecting not only people's physical health but also their spiritual well-being. Through the VEJA change project, the course facilitators and participants were exposed to the way spiritual water users were excluded from water governance because the categories of those entitled to participate in water governance did not include people who see the river as a living spiritual source. VEJA linked this exclusion to the vested interests of capitalism, colonialism, and Christianity. They extended this understanding to how women's knowledge is excluded, as many of the leaders in traditional healing are women who keep alive a relational knowledge of human and river living together with respect.

As with the example above, this issue was brought into the Changing Practice course as a core generative theme. It entered into our exploration of how the intersectionality of gender, race and exclusion of knowledges leads to environmental injustice.

Example 3: Experiences with professional knowledge networks

Going to university campuses to do research for their change projects did not feel comfortable for many course participants. Several said that on arriving at a university they immediately stood out as not belonging. The university security guards would ask them who they were, and their second language English often caused administrative staff to treat them with suspicion. When they tried to phone academic staff they would seldom get through, and their emails were often not answered. If they did get to speak with a professional researcher, they faced the problem of their call being cut short because of a lack of airtime. Some lived in areas where mobile signals were weak, and so had to travel to the nearest town just to make a phone call.

Activist-researchers had other technical and financial difficulties. When research documents could be sourced online, they could not always afford mobile phone data bundles to download them – downloading a document could use up an entire month's data budget. Their inexpensive phones could not read pdf formats. At times when they did manage to download a document, it was in a format and style that was inaccessible.

Conferences where research was shared were in practice closed to most activists because, without the funding of a university system, they could not afford the accommodation or travel for these gatherings even when they were invited. Thus, we had the bizarre situation of principles of community engagement being articulated in conferences and written about in academic journals, without a single member of a community being present.

Just like the properties of the affluent, the spaces of institutional knowledge are protected by invisible electric fences and boundaries. They are not ecologies of knowledge (de Sousa Santos, 2016) but monocultures carefully fertilised with resources and funding, and irrigated for optimum growth. Even with the rising popularity of trans-disciplinarity as a response to complex problems, most institutional knowledge remains dammed in well-curated enclosures, where knowledge is produced, packaged, professionalized, and readied for delivery (Visvanathan, 2005). Professional knowledge structures are not always aligned with the values and politics of emancipatory action, even if individual authors sometimes are. This can lead to different priorities between different actors within the same network. It is distressing to see that those experiencing the brunt of the violence of environmental injustice are the least likely to be invited to give their input into environmental action planning.

Academic researchers, while highly specialized in their disciplines, are often quite naïve politically, and therefore do not know how to navigate the social complexities of social movements or local community politics – or are not even aware of their lack of understanding. Professional researchers often complain about the disorganized nature of social movements with no consideration for what it takes for people to get together to meet when the lack the resources that professionals have at their fingertips. There is also a reluctance (from natural scientists in particular) to get involved in

political or social processes, as this is seen as counter to the 'neutrality' of their science. (T. Pereira, email correspondence, 4th September 2019). And finally, when community activists do get consulted by researchers, it is common for their knowledge to be presented out of context, or authored solely by the academics who consulted them.

Technological and management solutions are almost always politically embedded. VEJA's Samson Mokoena explains, "We have lost our confidence because our ways of knowing have had to take to the dark. We want to bring them into the open again. Maybe one day they will walk in the light." (Mentorship meeting, August 2016). VEJA's research, along with other change projects from the Changing Practice course, show how the loss of traditional African knowledge and values causes damage to the environment and psychological damage to people, and makes easier the appropriation of ecology as a commodity.

Changes in learning process and design

When professional research institutions have good intentions, or even good policies, to reduce poverty and inequality, they are not often materially able to decouple their practices entirely from a capitalist consciousness (Carpenter & Mojab, 2017). Even when an action is 'pro-poor', it may not always be with the poor. Victor Munnik warns us, however, that "this inability is still a choice, albeit a choice that is very constrained. It takes hard work, especially logistics, which is often regarded as beneath academics, to make sure community people attend workshops e.g. I am currently organising a workshop on community research where half the participants are community members. It is not easy, it is working against the stream, but it can be done. Don't let them/us off the hook, it is a choice to swim with the mainstream." (V. Munnik, email correspondence, 27th August 2019).

The Changing Practice process has taught us that the structural change needed to absent this knowledge divide will not happen automatically. It needs hard work and commitment of individuals within institutions to question the structures that bind them. Anna James, a fellow PhD student, describes this as 'capitalism made up of relations'. She explains, " If you follow the material connections of water (be these pipes, the ecology of a wetland or how a woman in a

rural area fetches water) it will expose how capitalism is constituted and experienced." (A. James, pers. comm,13 July 2019).

There have been attempts in the academy to give renewed attention the confluences where knowledges meet, most notably via transdisciplinary approaches. Our experience in the Changing Practice courses is that approaches to transdisciplinarity tend to distil human experience away from social and historical processes, and so make invisible the contradictions that emerge from these processes. This is particularly so for the contradictions that arise from transdisciplinary researchers working with activists, communities and civil society in the midst of knowledge elitism, gender inequality and political forces. If emerging research communities looking for participation within civil society are not willing to anticipate and face the contradictions that emerge in their research practice, there is little doubt that these inequalities will be reproduced in some form. Learning to work with relations between different knowledges also means relating with one another and with the structures in which knowledges are seeded, composted and harvested (Scott & Bhaskar, 2015).

Seed, compost, harvest: a metaphor for cognitive justice work

The Changing Practice course emerged from environmental education in South Africa, which has become a field for activists, professional educators and researchers to practice learning, scholarship, and solidarity in a context of neoliberal forces, segregation, social violence, environmental violence, and inequality.

The seeds of cognitively just learning: The Changing Practice course requires us as facilitators to accept as a starting point the actual experiences that participants bring to the course. It is not easy to free ourselves from the inequality embedded in ourselves and the structures we work in. Inequalities in our system cannot be removed by one individual. It is a long-term commitment.

The experiences of Changing Practice participants brought to the fore contradictions in environmental learning practice. What led us to transform was not theories of their experience nor theories of learning – it was listening to their experience of the educational process, noticing

the contradictions in theory and practice, questioning our own learning practice and our relations with participants, absenting what it was within our learning approach that inhibited cognitive justice, and introducing all these issues into the course. It was significant that we were able to do this collaboratively with an NGO that was part of the social movement while retaining our association with the university to strengthen our theoretical base and share our learning.

The compost of cognitive justice learning: Our learning praxis demands no less than solidarity with activists. If we lose this focus, we find ourselves subjected to the demands of institutions that are compromised in political, racial and gender contradictions. This does not mean that scientists or academics should all leave their institutions and become activists. But it does mean we should carefully follow and critically analyse the relationships that enable the creation and flow of knowledge. For the facilitators in the Changing Practice course, it has meant using cognitive justice as a living generative concept in our direct experience of learning practice and in the work that we are continually attempting to embody. The path to this is through noticing and nurturing the seeds – the actual experiences of participants. This requires us to continually change the course design and process in order to address cognitive justice issues at multiple scales.

Von Kotze and Walters (2017, 5) state that the process of solidarity requires considerable bravery and "processes of actively constructing, shaping, forging… Forging is used deliberately… forging is intentional, it generates heat and energy, it is a violent process as it means giving something up to create something new, this requires everyone to be vulnerable, to trust, to love, to hope; you need protective clothing to avoid getting burnt." Victor Munnik concurs: "Solidarity requires choices that can be seen as a sacrifice of academic opportunities, to spend time organizing logistics rather than writing papers and attending conferences in the global North." (V.Munnik, pers comm. 27th August 2019).

The Changing Practice course has been able to give activists the tools to challenge what they intuitively felt to be wrong. It has been able to give weight and depth to their feeling that although much institutional environmental knowledge contains valuable information, it also comes with misinformation and half-truths biased in favour of power. Our collective inquiry

began with activists' experiences of environmental injustice, and their experiences of injustice in past encounters with education and professional institutions. Our work with activists brought to the fore how so many of our attempts to absent environmental injustice were gendered, racially loaded, and class-biased. The transparent process of understanding the dialectics of our learning practice, and considering realistic ways of changing it, opened up our learning practice to an authentic engagement with cognitive justice as learning praxis. This moved us forward at many levels, from our personal relations with ourselves to our relation to the material world.

Community activist-researchers (participants of the Changing Practice courses) and educator-activists (facilitators on the Changing Practice courses) may not currently have the power to overcome the structural inequalities of professional knowledge institutions. But they can work at forging relations with these institutions. In the Changing Practice courses, activists worked hard to represent their learning process in case booklets. These were written up in English, in formats that academics and other knowledge professionals would recognise as valid knowledge. This was a courageous act on the part of the activist-writers, because it often meant reaching into spaces where trust had been broken in the past, or engaging with institutions where community activists had not seen as equal, institutions which had in the past misunderstood, appropriated or ignored the local knowledge presented to them.

We worked with the researcher-activists to create an alternative solidarity network of caring participants and facilitators which could forge solidarity across these divides (Burt et al., 2019). We also worked proactively with researcher-activists to understand and analyse why solidarity with professional knowledge institutions continued to be difficult.

Harvesting cognitive justice learning: Cognitive justice has become an important dimension of the Changing Practice course because it strikes at the core of dismantling mis-education, distorted as it was with the attitude of 'pouring knowledge into the empty inadequate student'. The cognitive justice dimension allowed participants to question the education that has been imposed on them, to sift out what is useful to them, and to gain confidence in the knowledge they had already. The Changing Practice process has revealed to us all the vital knowledge that activists

bring to our understanding of cognitive justice, to learn what needs to be absented in the world *and* in the course to enhance a cognitive justice approach.

VEJA commented that what they liked about the Changing Practice course was the facilitators' openness to different kinds of knowledge, including spiritual knowledge and knowledge generated from everyday experience. They liked the way we actively encouraged dialogue around how we know what we know (Tshabalala et al., 2016). They said this gave them confidence in their own process of knowledge generation, which manifested as a strong theoretical and historical position for the value of knowledge systems that see water as a living being.

Care is needed if we are to proceed. For example, in Lusithi and Manelisi's situation, when faced with the closing down of civil society spaces, activists chose not to resist local political power, which could have led to violence. They chose to expose obstructive political forces through analysis. They wrote up their change project and sent it to both the South African Water Caucus and the Department of Water and Sanitation. They avoided confrontation by meeting in geographical locations where they were not known by the local political power figures. Their example demonstrates their skills in relational solidarity (working and acting reflexively with others), transitive solidarity (working to change things so that people are transformed in the process of changing) and creative solidarity (working together to create new ways of being together) (Gaztambide-Fernández, 2012).

Praxis of this kind means being vulnerable, being willing to be imperfectly human, giving up the desire for recognition and praise, and embracing failure when it happens. I often want to be recognized. I want a badge for my service. But when I am surrounded by fellow imperfect beings who are all attempting to learn more than we now know (Freire, 2005, 88), I find that joy is present, and it is more than enough.

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Appendix

The table below summarises the cognitive justice concerns that I and other educators have worked with, over 20 years of transformative environmental learning:

Figure 39: Tracking cognitive justice concerns and responses through the Changing Practice courses

Table 8: Describing the absenting response to each cognitive justice concern

Dates	Cognitive justice concern	Absenting process
1997-2012	Professional knowledge does not flow easily outside professional knowledge institutions and professional knowledge forms.	Start with community activists' context-specific concerns and questions as a guide to engaging with both locally generated knowledge and professional knowledge. The effectiveness of the course is as much about its methodology as its content, in fact the content informs the methodology and vice versa. The course can then create a safe space for learning to be catalysed by the grounded experiences of activist-

		participants. It allows themes emerging from the change projects to be picked up by the researcher-facilitators (who are activists and sympathisers themselves) to research further. They then feedback their understanding – of, for example, policy implications or governance structures – to the course. Thus, the course works at multiple levels: understanding the context, navigating power and institutions of knowledge (which includes learning how to gather evidence, and asking what evidence is), presenting evidence, developing an argument, and how to deliver this argument where it counts.
2012-2014	Learning processes and learning institutions exist within the context of social and historical inequalities and manifest as such.	Adopting an overtly emancipatory focus for the educational process that is generated by facilitators and participants alike. Allowing this approach to respond continually to the concerns that emerge from the practice of environmental activism and the practice of environmental education, while keeping an awareness that this is happening in the context of post-apartheid post-colonial South Africa. It is, in other words, a movement of social learning movements.
2014-2016	Gender inequalities are intertwined with the inequalities enacted on the earth.	Exploring and questioning gender dynamics within the safety of the Changing Practice course at the levels of the personal, the social, social movements, and our relationship with the earth. This exploration can be embodied using image theatre (Boal, 1979), drawing, free writing, sculpture, dialogue and contemplation. It also means rethinking our approach to learning as

		transformative by recognising activist-researcher work as care work, part of the "undervalued labour of women, indigenous people and unemployed communities to safeguard and nurture communities and the earth" (Pellow, 2018, 479). It is important to make this care work visible and argue theoretically and practically for its recognition and value for learning as action. For the (mainly white) facilitators this also means working with our own pain and psychosocial distortions while at the same time becoming a network of support for each other.
2016-2018	Forging solidarity with professional knowledge structures while facing the challenge that professional knowledge institutions place limits on what makes particular knowledge valuable.	This is a twofold labour by activist-researchers with the support of facilitators (educator-activists), to present their reflexive research in a form that professional knowledge producers recognise. It takes significant effort to generate confidence in professional knowledge spaces. Educator-activists use the concept of cognitive justice to argue for why it is vital and valuable to enter into dialogue with activist-researchers. This can be done if one treats knowledge generation as care work rather than as a commodity within the professional knowledge community. (This paper is one such attempt).

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Part 3 : Reflections and future conversations

Figure 40: Facilitators and participants at the end of Module 2 of the Olifants Changing Practice course.

1. Introduction

This final chapter of my PhD thesis has been written as a letter to younger educator-activists who have shown interest in working with the Changing Practice model in the future.

I wrote it as a letter, because it allowed a more informal tone, and because the letter form calls for a response. It is an action that goes beyond critique. A letter is a historical moment of recording but it is not an isolated moment. It is a moment in conversation with others. In this way this letter is an act of critical research in three ways: it is a form of reflexivity; a discussion on emancipatory possibilities generated from the Changing Practice course through a process of attempting to absent that which inhibited cognitively just learning, and an action to act – an attempt to continue acting in the ongoing practice of emancipatory education (Heila Lotz-Sisitka 2015). Besides this, I wanted to avoid the convention of concluding with a set of principles and recommendations but rather to communicate what sensibilities have emerged from this collective scholarship that could be further applied.

This chapter does not include aspects of the course beyond the scope of the thesis. These include the various roles of different facilitators, the management and logistical aspects of the course, the challenges of building a social movement, and the levels of institutional support needed.

I sent the letter to all previous facilitators (eleven people) of the Changing Practice course as well as others who were interested. We had an online dialogue in response to the letter, which I recorded and transcribed. Five people participated and reviewed the transcription before I included it here. This is again an example of the sensibilities of action towards transformative praxis for cognitively just learning.

What was clear from this dialogue was that because educator-activists often find themselves working in stressful contexts with little support, that some form of informal support group would help. This would be a way to share ideas, raise contradictions, and come up with possibilities on how to support environmental justice movements.

Intellectual work is never just intellectual work. One has to listen to evidence in a systematic way and in our work as facilitators the evidence includes all the internal pain, frustration and joy that comes with living in the imperfect and unequal world. At times anger, excitement or sadness have distorted my view. I have needed others to help me understand what lay behind my anger so as to not let it solidify into prejudice. I have needed others to help me distil insights from this process, and point out my blind spots. I thank everyone who has helped me. You have shown me why collaborative research and peer learning is so valuable. You have also taught me the action of transformative praxis so that it goes beyond words on a page and has become an integral part of how I continue to strive to live my life as a collective political project towards environmental and social justice.

2. A letter to future educator-activists

1st–5th December 2019

Bristol, UK

Dear Reuben, Matthew, Anna and fellow educator-activist scholars

I am writing this long letter to you in the hope of starting (and continuing) a conversation between us that can forward all our scholarship. I'm including it in the last section of my PhD thesis on the Changing Practice courses, particularly those courses we organized within social movements. I'm going to first summarize what the thesis is about, and then give you some sense of what it would mean to lead-facilitate a Changing Practice course in the future. I wanted to end the thesis in this open-ended way.

 In a social movement, the Changing Practice process is a collective learning scholarship with the work of a facilitator embedded in a network of relationships and structures. The task is to extend connections in as many meaningful directions as possible, while at the same time making sure that both the facilitation team and the theoretical base of the course are clear and strong. Following that, the facilitators keep these connections open or, if they do close down, understand why. This is the agentive work of the educator-activist. Anyone who makes such a commitment and holds a robust theoretical foundation, will also be contributing to opening the academy for educator-activist work.

Steve Biko wrote: "You are either alive and proud or you are dead, and when you are dead you can't care anymore. And your method of death can itself be a politicising thing." (Biko 1978, 152). I'm not suggesting that we put our lives on the line for environmental justice (although many Global South activists do). But what Biko asks is that we see our lives as part of a broader collective. For my generation, the activist passion we carried in our hearts in the early 1990s became muted by the contradictions we faced at multiple levels. #Feesmustfall revived much of the passion that had been buried by beliefs such as we had reached an end of history (Fukuyama, 1989), and capitalism was the only possible economic system of the future. Boaventura de Sousa

Santos calls the belief that anything lasts forever 'the most oppressive form of thought' (de Sousa Santos, 2006). The belief that one idea is sacred is simply hegemony.

We find ourselves in an interesting time now. Some within the university are dusting off their socialist leanings and reimagining, in new and creative ways. We hear the names of Freire, Gramsci, Fanon, bell hooks, Rosa Luxemburg, Raya Dunayevskaya, Maria Zambrano, Donna Haraway and Olive Schreiner.

What I have learnt through the facilitation of the Changing Practice courses and writing this thesis is that an effective counter to any hegemony of thought, is cognitive justice, in combination with critical realism. I want to structure this letter through three approaches of embodying cognitive justice in environmental learning. I introduce these via the metaphor of three stages of growing food : seeding, composting and caring, and harvesting (here I must pay tribute to Thelma Nkosi and Bernard Ngomane from the Mpumalanga Water Caucus, who developed a change project on growing food as a political act (Nkozi & Ngomane, 2017).

2.2 Seeding: seeding cognitively just learning

Seeding cognitive justice is collecting together all the seeds that we, as Changing Practice facilitators, have been given by previous environmental educators (See Chapter 2). Some of these seeds have been used for a long time in environmental learning and we know them well. Others we have only recently dug out of our seed bank because we forgot about them or because the context was not right for their germination. Then we also have to search for new seeds, because the educational and environmental climate has changed, and the seeds which were once so productive no longer grow so well. Finally, it is not only the seeds, but also ourselves who will grow. Like all caring farmers, we grow from practice and a love for the landscape in which we work.

2.2.1 Putting what matters at the centre

The most vital seed of learning to be centred is what matters to those we invite into a learning space. The Changing Practice course is not based on content as much as on the concerns that

participants bring to the course. This does not mean that we don't care about content: it just means that content is introduced in response to whatever the participants bring in and the generating themes that we get from their initial applications. Our central point of stability is the change process itself, fluid as it is. This flexibility and responsiveness allows the Changing Practice course to bring people together around any theme, campaign or movement.

2.2.1.1 Mobilising around a change project

In the early 1990s the Environmental Education Centre at Rhodes University (now the ELRC), along with the Environmental Education Association of Southern Africa (EEASA), identified a need for a professional development course to help educators deal with environmental issues and risks (Lotz-Sisitka & Raven, 2004). It was designed as an open-entry, open-exit course and became known as a 'work away, work together' model. Its theoretical conception came from the Australian educational theorist Ian Robottom, who argued that adult education in environment and sustainability is most useful when it is designed as a process of deliberation in the learners' own social and historical context (Lotz-Sisitka, 1999).

Central to the 'work away, work together' model (in the way we used it for the Changing Practice course structure) was the 'change project', some issue that each participant was grappling with and wanted to change or transform, in their work or their community. Each individual brought one such issue to the course. In a series of modules, participants worked on their change project issue from different interconnected perspectives (social, environmental, political), and different learning approaches and critical pedagogies (we did not use the word pedagogies in the course). After each module they went back to their change project with a specific task based on what we had learnt about change in the previous module. At the end of the course each individual produced a resource, a document which they could use in their own environmental education context.

2.2.2.2 Collective change projects

The Changing Practice course's contribution to the 'work away, work together' courses for activists is that organisational issues rather than individual issues are addressed. We changed because participants on the course came from different organizations, but all the organizations belonged to the same social movement. This allowed us to set collective organization-wide change projects rather than individual change projects, which brought everyone together in collective learning.

We also wanted to learn how to strengthen organizational as well as individual capacity (Lotz-Sisitka et al. 2014). Organizational capacity is a huge challenge which I don't cover in this thesis and it is something that the facilitators of the Changing Practice course continue to explore together and separately.

2.2.2.3 Change projects and social movement issues

Another contribution from the Changing Practice course is that change projects were linked to broad themes or campaigns within the social movement, thus further enabling collective learning. It also opened up opportunities for professional knowledge producers, like university researchers, to do collaborative work with the activists running the change projects. This was not easy for the researchers, who are used to generating research questions themselves. There is nothing fundamentally wrong about a professional knowledge producer wanting to engage with communities around research questions. In fact, it is important to hear what communities have to say. What makes it complicated is the current and historical inequalities that are in society and that can manifest in the relationship between the professional knowledge producers and communities. These inequalities are hard to speak about and can distort relationships. There are also many power dynamics in communities for example, amongst men and women. The Changing Practice course does not resolve these issues. It offers a way of acknowledging them and working with them as cognitive justice concerns. It also offers a different way for professional knowledge producers to engage with community-based activists and work creatively with the contradictions and emotions that arise.

How do we do this?

The second Changing Practice course was set up to allow activist groups affiliated to the SA Water Caucus (SAWC) to monitor the National Water Resources Strategy (NWRS2) (Wilson et al. 2016). The SAWC had a set of four themes that they had identified as issues/campaigns to focus on for the monitoring.

The third Changing Practice course, the Olifants catchment course, introduced generative themes. This was a little more difficult, because it was done in consultation with staff of the supporting NGO (AWARD) without consultation with activists. However, the SAWC was present in the Olifants catchment and some of its members attended the course. We also held a curriculum design workshop with AWARD, the SAWC and previous participants of the Changing Practice course where the themes were discussed. As we got to know the Olifants catchment civil society network, we did get a clearer picture of social movements in the catchment, most of them committed to resist the encroachment of mining.

2.2.2.4 Situating research in solidarity with change projects

All mainstream institutions are to some extent compromised by market forces, even where there are strong individuals within these institutions who don't like this. All of us who are university-based researchers need to be creative in order not to get entangled in tendencies of knowledge generation towards exclusivity and ownership of its use and flow. By situating his/her research concerns within a social movement from the beginning, the professional researcher can work in solidarity and therefore more effectively with the knowledge generated by the social movements.

I would say we have only once succeeded in collective research flow so far, and that was in the second Changing Practice course that was run in a partnership between the Environmental Monitoring Group (EMG) and the Environmental Learning Research Centre (ELRC), Rhodes University (RU)and even here only partially. In that course the change projects were part of a bigger research project on the role of civil society in monitoring the second national water

resource strategy(NWRS2). All research coming from the change projects fed into and informed ongoing research in the Environmental Monitoring Group (EMG).

We tried to repeat this in the third Changing Practice course, without the same success. We designed the course in such a way that staff of the partner NGO, AWARD, could link to the change projects as core research themes in their overall programme. However, this aim could not be achieved because of constraints set by the donors as well other constraints within the organization. As a result the research in the Changing Practice course was quite isolated from the main body of research work in AWARD. But the change projects did find interested individuals in other NGOs including Benchmarks, SAWC, EMG, WOMIN, the Centre for Environmental Rights, Centre of Applied Legal Services, and Africans Rising. This experience demonstrated to us that being a Changing Practice facilitator does not only mean facilitating learning, it means mobilising and networking with other organizations open to working in this way.

There is an unfortunate tendency for professional research to reduce activist research to data. This is tendency is a common trend the world over. This tendency extends to relationships between global South and global North researchers with global South researchers often viewed as data collectors, while the analysis is done by global North researchers. On the local scale we find the same trend, with communities and activists being viewed as the data-gatherers (even if they are participating) while the professionals are the ones generating the analysis and make meaning of the evidence. There is no reason why activists cannot generate rich and important research.

2.3 Working with networks

The three figures below show how our second and third Changing Practice courses were situated within a network. It takes continual work to keep these networks and relationships alive, but unless you give time to this, they will be partners and networks in name only. They are not always easy to navigate either, as each organization has its own priorities and blind spots.

Figure 21 shows the networked relationship between EMG as the sub grantee of the funds for the second Changing Practice course, in the form an equal relationship between the SAWC, ELRC, Rhodes University and EMG. What we ended up with was not exactly what we wanted, but by giving it visual form we could try to navigate it within our resources and commitments.

The next figure shows the various roles of the people involved to keep the network going, and the logistical support that is needed. Thus behind the concept of networked learning is a set of roles and responsibilities that must be set up and maintained in order to maintain and strengthen the networks. This is unpaid labour, but unless time and attention is given to it, it can fall by the wayside.

USAID: United States Agency of International Development
AWARD: Association of Water and Rural Development
EMG: Environmental Monitoring Group
SAWC: South African Water Caucus
ELRC, RU: Environmental Learning Research Centre, Rhodes University
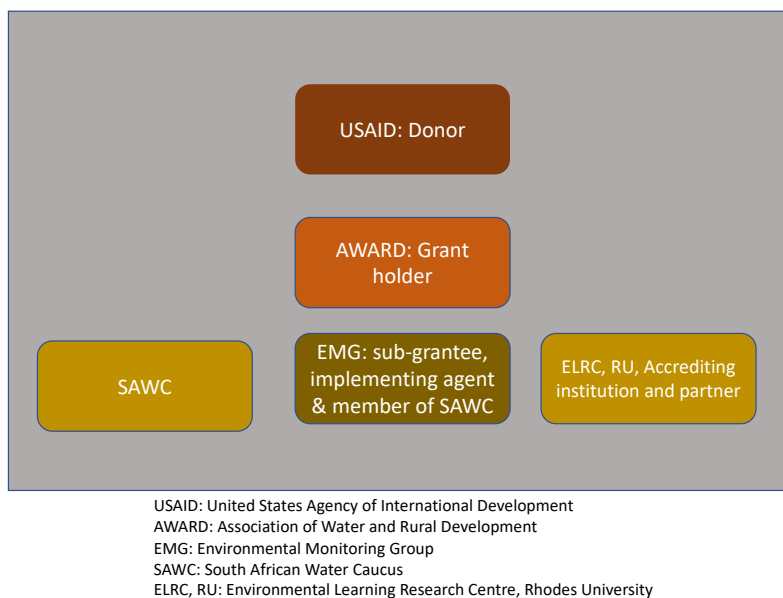
Figure 41 : Navigating donor relationships – the Changing Practice course within a broader network of institutions and social movements (Burt, 2017).
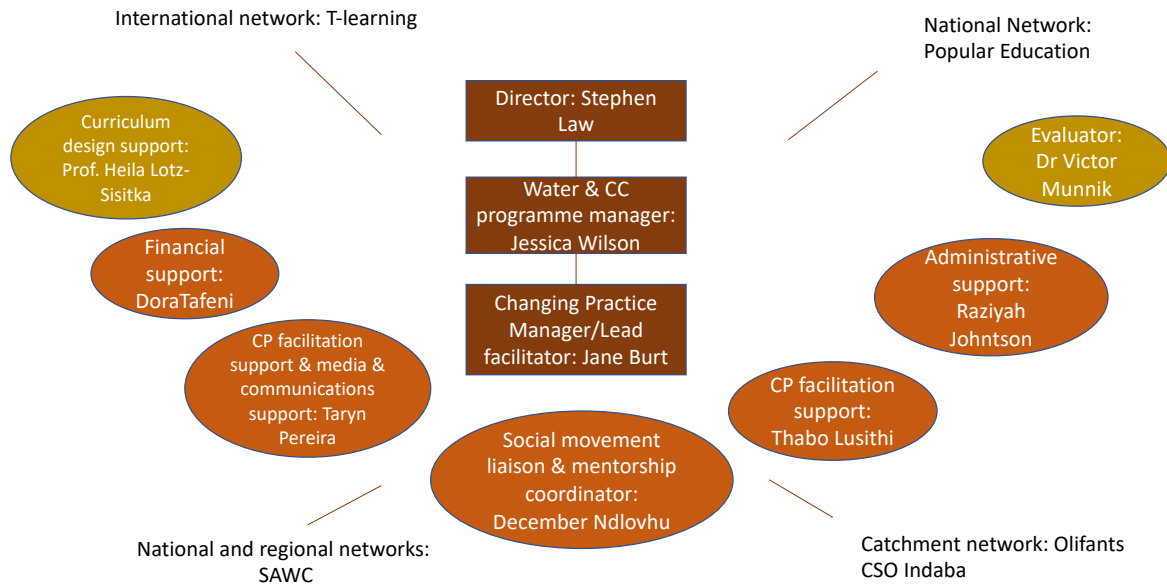
Figure 42: Roles towards ensuring networked learning (Burt, 2017).
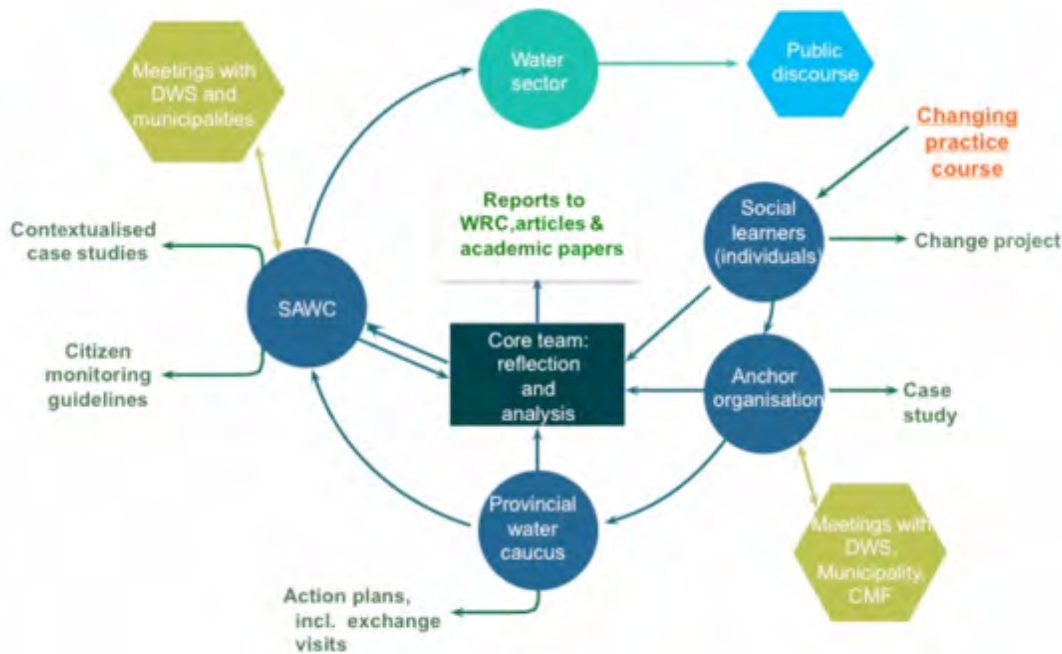
Figure 43 : project design, a spiral of action learning at multiple scales (Wilson et al. 2016)

The above figure presents the network of relationships in the action research project investigating civil society participation in water governance. It shows how the Changing Practice course was positioned within this broader research in order to support activists to develop

change projects that contributed to the core team, and to anchor organizations. (The core team consisted of EMG staff, myself, and Professor Heila Lotz-Sisitka as environmental educators and environmental learning researchers, plus members of the SAWC coordinating committee some of whom were participants on the Changing Practice course).

The final figure shows the networked nature of one cycle of learning.

Cycles within one Learning Cycle

Research team

Changing Practice Participants, Research team, SAWC, DWS, CMF

Sharing & Reflecting more broadly

Questioning & planning

Changing practice Participants & facilitators

Working away guided by course assignment and mentorship

Working together Module

Changing Practice Participants & facilitators

Reflecting on learning module

Facilitators & Research team

Research team consists of researchers, NGO staff, members of SAWC, course participants, facilitators

Figure 44 : Networked learning cycles within one learning cycle of the Changing Practice course

2.4 Working away, working together

As mentioned earlier, the course design model of 'working together, working away' in South Africa comes from the original course developed by the ELRC and EEASA. For the 'working together' modules, all participants on the course comes together for three to four days to learn guided by a particular transformative question, then they go away with a task/assignment to work on at home, which is their change project – this is the 'working away' part of the cycle. They then bring their finished task to the next working together session, usually two months from the last one, and engage with the next transformative question. The change project chosen

by the participants focuses on a concern or issue which already exists in their everyday work, something they want to change. The course aims to help them think about this concern critically, and consider how they are going to address and change it.

In the original ELRC environmental education courses, participants learned about education as a change practice through holding a workshop or developing a resource. The Changing Practice course might include such educational responses, but not always. Other possibilities could include decisions to mobilise communities, coordinate a survey, demand government responses, make legal challenges, hold dialogues, generate campaigns or organize protests. Appropriate action depends on getting to the root cause of where the environmental injustice came from and how it was allowed to continue.

2.5 Cognitively just course design

2.5.1 The history of the critical environmental education project in South Africa[16]

The Changing Practice course needs a strong but flexible foundation. I imagine it more as a foundation of a community than a foundation of a house.   It is built on the intangible threads of relations with others and with the environment.

In Chapter 2 , I review the historical emergence of environmental learning in South Africa. The environmental learning movement drew on critical education as a counter-force to the dominant view of education at the time, which was the transference of information from experts to students (based on knowledge generally interpreted through a positivist logic). Knowledge generated through this process was presented as neutral, not influenced by culture, prejudice, politics or power. This approach almost always considered races and cultures that were not white as 'less than'. It was oblivious of the culturally biased way in which it generated and disseminated knowledge. Education became a way of perpetuating an elite view of the world. In

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[16] For a more writing on this topic see Chapter 2 and article 1, "A peaceful revenge" in Part 2.

South Africa, we saw these attitudes imposed on the Bantu education system. Although that system was been officially dismantled, its remnants remain in our educational structures today.

A strong resistance to positivism from scholars that emerged in the early 20th century came from the Frankfurt school of critical theory (Lotz-Sisitka, 2015). These thinkers disputed the notion that knowledge is produced in a neutral fashion, and showed how research and knowledge production was a political act influenced by power and privilege. They called for research and knowledge to be critical of power.

Socialist and communist movements also influenced our understanding of the politics of knowledge. Gramsci's educational ideas ran strongly against hegemony (Gramsci, 1988). Freire, a very influential critical educator, called for a 'pedagogy for the oppressed' (Freire, 2005), and wanted an education that would generate critical consciousness. Fanon (Fanon, 1964) and other thinkers exposed theoretical positions that were founded on racism and imperialism. Many of these ideas influenced environmental learning in South Africa. Social movement learning grappled directly with issues of racial discrimination (such as the work of Steve Biko (Biko, 1978) and Richard Turner (Turner, 1972) and others in the 1970s) whereas during apartheid environmental education as conservation education engaged in race in a way that Salleh (2017) would describe as 'light green' – her term for a perspective that sees issues of the environment as more pressing and a naturally shared concern of all humanity regardless of race. In the post-apartheid years, environmental learning scholars from Africa have done a lot to challenge this position within the global environmental education movement (along with other scholars from around the world) and argue for the intersectionality of environmental inequality and social inequality (for example: Mukute, 2010; Masuku, 2018; Shava, 2008)

Today one sees the same arguments arising within the Extinction Rebellion movement in the United Kingdom, where some members argue that race is a 'less than' issue, a distraction from the real issue, which is climate change. Others, in Extinction Rebellion (and outside the movement), argue that climate justice intersects with other forms of justice. These healthy debates are vitally important if we are to address the underlying causes of the climate emergency. The Changing Practice course had to also grapple with these concerns. We found

that we cannot address the issues of climate emergency without understanding the intersection of racism, sexism and environmental degradation. Biko, in describing the devastating effects of colonization and apartheid on Black South Africans, asked how a slave could sit down with the master and negotiate freedom unless the slave was free and the master was not a master (Biko 1978). He saw that the white student movement denied the history of black oppression as well as the history of black leadership and "ultimately could not conceive of the possibility of a liberation movement being led by a black imagination and a black leadership" (Burt et al., 2018, 497)

Unfortunately it has taken time for the environmental learning movement and the people's education movement to come closer together. One reason for this was the distrust that the people's education movement had for the conservation movement which tended to see black people's behaviour as part of the problem. There was also a theory-practice inconsistency with environmental education principles being developed at a conceptual level that seemed out of reach to Black students. Joe Mamela, an influential person in the environmental education movement in the 1980s, confirms that the environmental education drive came from white liberal universities. He adds: "I venture to say that, at least at the conceptual level, environmental education principles among us as the Black student formations was the equivalent of 'pie in the sky'" (J. Mamela, email communication, 18 November 2019). Over time this contradiction has started to resolve as more African scholars apply learning theory and principles in practice thus generating an African scholarship based on praxis.

Unfortunately for South Africa, the critical education movement, including the people's education movement, also began to dissipate towards the end of apartheid in the push for 'liberation first, education second'. Mamela argues that this generated a culture within educational structures that still bedevils black schooling today (J. Mamela, email communication, 18 November 2019). Leigh-Ann Naidoo (2015) also points out how the Black Consciousness movement's pedagogical ideals were replaced in education by social movement slogans and political messages. She concludes that the mass political education project defeated the critical education project and the aim to transform consciousness. Mamela laments that this diminishing of a critical focus returned mainstream environmental education to the "domains of the well to

do and educational elites…" so that we face "the real scenario of the hegemony of the elites and the disintegration of the many" (J.Mamela, email communication, 18 November 2019).

It is at this juncture that environmental learning scholars are now working to reimagine the power of a theoretically rigorous environmental education that is grounded in the realities and contextual conditions of Africa. The Changing Practice course is one of many of these applications. Because the Changing Practice course works within the context of community based environmental movements we needed to question how environmental learning can deal adequately with the mechanisms of environmental violence in South Africa, something that the participants in the course experience daily.

How do we do this?

When I was doing my Master's degree I thought post-structuralism was the path out of positivism. As it turned out, the post-structuralism path was not enough, but it did give educator-activists an understanding of the power of discourse – which in turn gave us an understanding of the politics of knowledge. It helped us to work at multiple levels when it came to speaking to power.

Some people believe that working with the elite ('change from within') is the only way we are going to change the status quo. The problem with this approach is that it does not address the roots of environmental violence, which are racism, sexism, and an unregulated capitalist system that continues to benefit from colonialism and war. In this context our institutions tend to become complicit (sometimes unintentionally) and change from within becomes increasingly difficult. A counterforce to growing inequality is also necessary.

For me personally, discovering critical realism and bringing it into the course was the emancipatory 'kick in the pants' that I needed to get back on track. In the beginning, reading critical realism was like going to the dentist to get a tooth pulled out without anaesthetic. Leigh Price argues that critical realism's greatest value is in helping academics to unlearn what academia has taught them:

> "In my experience, non-academics are much more open to Bhaskar's ideas than academics as his ideas really are 'enlightened common sense' (so not the kind of

'common sense' that is steeped in ideology and false assumptions). Bhaskar simply justifies academics to take non- academic ideas seriously. I know many of us are wary of the term enlightened, but I think Bhaskar simply uses it to suggest that this kind of common sense requires some work. Often, what we initially take for 'common sense' is habitual prejudice. In a way, western science was always designed to remove the power of the 'rabble' by making their knowledge dismissable and making the knowledge of the elite the only knowledge that had value. Socrates, the father of western sceince, was quite clear about this – he needed to find a way to keep the oligarchy in power whilst faced with the reality that the plebians were far more powerful in terms of their numbers and physical strength." (L. Price, email communication, 23 December 2019).

What I find invaluable about Bhaskar's work is his argument that Western philosophy has conflated ontology with epistemology, and how Western philosophy has ignored negation. Bhaskar's work was also important because it allowed for a new philosophical position for non-academics and academics alike. In its simplest terms, his project is to democratize knowledge and action.

Critical realism argues that empiricists and post-structuralists have conflated their theories of how they know the world with how the world really is. Empiricists observe and measure the world, and through a strict scientific method, investigate its mechanisms and reveal them. Post-structuralists require an analysis of power, discourse, governance and culture to reveal mechanisms of any phenomenon. Critical realism, on the other hand, will consider the truth of any theory of how we know the world, including empirical science or post-structural analysis, but with the important proviso that all theories are relative. It says we can never know the whole universe, and our knowing will always be, to a certain degree, subjective. This does not mean that the universe itself is relative. It exists with its own processes (of which we are a part) whether we know about these or not.

In our everyday lives we know that we exist, the environment exists, and the effects of our economics and politics exists – we can see them *and* we can feel them. But when it comes to generating knowledge, we assume that unless we experience something, it does not exist. Empiricists discount the existence of something if it can't be measured; some post-structuralists will discount that anything really exists at all; some constructivists will claim that everything is a mental construction.

In the role of educator-activist, critical realism's distinction between ontology and epistemology very useful in practical ways. It accepts that oppression is a real mechanism in the world, and it says that by drawing on different knowledges, we can find the best possible explanation for why oppression exists. It opens an opportunity for us to democratize knowledge, because it cannot accept that generating explanations is the exclusive right of Western science. The Changing Practice course draws on dialectic reasoning to generate explanations. The dialectic, relevant to both theory and practice, offers a way to emancipatory action, as well as research and education. It helps us to unearth contradictions in our practice and come up with explanations about why these contradictions exist, and what we need to take away ('to absent') to resolve them.

In Part 2 of this thesis, "Research for the people, by the people" (Burt 2019, p. 20) I identify another useful aspect of Bhaskar's philosophy of education, as follows:

> "Bhaskar identifies another hiatus in Western philosophy, namely that it generally speaks of reality in terms of positive qualities and tends to be silent about negative qualities which he refers to as gaps and absences. For Bhaskar this means Western philosophy has a limited view of real change – if reality only consists of positive qualities then change can only be a redistribution of these qualities rather than an absenting of qualities or the filling of gaps. This position has significant value when meeting indigenous, local or spiritual knowledge. Most forms of spiritual knowledge argue for an ethic of care for the environment, the absence of which is an acknowledged gap between the ability to know and the ability to act."

This may sound too philosophical for a course for activists, but it isn't. I find the work of an educator-activist is to activate theories of emancipation and education into emancipatory environmental educational practice. Our task is to grapple with these ideas and enable others to grapple with them too. As Leigh Price (quoted above) says, non-academics take to these ideas easily, as they often correspond to the way they make sense of the world. As educators we can make this process conscious, as that helps all of us to identify contradictions in our theories and practices.

How did we do this? the question-based dialectic inquiry

To present the critical realism dialectic to course participants we decided that, instead of speaking of the philosophy directly, we would generate it via questions from our own practice

and use this question-guided process. Each 'working together' module would focus on one question in the dialectic.

This approach allowed the mechanism of transformation (the dialectics of transformation) to be practised through the learning process. It has proved to be an all-encompassing system of research, theory generation and learning practice that is flexible (the process has been designed and not the content) while at the same time being rigorous (being based on the mechanisms of how we learn and how we learn to transform). Currently the question-based dialectic inquiry follows five learning cycles guided by five transformative questions linked to the critical realist dialectic. These are detailed later in this letter.

2.6 Mentoring

In the Changing Practice course, mentorship is offered between the 'working together' sessions. It functions as a support for participants while they are working in their organizations. We had two kinds of mentors: facilitators, and activists (more experienced activists who would coordinate the Changing Practice group within their organization).

Mentoring is an original seed from the original ELRC environmental education course. I was introduced to this model of learning through being a mentor for the Eastern Cape group of the original course. Mentoring is not only about giving content-related or even skill-related assistance. Equally important, it means being someone who cares and will listen. Fricker (2007) calls this epistemic justice.

How do we do this?

Mentoring takes a lot of time and a lot of emotional strength. As mentors we often have to play the role of counsellor – in fact one of the mentors in the third Changing Practice course was a qualified trauma counsellor. Life happens in the course and cannot be left at the door. As a mentor you may need to be available for phone calls about almost anything, and guide people to get help from others if it is beyond your skill to help them. In poor communities, people's lives are in continual flux and precariousness. Unexpected family deaths are common, so is trauma

and illness. One of the participants on the third Changing Practice course was 21 years old and an orphan. She was the main carer of her younger siblings.

Course participants, however strong they may be, often struggle with exhaustion because of the demands on their time as activists. It is important to bear this in mind when we work with them, to have the flexibility to work with the ebbs and flows of their energy levels and their various commitments while still holding them accountable to their course commitments. Just as activists are a resource for their community, so educators can be a resource for the participants on the course. The course enables us, as professionals, to learn this valuable practice from activists and for activists. This is what it means to be in solidarity with those who are at the front line of resistance to oppression.

2.7 Collaborative course design

Being committed to emancipation means being committed to emancipatory practice in whatever one does. I like to think that Fanon (Dei, 2010) would advise us to keep generating new emancipatory structures within the social movement, and generate new structures of learning for emancipation. When we worked with the Environmental Monitoring Group (EMG) in partnership with the Environmental Learning Research Centre, Rhodes University, in the second Changing Practice course (Wilson et al., 2016) we were given an opportunity to do exactly that.

How did we do this?

In May 2014 EMG as the organizing partner convened a research meeting (See figure 24) to develop the design of the Changing Practice course (Lotz-Sisitka et al., 2014). At the meeting were members of the Water and Climate Change Programme in EMG, coordinators from each province of the SAWC, an independent activist-researcher, and two researchers from the ELRC. We met in Observatory, Cape Town, to plan the course design . When the discussions got intense, we took a break to practise mindfulness or silence.

Buddhists say that the healthy mind is like a dog attached by a piece of string to an eagle. The eagle has a far-seeing view across the landscape whereas the dog sees the detail of what is in front of it. If the string snaps the eagle will fly up into the sky until it has a wide-ranging view but

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only of patches of colour. The dog, without the eagle, will get distracted by the details of her immediate surroundings and may miss the broader patterns. This is why the dog and the eagle should work at keeping their string taut but not so tight that it snaps. The EMG research meeting had something of this quality. The academics and the activists were not simply divided into ideas being eagle/academics and practice being dog/activists, they were all both dog and eagle depending on their experiences and ways of knowing.

Initial meetings like this are facilitated as it is the skilled facilitation that keeps the string taut. It is probably best to draw on someone who has a popular education background or has trained in transformative facilitation or alternatives to violence. The most important skill is the ability to enable dialogue and to be unafraid of complex and sometimes painful dialogue. The facilitator also has to be able to read the group dynamics and bring the group's attention to emerging tensions and contradictions. They do not need to have an environmental background.

2.8 Boundaries in the Changing Practice course

It is valuable to set protocols for the course and conduct the process with integrity. In our case some boundaries were set in advance, for instance people do not attend the course as individuals, but as organizations. Organizations do not have to be formally constituted. They could range from a women's group to an informal community group to a community-based organization. The only criterion is that they should be a group of people who are already committed to bringing about change in their community in a form that aligns with the collective themes of the course.

Each Changing Practice course has a collective theme, although the theme is not the central activity. The central activity is social mobilisation to bring about change, or to strengthen change that is already happening. The course is also just one of a number of activist practices situated within a social movement, to catalyse critical engagement and action (See figure 23) It produces a body of work around a particular campaign or concern or theme. We found it useful to have a geographical boundary, such as a catchment boundary, for the course, as this helps give further focus to the body of knowledge that is produced by activists. A catchment boundary worked well in this context but it may not work in other contexts.

All three Changing Practice courses so far have had an environmental focus. The first was focused on local water management practices in the Eastern Cape. The second focused on the monitoring of the National Water Resource Strategy (NWRS), and generated four cases. The third course focused on environmental collective action in the Olifants catchment. The focus made a lot of difference to the success of the course. For the Olifants course, it was the catchment focus. For the SAWC monitoring course, it was the SAWC social movement campaigns.

The negotiation of these two focus areas (the social movement focus and the geographical catchment focus) was done through a collaborative curriculum design workshop. In the same workshop we negotiated three or four themes for the change projects, chosen in such a way that they would add to a collective body of work.

Applications were made by organizations not individuals. Organizations put forward the suggested number of people they want to attend, usually two or three. Once accepted, it was up to each organization to decide who to send. Participants attended knowing they were representing their organization.

We apply three non-negotiable principles to the application process:
1. The organization has to able to demonstrate accountability to their members and community in the form of reports, minutes of meetings, a constitution or set of principles or articles documenting their work.
2. The people being put forward to attend the course should have at least a level 12 certification[17] or show evidence (in the form of prior learning) of not needing this certification.
3. There should be a gender balance in applications.

The applications are chosen by a panel made up of some facilitators, NGO practitioners and academics. Each organization signs an agreement with the organization managing the course

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[17] A level 12 (matric) certificate in South Africa is the final level of formal secondary schooling.

funds, and each participant also signs an agreement. This agreement is a contract between the course, the organization, and the participant, stating what is expected from the organization and what is expected from the participant. These formal agreements are part of the learning of the course. Some sessions of the course focus on why accountability is important for building and leading social movements.

2.9 Seeding facilitator-activists

For me, embodying education for an education-activist is guided by two principles:

1. Because an educator-activist is committed to emancipation, we are political actors. This means that we are committed to absenting racism, sexism, colonialism, imperialism and capitalism, particularly its current rampant form. We understand that social justice is integrally intertwined with environmental justice: the one cannot happen without the other.

2. As an educator-activist we align ourselves, first and foremost, with civil society movements. Although we may find ourselves working in partnership with the private sector or being funded by donors we consider dubious, our allegiance is primarily to people experiencing oppression and committed to resistance. We found that we need to be transparent with participants about how the course is funded, how decisions are made, and how the money is spent.

Allegiance does not mean leading. It means putting skills at the service of the collective movement, as a contribution to cognitive justice and resistance to environmental violence.

A facilitator of the Changing Practice course does not need do not have to been highly trained or have a lot of experience. It is more important to be principled, committed to constantly reviewing practice, willing to be guided by the participants, and open to their experiences and needs.

I found that there is never a moment when the educator-activist is not learning. We were continually looking for new approaches and methods of facilitating to assist with learning in different contexts. We had to learn to let the context speak to me and from there find the best

possible approach and methods. The best training for being present to what is emerging in the group is to know our own psychology and my own mind. I had to know what triggers fear or anger in me, what I am scared of, and what I can't deal with.

A valuable skill is to be able to listen to these own internal reactions while still being present to the people in front of you, and to hear them. I found that hearing my internal reactions, emotions, and thought patterns, does not mean that I act on them. I just need to be present with them, neither getting entangled with them nor pushing them away. At times this required being entirely open with participants about my inner world (which is integrally connected with what we are experiencing in the social world) and articulating it. If I am not able to be present with myself and with the group, I am at risk of doing the group and myself harm. If I was not aware of what triggers negative feelings in me, there was a risk of projecting these onto the group and not being able to fully hear and respond to what was emerging.

Another skill I found invaluable was mirroring back to the group what is happening and what is unfolding in the present moment, while at the same time noticing the patterns that are emerging which can guide the group to delve deeper. It means that in the moment of facilitating you may have to let go of what you've planned, be with the process unfolding in the moment, and keep one eye on the direction where the group energy is going. I discovered that this is not possible without preparation, even if I had to let go of what I had prepared. What doesn't work is to prepare the night before, or simply pitch up.

 When we run the Changing Practice course, we will use PowerPoint where needed, or any other teaching technology. However we always acknowledge that the most important learning is in the interaction that emerges as we are together. This means more work for facilitators, as we have to confer among ourselves daily to change the agenda or work out how to address a new arising generative theme. Brenda Leibowitz (2017), an educator at the University of Johannesburg, writes that learning is not only cognitive: it is active, affective, and experiential. "If interaction is excluded and knowledge is mainly theoretical, it becomes "disembodied, and separated from process, context and experience." (Leibowitz, 2017, 3). As Liebowitz warns, "The assumption that

one can design a curriculum around what knowledge is, and not around how people come to know, is the problem." (Leibowitz, 2017, 3).

Facilitation requires reflexive practice, attention, listening and unearthing – and all of this in the moment. One can take courses on facilitation, and learn techniques, but for me, the most effective way to learn about it is through mentorship. This is what I did. When I attended an 'Alternatives to Violence' course in Grahamstown (now known as Makhanda) in 1997 I could see the facilitator was brilliant. I was astonished by her skill at taking the participants to such creative, deep spaces of learning. I overcame my shyness and decided to ask if I could learn from her. I attended her workshops, absorbed what she did, and discussed this with her. After some time, she let me co-facilitate with her. I saw this as my apprenticeship. After that, I apprenticed myself to other experienced facilitators. To this day I have at least two facilitators who I learn from by working with them whenever I can. So my recommendation is to draw an experienced facilitator into the course and design the course with them, so that you can learn together.

Facilitation often brings painful aspects of life into sharp focus. After facilitating a group, we facilitators are often left alone with the myriad of contradictions and possibilities that have arisen. For this reason we always run the Changing Practice course with more than one facilitator, so we can support and be a mirror for one another. If you do have to facilitate alone, ensure you have a peer or a colleague that you can debrief with. I always try to run the Changing Practice courses with both experienced and not so experienced facilitators. The less experienced facilitators may have other kinds of experience, such as in the content, or relationship building, or social movement engagement. All bring their skills and learn from each other. This is why we have started the Changing Practice coalition – a loose group of facilitators who are aligned in their principles and can support each other with this work.

2.9.1 Costs and money

As an educator-activist, your work will be required at multiple levels, some of them unpaid: mobilising, campaigning, researching, facilitating, organizing, managing and evaluating.

The costs of the participants have to be covered for both the modules and the change project. These include buying mobile phone data, online time at internet cafes, transport, and printing costs. We ask each organization to manage and account for the costs of their change project, and we build financial accountability into the course. In the first module, participants learn how to put together a budget, and to invoice each assignment as a deliverable. In the second module, participants learn how to balance the previous budget and invoice for the next tranche of work. We only pay out change project funds when organizations have submitted reconciliations of their spending. We put together a budgeting pack with templates for budgeting, invoicing and reconciling the cash. Because taxis and spaza shops do not give receipts, we make receipt templates for taxi drivers and shop owners to sign. This is all negotiated as we move through the course.

It takes extra management to fund the change projects, but the skills learnt by the participants through this process are very useful for social movements. However, it was a struggle for us because the extra work this entailed was difficult, much more difficult than running the learning modules. It is, however, an important aspect of the work.

It takes an average R800 000 (calculated in 2017) to run the course for 18 people over 18–24 months. This is a lot of money. But if you work out R800 000 spread over 24 months for 18 individuals it comes to R1 852 per person per month. This is still far below most other educational short courses which cost R3000 or more a day.

2.10 Composting and caring

2.10.1 How to prepare and then 'let go'?

For the second Changing Practice course I was the main facilitator in consultation with Heila Lotz-Sisitka from ELRC-RU, who provided important theoretical input and guidance. We had generative support and co-facilitation from Jessica Wilson (manager of the research project), Thabang Nqcozela and Taryn Pereira, all from EMG.

During the third Changing Practice course we were a team of three core facilitators (myself; Stella Horgan, a councillor and leadership coach; and December Ndhlovu, a member of the Mpumalanga water caucus and a previous course participant) with three EMG staff facilitators (not every EMG facilitator would come to every module). For each module we did all the planning together.

How did we do this?

For these two courses I put together a first draft framework for the course based on the core dialectical question we were addressing. All the facilitators then met via Skype (we all lived in different parts of South Africa) to discuss and modify the framework. Some of us had read the participants' assignments before meeting to give us a sense of what they needed to further their work. We discussed who would facilitate which sessions and what preparation was necessary.

We began our preparation two months in advance. We opened a Google document that we all could access, listing all the sessions and questions to consider, and the materials needed for each session. On starting the course, we arrived a day early and went through the design one last time. Meetings like this also allowed us to adjust for small changes and last-minute requests for assistance and co-facilitation. During the course we met every day over supper and/or breakfast to discuss how the day had been and what was needed to adjust for the day ahead. The person who was facilitating the day's session was given full rein on final decisions.

The trust that had developed between us made it possible for us to call on one another to take over or assist if we felt we were losing our way. It was sometimes impossible for one of us to facilitate because of life crises like illness or a death in one of our families. When this happened we moved the sessions around until our fellow facilitator could facilitate, or delegated someone else to take responsibility for their role. We were open about the reasons for changes with participants. An important aspect of the process was to check in with each other, register the emotional weather between us, including any personal difficulties that any of us were experiencing. We were open about our mistakes as this was a collaborative unfolding of learning. There was lots of laughter and sometimes tears.

A lot of 'behind the scenes' work in theoretical thinking and design goes into preparing a Changing Practice course. Leesa Wheelahan, quoted in Liebowitz, says "Theorising the nature of knowledge is thus a key task of the sociology of education, because this provides an understanding of the way it should be structured in curriculums so there is equitable access to it"(Leibowitz, 2017, 3). It is our responsibility to gently ground the process in careful theoretical thinking. It requires knowledge not only of educational theory but of sociology, psychology, political theory, environmental systems and knowledges that are not recognised in academic systems. Facilitators try to keep track of how academic theories are moving into the world through journalists, bloggers and innovative institutions. If you have had the benefit of a formal tertiary education this is where you can be most useful.

2.10.2 How to facilitate as a care worker?

As you will have seen from the four articles written for this thesis (See Part 2) gender has been a key concern. As we developed into feminist facilitators, we saw a dimension of facilitation we had not noticed before – that the facilitation role is one of a care worker. We also began to see how the role of activists parallels the role of care workers, in the sense that both do work that is foundational for society but goes unrecognised and is often unpaid for – as is the work of a parent, usually a mother, in bringing up children and running a household (Jane Burt et al., n.d.).

The understanding of care as the common basis of both facilitation and activism helped us as we composted cognitive justice in our facilitation practice. It also helped activists have a new lens to see their own work and articulate its value. When we first spoke about this together, we realized that we were caring at multiple levels. We saw this could be described by critical realism's layered model of agency and realized we could apply this to the facilitation of the course (Bhaskar 2016) . Bhaskar said that agency is enacted at four different levels of relating: our relationship with ourselves, our relationship with others, with structure and with the earth itself (this refers to the material nature of our existence). As we wrote in article 2 (See Part 2), "Entering the mud":

> "A critical realist notion of agency acknowledges that an emergent level is dependent on the level from which it arises... In our case, looking at transformative care, a caring society

depends on caring communities which in turn depend on caring individuals who care for themselves and who resist acts of violence. It follows that transformative learning as cognitive justice means working at all levels of our existence: unearthing knowledge about ourselves, our communities and our world that can lead us into a caring relationship with one another and ultimately with the planet." (Burt et al., 21).

A pattern starts to become clear here, in the cycles of learning design, learning research, reflection and facilitation, that agency emerges at all levels of the course. This can be articulated in a figure like the one below:
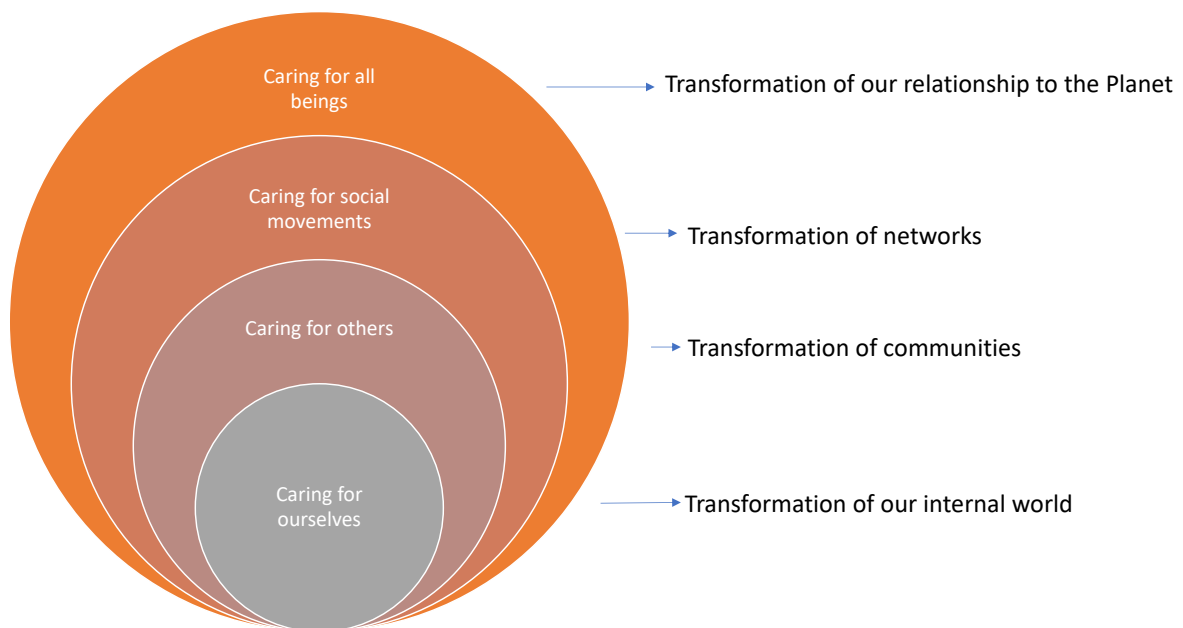
Figure 45 : Lamination of care

This is what happens as we 'enter into the mud' of the learning process. The key to this muddy process is to be guided by the participants' cognitive and emotional responses to the learning process. As all our education processes have emerged out of a history, this historical experience will inevitably be part of the participants' response. Their experiences have guided us to the care work that is needed.

2.10.2.1 Our relationship with ourselves

As Fanon (Dei, 2010) writes, Western individualism makes people see education as empowering individual excellence, de-historicizing the way the world has distorted individual consciousness.

Michelson writes, "Even when we are thinking alone, that thinking is mediated through the sociality of language and the social production of meaning"(Michelson, 2015, 91). Fanon captures the intertwining of consciousness and society painfully in his outcry in *Black Skin, White Masks*: "Oh my body, always make me a man who questions!" (Fanon, 2008, xxi). The violent distortion of colonisation leaves its mark on our bodies, minds, and societies.

In the Changing Practice course, participants expressed their experiences of education as fear of education, as something imposed upon them, as a judgement on them, as a feeling of swimming in the oppressor's sea. Leibowitz says that when the social world where knowledge is produced is not the social world of learners, it is much more difficult to come to know it. She quotes Donna Haraway as saying:

> "It matters which stories tell stories, which concepts think concepts. Mathematically, visually and narratively, it matters which figures figure, which systems systematize systems." (Haraway, quoted in Leibowitz, 2017, 96).

Or, as Leibowitz writes, "If you are not a participant within the knowledge practices where particular knowledge forms were generated, how best does one acquire this knowledge?" (Leibowitz, 2017, 104). We (the facilitators of the Changing Practice course) found out that one can only acquire such knowledge by participating in practices that value multiple cultures, and understanding the context from which each form of knowing emerges.

When someone has to move into a space that is alien to her or him, especially a world steeped in symbols of colonisation, of the so-called ' knowledgeable' , this is an act of violence. Whoever speaks in the language, concepts and authority of this world becomes divisive, even if that person is speaking about decolonisation. The task of the cognitively-just educator-activist is therefore to enable a knowing process which can emerge from the social world of the participants. The process needs to feel, enact, and engage with the social world as it is present in the course.

When participants come into the learning space, they need to claim it as their own. They need to recognise it, to see faces like theirs leading processes, speaking out against power. Thabo Lusithi, one of the facilitators who had previously been a participant, would often call me to task in front of participants both for my radical views as well as my white-woman blunderings and

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insensitivities. This is to be encouraged. It helps all of us if someone points out the internal and structural damage that has been done. It is also a critical first step in pursuing a decolonised education (Dei, 2010, 16). It is important to do the internal work needed to face up to our own prejudices as there is a danger of the emotional and cognitive work of naming oppression falling on the shoulders of the oppressed. In feminist work this is called the mental burden.

We have therefore had to pay close attention to the effects of trauma in participants' lives and in our own lives – not only the trauma of education but any trauma. For the people in social movements there are combinations of traumas associated with being young, being an activist, black, rural, a woman, poor, disenfranchised, growing up next to a mine, not having enough water, not having enough food, losing a child because of polluted air, suicides of hopeless relatives, murders and theft. The point is not to dwell in the drama of the trauma but to acknowledge it as present in individual histories, and see how it is structurally enabled by our society[18].

One young woman participant explained that she had tried to commit suicide after she lost her job. A friend, and her involvement in activism, gave her a more positive view of her life. She gained an understanding that much of what affected her individually was structural inequality within society that crushes so many people. We cannot be in denial of suffering, whether our own or that of others. Buddhism says we can either drown in suffering, or we can allow our suffering to take us into the well of compassion, and thereby deepen our connection with all beings.

Caring for oneself as an activist-educator also means including simple techniques of care[19]. We seem to believe that the busier we are, the more we are getting done. If caring is the way forward we have to start with ourselves. I learned this the hard way, by becoming chronically fatigued from overwork and being incapacitated for three years.

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[18] See article two, "Entering the mud"(Part 2).

[19] Anna James, in our dialogue based on this letter, suggests that a different approach to self-care would be to see it as something that enables collective theory-practice rather than preserving the individual personality (Anna James, personal communication, 10 December 2019) (See the postscript)

Overworking, whether driven by ambition or guilt, is rewarded by our individualist culture. We can start to correct it through simple skills like planning our time and resisting over-commitment. I found that if I exhausted myself other people had to pick up the pieces, perhaps my co-workers or my friends or my partner. No matter how I justified overwork, someone may suffer for my inability to care for myself.

Activists experience high levels of stress. In the Changing Practice course we try address this stress in two ways, by introducing modules on planning, and ways to help our bodies relax. When discussion gets too heated, we return to our breath, focus on our feet, or touch the wall. Before a presentation, we all breathe in deeply and let our breath out slowly. It is simple and effective, but we have to learn to do it because we don't do it automatically when we have been traumatised.

2.10.2.2 Working relationships with other organizations

In the course we explore how we form and nurture the relationships we need for our work. We do this by drawing relationship maps and identifying why certain relationships are bound to be difficult. Through role-play we practise how to approach different institutions like academic institutions, municipalities, or lawyers.

I learned a lot about caring for relationships from activists in the Changing Practice course. Activists and the EMG have a strategy which they call 'inside-outside'. This involves finding alliances within institutions even when these institutions are corrupt or compromised (this is the 'inside' part), while at the same time not being afraid to act in resistance against the same institutions (the 'outside'). As an example of the inside-outside strategy, December Ndhlovu described how after many attempts to establish relationships with Water Services at the Bushbuckridge municipality, he established a good contact with a woman in the accounting department. This led to funding for clean-up campaigns for a period.

As facilitators, we found that maintaining relationships with collaborating organizations can be frustrating. Some organizations are partners in name only, with little real interest in engaging in

the course. This means extra work for a Changing Practice facilitators, which we did not expect or plan for. We were expected to provide value for university departments in the form of papers or reports. Likewise, partner NGOs have reporting needs for their funding, and often expect the course facilitators to provide these reports. Some want national or international recognition for their participation.

We developed my own strategy for this. We accepted that this work is part of forging solidarity with institutions who have different pressures and different priorities, but at the same time we fight fiercely for explicit recognition of the work done by the participants. The Changing Practice facilitators make sure that NGOs and academic partners do not appropriate the work done by activists on the course. We insist that activists' work is properly referenced by all partners, and that the use of their change projects as case studies can only happen with formal permission.

For example for the third article ("Research for the people, by the people" (Burt, 2019) See Part 2), I requested permission in advance from the Vaal Environmental Justice Alliance (VEJA), to use their change project, and referenced their work. I also sent the article to VEJA and requested that they review it to make sure they are happy with it before I sent it to a journal to be considered for publication.

Some organizations became frustrated with our insistence on acknowledging participants' research by name and permission. But the fact is that they would never expect professionals to allow such a thing. Activists too can learn to take a confident and agentive stand in relation to knowledge rather than being on the fringes (Leibowitz, 2017).

A similar relationship struggle has been mobilising for activists to attend conferences to present their own work in their own way. An example was the International Seedbeds of Transformation conference held in Port Elizabeth in May 2018. The three community-based activists from the Changing Practice course who attended described how they felt objectified by the way academics and development professionals used the term 'communities'. They did, however, have the confidence and the language to express their feelings. One of them, Elvis Komane, described the actions of global capital as 'ecological theft' (E. Komane, personal communication, 9 May 2019) a

term that a lot of conference participants appreciated. Another activist, a woman named Susan Boledi, stood up and announced that it was time for professionals to be guided by the oppressed.

2.10.2.3 Caring for the social movement

Part of our work as educator-activists is how to care for our relationships with social movements and what we call transformation networks. To do this requires understanding where and why institutions and networks are compromised, and looking for ways of absenting this.

In the Changing Practice course we analysed the social movement(s) we belonged to and noted how we communicated with them, where the power dynamics lay, what actions were possible and what were not. We talked about what it meant to be 'an activist' and how this term can be used as a derogatory label, or how one's work can be put down as 'not activist enough' within the social movement.

Most of the environmental content comes from the participants' change projects and the themes of the course. We do include sessions on contemplating our relationship and connection with the earth, as well as sessions on up to date emerging knowledge about climate change and water issues.

In the third Changing Practice course, in the 'what is happening?' module, we invited everyone to state their/our personal understanding of climate change. There was much confusion and much anxiety about it. We heard conspiracy theories that climate change was a narrative developed by western countries to scare African people. One participant described climate change as happening out of our reach – both the knowledge of climate change and the decisions about it, she said, are happening elsewhere, which makes us feel disempowered.

Facilitator Jessica Wilson had designed a session to explain the emergence of climate change, taking participants all the way back to the formation of our planet. Participants walked the timeline with Jessica asking questions to situate climate change historically, geographically and politically. This session took place during the 'how has this come to be?' module. In the next the

'how can we transform? 'module, Jessica went into the physics of climate change so we could understand what we needed to transform at the level of our planet. This was a fascinating session, with participants saying they found the science of climate change 'magical', as it opened up how natural processes happened in everyday life. There was a good-natured debate about whether the rain was brought by the ancestors or by wind patterns. There was much excitement in these debates and new understandings, which participants and facilitators described as sacred realizations.

During each module we engaged physically, emotionally and spiritually with the natural elements of the earth by contemplating the qualities of water, air, fire, earth and space through art and through silence. As symbolic gestures each participant brought an aspect of the environment into the workshop space and 'returned' it once the workshop was over. Participants asked for this practice to be continued after the first workshop. At their request we made a shrine to the earth that remained with us as we worked. We felt that by doing this we were honouring the knowledge of indigenous people all over the world. As facilitators, we allowed the participants to guide us into this knowledge. It was a process that could not be pushed or programmed, it emerged from the participants. Our job as facilitators was to offer the opportunity to transform the learning space, and then be guided. An example of a small but vital change coming from the participants was to allow mothers to attend with their babies.

Besides contemplating the environment symbolically and spiritually, we also went on fieldtrips to areas where the environments was physically deeply wounded, and landscapes that were preserved and 'wild'. In the first module, 'what is happening?', we went on a 'toxic tour', guided by the participants themselves, through the mining landscape of Emalahleni where many of them lived. We visited participants' homes beside an illegal Anglo-American mine dump that spread toxic dust over the residents every day. We walked through abandoned open mines with deep holes in the earth out of which fire still belched. We climbed an abandoned coal dump where destitute people, most of them immigrants, were digging for small pieces of coal to sell or cook with. We were told how the dump often collapses, drowning people in its dust. We walked past a young woman with a three-year old child, deep inside a hole, searching for coal. When we came back from this experience people were in tears. We had headaches from the dust, and the eyes

of some of us were watering continuously. We lay down on the floor on blankets and did a relaxation exercise trying to come to terms with what some participants had to live through every day. The shadow of a country burning bright on coal.

In another workshop, in Dunoon township outside Cape Town, we walked the streets of the informal settlement with houses so close together there was not even a drop of light peering through. Rubbish lay uncollected on street corners, and taps dripped wastefully outside government buildings, which were the only solid structures in the settlement. Car-washers and hairdressers gathered around half-broken taps for water. Children played in open spaces that leaked sewage and were covered with uncollected rubbish. Participants from rural areas like Mpumalanga could not get over the lack of space and the crowded conditions that Cape urban activists lived in.

In another workshop, at Vanderbijlpark, we visited the wetland below the infamous Mittal Steel Company (formerly Iscor) where people lived in informal settlements. People we met there explained how in the rainy season their houses were flooded and they got sores on their legs from the polluted water. We went past the dysfunctional waste treatment plant which was soon to become such a problem that the military was brought in to control the situation. We visited Sharpeville, a monument to the violence of apartheid. Our tour ended with us standing on the bank of the Vaal river observing spiritual water users practising in the polluted water.

In the Olifants course, we visited a nature reserve. We went on drives and saw leopards and elephants. A few kilometres downstream from this paradise stood the Phalaborwa mining complex which had polluted the Olifants catchment only two years earlier, to devastating effect. As we walked through, we experienced the toxicity of our human relationship with the environment.

2.10.3 Setting and assessing assignments

Assignments are designed so that they guide participants through a process of action research which will generate a case of their change project. They provide a way in which we can practise the competencies that make us better activists, educators and researchers.

We encourage the imagining of all the assignments in one process, because they build on each other. Vygotsky uses the word scaffolding (Vygotsky, 1980), and the assignments are a scaffold for learning new skills and knowledge, first through learning by doing, and then by reflecting on the doing, before taking the next step.

2.10.4 Structuring the modules and assignments

Each 'working together' module of the Changing Practice course is built on a core learning process with an assignment attached to it. The module also includes generative themes, which are linked to what is emerging from the course, and linked to where the course is situated historically and institutionally. As a facilitator I found I had to keep reminding myself of the historical moment that the course is occupying, and within what institutional network the course is being enacted.

I set out below the four stages of the question-generated learning cycle that moves participants towards and into a change project. If this process is facilitated carefully, you will notice that participants cease seeing the assignments in terms of grading or judging their abilities, and begin to seeing them as opportunities to learn the skills they need to generate strong cases for change.

2.10.4.1 Learning cycle 1: What is happening? (First leap of the critical realist dialectic)

The first learning cycle immerses participants in understanding their local context and practice, by getting to grips with the question 'what is happening?' As Bhaskar explains, this first leap of transformation means noticing the contradictions and tensions in what we take to be everyday normality (Scott & Bhaskar, 2015).

Participants arrive at the course well aware of the problems faced by their communities. The first learning cycle provides skills, ideas and knowledge on how to carefully research (or 're-search') the problem. The research probes the problem and exposes it to the light through a process of listening, observing, questioning and recording. It emphasizes 'observing and listening' as important research skills.

As part of the listening skills for this module, we practised the art of interviewing as critical conversation – engaging with people as friends, neighbours, colleagues and comrades rather than extracting information from them. Such conversations deepen our understanding of the issue. We encouraged participants to write up these conversations as mini-cases or stories, using free writing exercises to break down participants' fear of writing and recording. For their assignment, the participants learn how to generate questions to guide conversations (based loosely on the cultural-historical activity theory model (Mukute, 2010)). After considering how we observe, and what we need to observe, we then go on a fieldtrip to observe things together. Participants usually enjoy taking photographs as observational evidence for this assignment.

A required part of each assignment is a report back to the participants' community. For this first assignment, participants are asked to relate their observations to a community group or catchment management forum, or just with their colleagues, and to record the community's feedback. The assignment also includes a refection section, where participants note their thoughts about the assignment process itself – what was challenging, what was inspiring, and what they had learnt.

The first assignment process includes a mentorship session where the facilitators meet the participants to find out what they struggling with, and how to work with this. The mentor meeting is also an opportunity to discuss the change projects, and get guidance on completing the assignment.

2.10.4.2 Learning cycle 2: How has this come to be? (Second leap of the critical realist dialectic)

The second learning cycle goes deeper into participants' concerns by considering historical factors and other contextual issues. In the module, we introduce the importance of history by relating our own histories. It is exciting to see how collective personal stories unfold the history of South Africa. It opens a door for the participants to engage with how their change project is historically situated.

Figure 46: Using a globe to explore personal histories

In this module each person draws a map of their change project, and at the same time lists their concerns about events, memories, and history outside the map. From here we begin to generate the questions that will guide the next exploration and action. We also investigate how we know things. Starting with ourselves, we consider how we have come to be who we are. What were the knowledge systems that taught us what we know today? Who or what gave us this knowledge?

Figure 47: CULISA's map of 'what is happening?' with emerging questions on 'how has this come to be?'

In this process participants immediately see that what we know comes not only from formal education but from many sources: TV, films, books, documentaries, parents, relatives, friends, and travel. We ask participants to think about which form of knowledge has value and which knowledge is true and how we know this. In between these questions we undertake exercises with contemplation, art and conversation. Then we return to thinking about knowledge and learning, how it is networked, and how it converses with us in different forms.

The second assignment is designed to get participants to engage with different knowledge networks and different forms of knowledge. During the module they define for themselves a core question or concern related to their change project, and then investigate different sources of knowledge to see what can help with their questions. They consider people with knowledge, institutions with knowledge, knowledge resources such as libraries, and media (including the internet). They are asked to experience and judge each form of knowledge in terms of its usefulness to their change project. They are also asked to assess how they know each form of knowledge to be true, or partly true.

2.10.4.3 Learning cycle 3: What does this mean? (Third leap of the critical realist dialectic)

The third module focuses on generating explanations for the contradictions or tensions that exist in the participants' work, and how or whether these contradictions can be absented. This investigation can take many different forms. For example they could consider whether a tension such as gender inequality could be absented within their organization and/or their entire social movement.

One activist group, who were wanting to restore a wetland, realized that they needed to learn (to absent their lack of knowledge) of what a healthy wetland looked like. Up to this point they had only ever encountered the unhealthy wetland they lived next to. They knew what caused it to be unhealthy, but how to move it from an unhealthy state to a healthy one was difficult without seeing a healthy wetland to inspire them.

In this module we set a writing project to 'develop the case of the change project' – meaning a well-documented and well-argued case which could be used to back up demands to government or corporates to stop environmental violence. The module included learning how to develop an argument and discerning what constituted evidence, issues which raise questions about different knowledge systems and how they are used for purposes of political power. The assignment was to develop a draft case booklet.

For the first and second Changing Practice courses Heila Lotz-Sisitka and I had wanted to provide theoretically strong analysis frameworks for activists. In the first course we drew on cultural-historical activity theory (CHAT) but later abandoned CHAT as too complex to be feasible. For the second course we drew on practice architecture theory (Kemmis & Grootenboer, 2008). In both cases our theoretical input was not as helpful as we thought it would be, as participants got too distracted in trying to get the analytical framework right.

The analytical frameworks we presented had not worked as we had hoped. We had to rethink. We came to the conclusion that our role as an educator-activist was to have options available which were immediately and contextually relevant as situations arose and questions were asked.

We needed to find a way to enhance the hard-won critical consciousness that activists already had first. Many people in the social movements, even those with no tertiary education, gravitate towards a critical thinking that draws on their embodied experience of the Marxist dialectic. It is not too difficult for them to see the links between historical effects and structural effects, as for them the 'crimes' of capitalism, gender violence, and educational violence are lived experiences. The contradiction between 'doings' and 'sayings', as raised by practice architecture theory, were intuitive experiences for them. However, like us all, activists have blind spots and often would fall back on popular messages or slogans of resistance. It was valuable to question what evidence these statements were based on and then suggest a way (either drawing on CHAT, practice architecture or another theoretical framework that was more appropriate) to question their position more closely.

The breakthrough for me came with underlabouring our work with critical realism dialectic. We were able to shape its method of working with evidence and argument, into a series of questions that led participants to dig deeper or expand further outwards. At the same time we also realized that besides using questions to guide the process, we had to make room for important and valuable questions and emotional moments to be woven in as they arose – questions about power and knowledge, the role of research, and what inhibits our institutions. This was tested in the third Changing Practice course with tangible success.

2.10.4.4 Learning cycle four: How do we transform? (the fourth leap in the critical realist dialectic)

The fourth module focused mainly on the completion of the change project case booklets which were to be the final outputs of the course. The module also explored how to plan collectively for post-course work, such as using the research groundwork to initiate a campaign or a change in practice.

The assignment for this cycle was to finalize the case booklet, run and report on a Changing Practice workshop run by the participants, and setting out a plan of action for continuing the change project after the course was over.

The participant-run Changing Practice course was to consist of small single-cycle courses held either in their home communities or with other social movement groups. They were asked to set timelines for the workshop, budget for it, organize it, and facilitate it. Each activist organization was asked to document the workshop in a report, and include whatever came out of the workshop in their change project case.

Some of the participants soon realized that their estimate of the planning time needed for a workshop was completely inadequate given their activist commitments. It was a powerful learning moment. One commented: 'I see now why I never get my assignments in on time.'

The publication of the case booklet was both an anxious and exciting aspect of the course for most participants – 18 months of work distilled into a publication. The booklets were published online on the websites of partner organizations.

2.10.4.5   Learning cycle five: What have we learnt?

The final module had two aims: for participants to reflect on all they had learnt on the course, and prepare them to apply their research work in their communities and campaigns. The module ends with a session in which participants present their own work, thus becoming the voice of their work in their writing (the booklets) and in their speech (the presentation). On the final day of the course we invite in our networks, and other organizations suggested by participants.

The final day of presenting the work is designed with the participants, facilitated by an external facilitator. Having an external facilitator allow the course facilitators to join the floor with the participants: a symbolic enactment that we are now all part of the same movement, integrated as the course ends. We usually include a drummer and singer so as to turn the space to one of celebration.

The way participants 'showcase' their work is in the form of a market. Each participant has a table with flipcharts explaining their change project – these are developed collaboratively during

this final module. On the table are their printed booklets for delegates to take away with them. The Changing Practice facilitators and mentors also have a table where they display the process of designing and facilitating the course. After the 'knowledge market' we have a plenary session, where we all discuss a series of questions that have been decided beforehand by participants. We end the day with the participants' graduation.

2.10.5 Assessing assignments

A major task of the facilitators is to assess the written assignments. Rather than being detached like external examiners, we see assessment as a continued conversation with the work of the participants. December Ndhlovu introduced the facilitators part of the assessment process to the participants by saying: "The facilitators will continually ask you questions that will trigger the next step forward. They will always ask questions, as there is always room for further critical reflection."

The facilitators' approach to assessing written assignments is to be both appreciative and critical. We first say what we like about the writing and explain how we see its strength. We then approach the work with questions and queries and suggestions which we write on their assignments. We encourage each participant to use their own voice, to question their assumptions and those of others, and to back up their arguments. Concerning style, we consider perfect English to be much less important than communication and passion. We encourage the writer not to hide their second language expression. English has been Africanised in South Africa in a way that has brought new life to the language. It is a decolonised and indigenised English, but not an incorrect English.

The time you as a facilitator spend on the assignments is a cognitively-just act of valuing participants' work and their knowledge. You should read the change project assignments more than once (we try for about four times). Then you assess them and send them back to participants, most often with the option for them to rework the assignment and send it back for more assessment. The number of times an assignment is assessed and returned is limited by the stamina and commitment of the participant and the facilitator (and the deadline).   This to and

fro process is gratifying. Thus the course ends for the participant with a gain in confidence, and the pleasure seeing a product of their own making being valued and published in the public domain.

2.11 Harvesting: post-course learning and activism

During the course the participants, guided by the facilitators, will have moved from 'what is happening?' to 'how has this come to be?' to 'how do we transform?' They will have acquired skills, techniques, information, processes, dialogues and experiences to catalyze their collective ability to name contradictions and tensions and to consider how to absent them. The facilitators, for their part, will have created a space for everyone to explore explanations of contradictions and tensions within themselves and their work.   We would (or should) all have arrived at the point of harvesting what we have.   From this point we can attempt to face environmental-social problems by simultaneously digging deeper and expanding more broadly.

An example of this two-level process happened during the second Changing Practice course, when we realized that many organizations (including some we were affiliated with) lacked skills in basic accounting, time management and planning. The facilitators decided to introduce techniques and practical skills that could help with this shortcoming. At the same time we began exercises to understand the internal patterns that made us overcommit, not care for ourselves, miss deadlines, not be accountable or not communicate. Thus the problem was addressed at two levels.

This harvesting process – digging deeper but at the same time expanding – is well described by the dog-eagle and string metaphor introduced earlier. The dog pays attention to the details of the local context, to understand what lies underneath what he can see, hear, smell, taste and feel to get a sense of 'what is happening?' The dog deepens any inquiry by refining questions, thus raising the question 'how has this come to be?' The eagle expands the dog's view by looking beyond the immediate local context to explore broader systems and different knowledges. Thus the knowledge network expands based on the refined understanding and explanation of local concerns. This brings us to the question 'what does this mean?' -- What are the obstacles? At what scale do they appear and within which systems? How can these obstacles be removed?

The string holds these perspectives at the same time, so that the dog consciousness and the eagle consciousness work together.
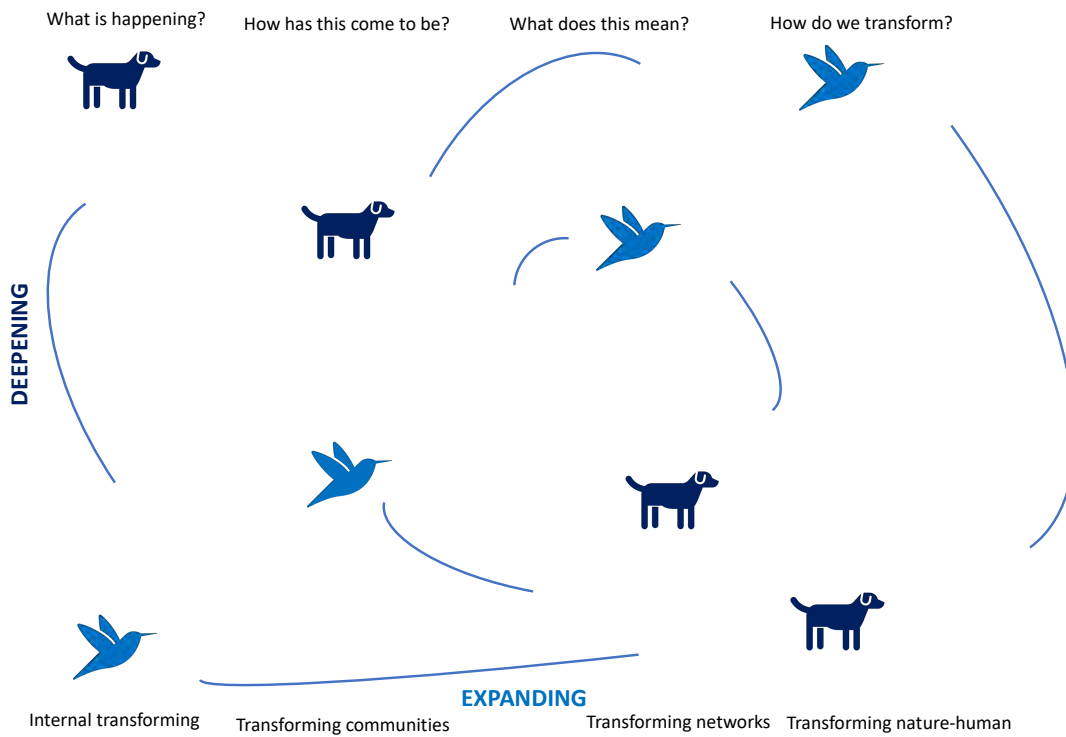
Figure 48: The process of deepening and expanding the change project process. The dog and eagle are always aligned in cooperation as they cycle around each other.

The participants' change projects are processes that allow the deepening and expanding to continue. They provide opportunities for participants to work together to generate evidence and argument, to strengthen the social movement, to communicate and engage with different institutions, people, knowledge resources, and to continue reading and thinking critically, and to engage critically with others.   Whatever the issue – climate change, water pollution, gender inequalities, inter-organization relationships, social movement building – whenever we arrive at contradiction, we can develop the ability to draw on the knowledge of the collective, and be in dialogue with many different knowledges including local, cultural, spiritual, indigenous, scientific, social, legal, and other forms of knowing the world.

I have now reached the end of a very long letter. As you move into designing your own modules and assignments you are welcome to draw on the three Changing Practice courses described

here.   But I'm sure you realize that nobody can recycle the same materials. Each Changing Practice course will have its own shape and its own themes guided by the participants' generating questions. After each module within each course, you will find yourself reworking materials and thinking of new learning processes based on what has been emerging from the course, and what you are learning about learning.

I wish you luck and more than luck, and welcome you to the growing community of activist-educators. As Paulo Freire said to Jessica Wilson's mother: *We had to enter the mud together, and only once we were all fully covered, could a teacher stand up.*[2]   So: welcome to the mud.

With kindness
Jane

3.Postscript: Response to Jane's letter: a dialogue

By Jane Burt, Anna James, Reuben Thifhulufhelwi, Matthew Weaver and Jessica Wilson

3.1 Introduction

This Video meeting was held on the 12th December 2019 and attended by Jane Burt, Reuben Thifulufwelwi Matthew Weaver, Jessica Wilson and Anna James. Some Changing Practice Coalition members were unable to attend because of Eskom (South Africa's energy utility) load shedding at the time. The purpose of this meeting was to discuss the letter that Jane had circulated to all the Changing Practice facilitators and to colleagues, like Reuben, Anna and Matthew, that were keen to learn more about the Changing Practice model. This was an opportunity to continue the conversation and support each other. It was also important for me to end the PhD work as a conversation *and* as a collective contribution. Collective scholarship is an important aspect of cognitively just learning practice and cognitively just research.

3.2 Introducing our work and current interest

Jane: As an introduction, Matthew and Reuben, it would be good to know your interest in the Changing Practice course is and how you are hoping to take it forward.
Matthew: I was briefly exposed to the Changing Practice course process by participating in the South African Water Caucus (SAWC) bi-annual general meeting and hearing peoples' stories. I've also had conversations with Taryn Pereira at Rhodes University, Makhanda. I have recently, as of July 2019, been employed as a capacity development coordinator for an ecological environmental restoration project called the Tsitsa Project on the Umzimvubu River, where two big dams are due to be built.
The Department of Environment, Forestry and Fisheries are funding a big project to restore the landscape above the proposed dams. They have quite a lofty and inspiring vision around improving livelihoods and elevating local farmers' capacity.

Several universities and NGOs are involved in the project, and we have formed different working groups or community of practice (CoP) groups[20]. There is research going on around sediment, livelihoods, knowledge and learning, systems praxis, governance. Some CoP groups have also employed local residents to act as monitors in the catchment – some of them, called citizen monitors, work with livelihood processes. Then there are governance monitors called community liaison officers, and there are citizen technicians who work with the sediment and collecting water samples from the rivers.

There has been an urgent need for capacity development for monitors, so I've started developing a capacity development short course. The Changing Practice model seemed like a good approach to build capacity for monitoring. I'm not sure if we can integrate monitor capacity development with activism, but it would be good to build the capacity of monitors to become researchers or whatever they feel to be important skills development for career pathways or green skills. The final outcome for them as monitors hasn't been predetermined, but I think it is emerging. The Changing Practice course was suggested to me by Taryn Pereira and Professor Heila Lotz-Sisitka when I started speaking to them about developing this course. It seems really exciting but I'm not sure it is possible to do it properly with the resources and time available, so that is one tension I'm grappling with. But I've already started the course and run one module. We introduced the concept of an assignment but I feel from reading your letter that it is quite thinly embedded. I don't know if I could be a Changing Practice facilitator. To do it justice requires a huge amount of effort and time, and I'm wondering how to marry that with the realities of what we have and what we need to do. But it's very inspiring.

Reuben: From my side I have been quite exposed to the Changing Practice course. Jane and I met long time ago, around 2014, when I was working for the Association of Water and Rural Development (AWARD) in Mpumalanga. We were involved in a project called Resilience in the Limpopo Basin - Olifants (RESILIM-O), which I am still working on, with specific focus to the Blyde catchment just next to Hoedspruit and the Mariepskop area. Our focus is strongly on working with land claimants' communities on natural resource management (NRM) practices relating to

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[20] Community of practice is a concept developed by Etienne Wenger, a social learning specialist (Wenger, Trayner, and De Laat 2011)

ecological restoration. They have their own structures: the Community Property Associations (CPAs). A lot of the youth there are interested in being involved in natural resource management programme (NRMPs). There are serval NRMPs currently being implemented in the Blyde catchment by the Department of Environmental Affairs and other partners, and we have strong focus on capacity development for communities (who are also land-owners) to become future NRMPs managers. All this is taking place in the context of restoring the land for socio-ecological needs. The people who have made land claims have no NRM capacity and their socio-ecological identity has been eroded over the years, but they have a strong interest in learning. We have been involved capacity development through transformative learning approaches like expansive learning – you know it, Jane – a concept not far off from what the Changing Practice course is trying to do.

The big gap that we have identified is how to bring together all the different land users to build integrated restoration structures in which the communities, especially the youth, can participate in. We have explored different options including the potential of an accredited course such as change in practice as a tangible tool to package the expansive learning process– especially for the youth. We are also exploring the use of the concept of activism, not activism in the classic way of protesting out in public, but how to practise socio-ecological justice in a progressive way. So I have an interest to look into the Changing Practice course as a tool to hold all this socio-ecological justice work together. But reading this letter from you got me a bit intimidated. I feel that I need more capacity to run the course, or if not the whole course, then elements of it.

Jane: I didn't mean to intimidate you guys. I was hoping to inspire.

Matthew: More inspire than intimidate. I would like to get to the level where I could facilitate in that manner. I think I am bringing a lot of it into my facilitation but I can see that I need a lot of practice and exposure to the principles.

Reuben: It is a good intimidation, so you did a good job.

Jane: Okay good. It is a contradiction and tension.

Anna: I have an interest in how the Changing Practice course can bring a cognitive or learning experience together with agency and analysis of what is going on in the world. So I think it is a very exciting model, which resonates a lot with what I am interested in.

Jessica: My ex-EMG colleagues Thabo, Siya and I are at the moment doing a 'Changing Practice Lite' course, if I can call it that, with the Western Cape Water Caucus. A lot of the questions that

you guys are raising are also big struggles for me. I was going to design and run the course with Thabo, who did Jane's second course and went on to co-facilitate the third course, so he and I have done two Changing Practice courses together. He has not been available for all the sessions and without him it feels really hard. I'm working in a different way, in a different space, I guess.

Jane: I've also been working with Changing Practice in a different space, with WWF-SA (World-Wide Fund for Nature South Africa), with their freshwater team, looking at convening partnerships in water source areas. It is not an activist situation, so it has been really challenging for me. And I'm working with a professional corporate coach. But I have found that the principles of the course can be adapted to this situation. Amazingly enough it does even start bringing up those deeper conversations, like what things stop us from actually facing change. And also limitations, like what is possible within an organization like WWF and what has to happen outside the organization – issues that we also came up with in the Changing Practice course. Taryn Pereira actually did a whole session in the Changing Practice course on expectations and possibilities.

Jessica: Before we move on, Jane, I would just like to say that I found it an incredibly generous letter. You give a huge amount of yourself in the way you describe it. The thing that really came through for me is your immense empathy and solidarity. And just to respond to Matthew and Reuben, who were not there at the course – I think Jane left out a really difficult thing, which is organizing. How do you organize in spaces where people are so fractured? Even to physically get them to a course! I think it is a beautiful letter. You have transformed the really difficult parts and shown us how to approach them compassionately.

Jane: Thanks Jessica. We were really lucky to be able to run it twice within social movements, first the SAWC and then the Olifants civil society network. Now that I look back, I think the primary principle is how you engage with people. Relationship building is so often forgotten in a course, that is what the liberation thinkers remind us about. We have to see ourselves as being alongside the participants, but it is hard. What you said is important about the energy it takes to get people to one space: transport across landscapes, with people whose lives are so often fractured. So much work goes into just the organizing. At least it's not like a university, where students arrive – some of them no doubt with great difficulty but no-one asks about that -- and the university expects them to immediately behave in a particular way.

You can't do that for this kind of learning. As facilitator you have to be the organizer and the travel coordinator: these aspects of relationship building are as important as everything else.

3.3 The solidarity practice of organizing and motivating

Matthew: I have not facilitated a proper Changing Practice course, but in my Masters and PhD I worked with a civil society organization on local water issues in Makana. I also supported the emergence of a catchment management forum (CMF) where the logistics behind organizing meetings and workshops took way more time than the actual meeting and the reporting. That kind of effort and time and relationship-building isn't really valued or acknowledged in the academic measuring of competence.

Reuben: We ran a lot of these practice-based workshops within AWARD for seven years, and it made me realize just how long it takes to build relationships. It takes forever. And half of the time, like Matthew is saying, it is not seen as part of the outcome.

Anna: I'm really interested in how much effort goes into the 'logistics', but also in the step before that – how do people get chosen to join the Changing Practice course, given that it is very different from other educational or training experience? What motivation are you looking for? You want to make sure, with all that effort, that they have a genuine interest to be there. I suppose my question is: how does the motivation emerge?

Jane: I think both Jessica and I can speak to this. I go back to what Fanon says, that there is only so far we can take an idea as a concept. After that we have to enact it. Learning how to enact it, the internal shift – that is the hardest part. To move your centre so that you are in solidarity with the people you are working with, that comes first. Yes, it does look like communities are fractured, but there are structures within them. Some of these structures are admittedly distorted, but some are extremely strong. like the women's groups in many communities. About their motivation, the whole course is based on what people bring, which is deep concern about things in their own lives and a concern for their own lives. Even if you are there to teach about climate, say, you have to help them to find that core concern. Take for example the Itumeleng Youth group, who came to the last course. They were three young people. They didn't have a formal organization, they met at the back of a shop. Their concern was that twenty-four people had died in their community in the space of a few years. They never knew why, although

they had all sorts of suspicions. They sensed it had something to do with the stream coming into the river from the mine, or maybe something to do with the pollution of the river by the community. That was their motivation. Everything revolved around that.

Jessica: A couple of things are going through my head. One that I found really enlightening is the point you quote Fanon, about the enactment and shifting of solidarity. That is critical, and you make that point very well. I think, though, that the motivation is not always identical to people's core issues. Because people do drop out, they do lose enthusiasm, and it is difficult to face things that are so hard. That is another conversation that we can talk about another time. For me the answer is this question of solidarity. It is damn hard work.

The other thing, which I'm seeing now in the Western Cape, is that it is very hard to get a group of individuals, say twelve people, to sustain themselves over eighteen months. However, if you don't see people as separate then there may be twelve people that flow through but they haven't all done the same thing. Maybe there is core of eight dedicated participants at one point in the course and then another core of five dedicated participants at another point in the course. It is also about us rethinking and understanding. It's amazing to be able to hold the space for people to go through the full Changing Practice process, but the reality is it doesn't work that way, in my experience. It was difficult in the Western Cape and the Eastern Cape water caucus didn't make it through that course for a whole load of reasons. So there are institutional, organizational and individual questions that we can explore further. It is not a focus of your letter and I'm not sure that it needs to be. But it was at the heart of what we were trying to understand in that Water Research Commission project – how to organize and bring new ways of learning and evidence-based gathering into a movement like the SAWC. Understanding what we mean by a movement is a whole other story.

Jane: That's an important point, because we think it's only activists and communities who struggle like this. Even trying to get a bunch of WWF people together who are being paid to be there, it's amazing how many don't make it. Running the course means continually looking at your own learning process and noticing its contradictions. In the papers I've written for the PhD, the first contradiction was around race, the second contradiction around gender, and the third contradiction around what we mean by care. Solidarity and institution-building is the newest contradiction – that was is what we were left with at the end of the third Changing Practice course. Taryn is also trying to understand it. How do we actually start working with that, with

organizations that are not even able to be in solidarity? So ja, that is our own new change project for the Changing Practice course. [laughter]

3.4 Accrediting the course

Matthew: What does fluidity of participation mean if the course is formally accredited and there is assessment? How do you manage discontinuities, like if you have some who have been there the whole time, committed and doing assignments, and others not? I'd like to hear how you have managed that.

Jane: This tension around assessment comes up as soon as you want to accredit a course. I think we managed it quite creatively. I made sure that it was my responsibility to negotiate so that it didn't weigh too heavily on the other facilitators, although I think it did affect them. We started off with a set of non-negotiable conditions of the course. One was that you had to attend all the modules. Unless there was a situation where you couldn't, like you were due to give birth or something like that, but even this takes negotiation. Sometimes people's activism itself got in the way. For example you might be demanding they come to the course module, and they have a vital meeting in Johannesburg as part of their mobilisation against a mining company. So you have to be a bit open to the fact that there are other important things happening in people's lives.

Getting everyone there on time was also difficult. Often people would be sick or things would be happening outside their control. All you can do is the best you can, and some people will fall off. In the last course we had the least number falling off, and that was because of the groundwork done by December Ndhlovu and Stella Horgan. They kept that group together.

If people are at the course representing organizations rather than as individuals, that can make it easier. One woman on the last course stopped coming because she got an opportunity to be trained as an actor on TV, this was her lifelong dream. She missed the last two modules, but the activist she worked with was very competent, he kept her on board the whole time. He told me he had checked with all the Changing Practice participants and they didn't see any reason why she shouldn't get an accreditation. They felt she was part of the group, had done the work, and had contributed to the change project. I put her request to Heila Lotz-Sisitka as the official representative of Rhodes University, and Heila said she would get an accredited certificate. On

the other hand, another two who dropped out on that course were from a university and surprisingly they found the Changing Practice course harder to attend than anyone else. They were only given a certificate of attendance.

The criteria for attending the course were: you had to be present at all modules, and have a level 12 certificate or otherwise give evidence of prior learning. You had to be able to speak and write to a certain standard of English because we hadn't got to a stage where we could run the course in other languages (although in the first course we did offer an option for people to write up their final change projects in isiXhosa). But it is difficult. Luckily Heila trusts me to make sure that the integrity of the course is held and the quality is there – if I hadn't had her on my side it would have been a lot harder. The point I really wanted to make was that the group forms a cohesion, so it is the group is graduating not the individuals.

Matthew: In the course I'm in the process of running, they are already in groups, although they are different types of monitors. Even if there were only six monitors, could we have a group?

Jane: I'd split them up into two groups of three and three, with each working on a particular aspect of their core concern. Something like that. For the second Changing Practice course we had a group of three people from Mpumalanga. The distances they had to travel to get together and work together made things really difficult. You have to think through all of that as well – making sure people on the change project can access one another easily so that their working together doesn't become another burden.

3.5 Working in a team with different skills

Jessica: One thing that struck me while reading your letter, which I became more aware of as we worked together, was the strength that you bring from your knowledge of educational theory. I've been working in the NGO sector forever and I've facilitated a gazillion meetings and workshops and processes, but I don't come from an education background at all. I think you brought enormous value in helping us understand education theory. Thabo and I used to sit for ages after we first met Jane, asking each other 'what was she talking about?' And when Heila spoke it was even more confusing. CHAT (cultural historical activity theory) and all these other things were quite removed from our practice experience. Not everyone has to understand the science of climate change but it really helps to know the science if you are trying to explain it. The

same with educational theory, and it's a really important element to have someone who knows in the team. I almost felt I was also an environmental educator after reading your letter. Maybe the broader question is to reflect on what the roles of the team need to be – they don't all need to be in one person and they can be divided in different ways. I think about you and me and Thabo and Taryn and December and Stella, how we all brought very different experiences and skills. Could we maybe pull out what some of those are, over and above the educator skills that help strengthen the course.

Jane: I would love to do that. There are so many valuable skills. It was amazing to run the course in EMG. It freed me up to take on all that theory and focus on it, while having these wonderful embedded activist practitioners bringing social movement organizing skills. They enriched the second Changing Practice course tremendously. Let's make the conversation next time about pulling out what those skills are.

Jessica: Thanks. I have to sneak out now, my power is cutting at 10am. Goodbye!

3.6 Resisting a Changing Practice teaching handbook

Anna: The letter resists writing up a kind of guidebook or course manual. I like that, and agree with it, because it is always problematic to try and reproduce an educational experience, and every pedagogy has to be completely reinvented in each context of practice. Your letter gives really good advice in highlighting the general tensions in doing this work.   However what I'm thinking now, and knowing all the people that have been involved in this course, is that there should be something like a Changing Practice reference group. Whenever I'm struggling with the work I've been involved in, I often call on you, Jane for some emotional support, and that has been most valuable. You never tell me what to do. You have some experience that resonates with mine and you help me make sense of it. A reference group would be like that, but collectively.

Also in the letter, to follow on Jessica's point about education theory, you push back against what we can call ideological educational theory. You realize that even when people are in a room that is not set up in a classroom style, they easily fall back into the teacher and pupil power relation. Or the way in which particular setups or relations or kinds of language create barriers. You think about how to cultivate a space for emergent learning, allowing things to emerge. I guess I am

trying to make a distinction between this educational sensibility which informs your work, and an educational theory.

Jane: That helps a lot because I struggle to articulate this. I usually think of it as an embodied approach, which also includes the theory being embodied.

Anna: Totally.

Jane: Setting that sensibility or tone is one of the roles of the lead facilitator. With each course I've run, I think I've been able to see and encourage the strength of what each co-facilitator brings. December Ndhlovu has no background in educational theory, but he's a passionate activist, and he bought that passion and understanding into the course. It is learning to weave people's particular strengths.

You can't do this if the person leading a course is very dominant, so I try to step back. Of course that means allowing people to make mistakes, but I'm not afraid of that. If there was a problem or mistake, I would help weave it back into the course from the back. It is more important to have a process where less experienced facilitators can learn, in a space where they were trusted. The participants see the facilitators' learning unfolding, which is part of how they are learning to learn'.

Anna: You wrote about that very beautifully in that paper about the work that facilitators do to meet each other[21]. If you facilitate with Injairu Kulundu she will say: when you facilitate with other people, it's like having a crocodile, a squirrel and a giraffe in a boat and they have to decide how to get to the other side. We assume that because people have education experience, they can get together and run a course, and have the same understanding of what happens. But they have very different understandings. That is the learning of the facilitator.

Jane: Yes, and it's not only about knowledge. If you are working with somebody who is afraid of failure or afraid of being embarrassed, you have to work very hard at defusing and alleviating those emotions beforehand, because otherwise they can so easily derail. It's the powerful people who are problematic here, not those with little experience. The ones with little experience may be insecure or nervous, but you'll find they will be OK if you trust them completely. But navigating a process with people who are used to having lots of power and control is hard, they

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[21] Article 2: "Entering the mud"

are usually the ones with the most fear. Whether they are facilitators or participants, I love seeing people blossom. It is so rewarding to see a person take that space and be who they are.

Reuben: I think I will need to read your letter again and try to reconfigure based on this conversation. It would be good to discuss it more, specifying what is possible for us to do. I'd like to be able to see how to work with this going forward.

Jane: We have an informal group called the Changing Practice coalition. We are on a WhatsApp group and we meet via Zoom. We could possibly use the coalition for our reference group. I could also do with some advice at the moment, as this WWF work is a whole new space for me. The Changing Practice coalition is everyone who was part of the last two Changing Practice courses. I would really love Nina Rivers and Treve Jenkin to join us as they were part of the first Changing Practice course, also Thabo Lusithi, who works for EMG, and December Ndhlovu, who has become the community journalist with Zingela Ulwazi in Limpopo. If you, Reuben, ever want a facilitator to help you on your course he is brilliant. Stella Horgan is absolutely fantastic too. Both of them are live near Mariepskop. So is Jessica Wilson, who is independent now, but used to work for EMG. Then there is myself, and Taryn Pereira. Victor Munnik is on the edges, he is part of it when he can, and Anna James as well.

Matthew: It would be lovely to have the support. You said in your letter how valuable it was to identify a facilitator that you admire, someone that you really learn from. I was thinking who could that be for me. Someone who can show me how to be a better facilitator. Someone who could I just be a participant with, or a peripheral observer, before taking on more.

Anna: How do you learn to facilitate popular education processes? For me the answer is this idea of an apprentice. Someone who is a bit older than I am, and knows how to facilitate well. All of us identifying a mentor. Someone who can be the reference for us in learning how to facilitate well.

3.7 Self-care and reflexive practice

Matthew: Another thing that came up for me in your letter was self-care. I liked how you gave some practical examples of how you do that. Our project is one of these over-ambitious government projects. Everyone is over-committed and overworked. Deliverables everywhere and people are breaking down. It is brutal. I'm often bringing up the idea of self-care, caring for

ourselves, but how do we practice this? Managing your time well, yes, and what else? The importance of reflection and reflexive practice before and after the sessions. How would you guide that, would it be informal?

Jane: Your questions sound like practical questions, but they raise things at multiple levels. Bhaskar says agency only happens when there is a change in relationship at four levels: the relationship with self (in other words, self-care), relationship with others, with structure, and with the world. Our institutions are really messed up in this respect - they are not set up for self-care, they are set up for mass production. The university is the same. I feel sorry for people in universities at the moment, they are very difficult places to work in, I suppose so are other institutions.

As you said, we talk about it, but we don't do it. It is particularly hard to have such conversations with people who spend a lot of time in their heads. It is easier when you are working with communities or some of the NGOs which use a self-reflexive practice. They usually get it and then start looking for ways out of it. Sometimes they can't, because of the structures they work in. If you use CHAT theory, or any theory, you should look especially for the contradiction that prevents people from caring for themselves. For the activists we realised quite clearly that one obstacle was time management, although it's like that with academics as well. My friends in the academy don't plan their weeks. Take the simple task of sitting down on a Monday morning, looking at what you have committed to, whether you can do everything you have promised to do by the end of the week. I don't know anyone who does that.

During the course the activists wanted a planning exercise to organize a workshop. Then they realised they had not allowed enough time for the planning session! At the time we all laughed. But academics are even worse, they commit to organizing five workshops, writing two papers, finishing a report. Then they are surprised when their PhD and Masters students fall by the wayside. Matthew you are right when you say it is brutal. If it's a hierarchical structure, the manager or the director or head of department sets the tone of the working culture.

Matthew: What we call self-care – the time you put aside to reflect, plan your day, go for a run or eat a healthy meal – should be just as important as the time spent writing that report.

Jane: With the Changing Practice course we tried to mirror this in the course. We didn't want people to arrive at 8am and work solidly until 7pm. We built in moments for being able to chill, even if it was just for 15 minutes. Having time to sit together and chat. Doing exercises together if

people wanted to. One participant asked if we could start 15 minutes later as he was struggling to fit in his run before the sessions started. Another asked for extra time over lunch as this was the only time she could call her family. We took these requests seriously and discussed them with facilitators and participants, and then changed the timetable. In line with what Gramsci and Fanon said, we were trying to create different ways of relating and practise these within our organizations. So we were not only running a course, we were trying to embody a different way of functioning as human beings.

Anna: Such an interesting concern. I was just thinking, as you were speaking, about the boundaries crossed in the Changing Practice course. The course really exposes the glorification of busy-ness because you engage with people who are maybe unemployed, and who will be doing very important care work in their community. At the same time, you are completely overworked. Already there is a contradiction.

When you were talking about Bhaskar's theory of agency, that agency happens in relation to self, other, structure and environment. It might be interesting to reconsider the concept of self-care in this way. How do we enable each other to care for ourselves? The term self-care should be changed to self-collective care.

Jane: That's where Bhaskar's conviction is so useful – that you have to engage in all four levels of agency for transformation to happen. If you only work at the level of self but not in relation to others as well as in relation to structure, then your agency will be limited. I'm sure you have felt that. If you have ever worked for an organization when you wanted to take care of yourself, but the organization wouldn't change.

As soon as we see the contradiction, the question of power arises. Where can we find the power to shift things? Sometimes we can just use the power we have in order to walk away, because what is happening is too damaging. It is a hard one. If there is a hierarchical structure and an organization caught in an addiction to power, it is very difficult, because you're dealing with a defence mechanism. If it is a defence against facing its own pain, it will inflict pain.

Reflexive practice takes a lot of preparation, and then you still have let go of the structure. Nevertheless you have to make sure there is enough structure for reflection, because if you don't have structure, it won't happen at all, and then the letting go doesn't happen either. Self-care is part of this. For example when you are leading, you need time alone to process what is happening so you can be present in reflection. I try to get everybody who is facilitating to get

together before we facilitate as a team. Not necessarily at the end of each day, as people can be very tired after a day of facilitating.

Jessica [added during the editing of this conversation]: Another tension arises when meeting as facilitators while running a course – complex dynamics emerge within the broader group and if the facilitators are using the 'between times' to meet separately, they can be isolated from other important processes and conversations. It can create a feeling of division, which potentially impacts on trust and understanding.

Matthew: What you said about being tired at the end of the day is also what I feel. After the last course I ran, I didn't reflect because everyone was so tired. But we did our reflection in the bus on the way home.

Jane: Exactly. So it is useful to observe people's energies, and decide the most useful time. Sometimes not everyone will be there, one facilitator's child could be ill, for example. Time for reflection is something you continually have to weave in. If you notice that there is a major contradiction emerging, and you can start seeing the facilitators getting tense, then you can call time for a reflection. Stella Horgan was very good at this in our last course because she has training in trauma counselling and she was quick to pick up when participants were getting tense. She would tell the facilitators we needed 10 minutes at lunchtime to get together and have a quick chat. Thabo Lusithi was very good at this too. He could feel the group dynamics and people trusted him and would confide in him first. I always appreciated in his reflections how he picked up contradictions that were emerging between us.

Facilitating is a kind of performance, so it is nice to have someone who is holding the room with you. Also, one should not forget that the reflexive space is not only about talking. It is about being present. I learnt that from a facilitator in England. He always had somebody in the team for support, someone who would hand out papers with him, set up his flipchart or computer projections. That is also part of reflexive awareness and care.

Matthew : Good advice to be alert to contradictions, to notice and then try to have a check-in moment.

Jane: A good signal is when you see more people are starting to check their cell phones!

3.8 Building community

Matthew: How long are your sessions?

Jane: Three and a half days. This has to do with people's time and commitments, and also the cost. We made them three and a half as we couldn't afford four nights' accommodation for everyone. As Jessica said, there is a lot of organizing about how you negotiate your limits.

Reuben: What about spreading the contact sessions over a one-or-two day workshop, then take a two day break, and then continue. Have you ever tried something like that?

Jane: I have, but not in the Changing Practice course. You should just go ahead and experiment. Weave it together in a way that feels possible. I do find that having people staying overnight, whether at the end of the course or the beginning, does generate a group cohesion. Just to stay together in the same place, and eat meals together. Also to create small rituals. In the Changing Practice course we always welcome ourselves in the new space. If there are people that find this strange you can do it subtly. But you will find that people who are used to community practice will appreciate it. In the Changing Practice course we would fetch something from the external environment, or something from home, and bring it into the space. You greet the space, you greet each other, you eat meals together. We shouldn't underestimate the power of these moments of community. Bringing them in and ask the participants to bring them in. People open up to it because it is familiar.

Matthew: We were fortunate to have Athina Copteros as part of our facilitation team. What she brings with her dance movement and psychotherapy background is phenomenal. Especially for the first module, which was all about building relationships and getting to know each other. Her facilitation methods and ability to hold the space safely was so valuable. It created an important groundwork for upcoming modules. Not everyone has the ability to facilitate like that, but I definitely would like to embody a bit more of that kind of practice.

Jane: Athina and I co-facilitated many years ago. It is a matter of noticing what the other person does. You pick up a few things from her, you try them out yourself. Everyone can learn like this because it is being in community, it is relearning to be in community in some way.

Matthew: And especially not being afraid of messing up.

Jane: Sometimes in the Changing Practice courses I just admit to my mess up. I'll be doing something and lose focus and I'll just say to everyone I don't know what the hell I'm doing, I'm confused, I'm tired. I ask for a break, explaining that I'm not with it at the moment. People appreciate that you are human. I've even cried in front of the participants. We did a gender

dialogue and it touched something in me that was so tender, that I just cried. Afterwards I was worried about it but in the end the process brought us closer together.

Matthew: Being vulnerable is a sign of you feeling safe in a space.

Jane: That's a good point, especially in South Africa where safety is not one of our strong points.

Anna: I'd like to say one more thing. I hope this conversation continues.

Jane: Well, let's make sure it does.

Part 3: References

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Appendices

Appendix A: Final research reports which included the Changing Practice courses

These documents are the final reports on research or implementation projects. The first report is on a research project that culminated in the development of the Changing Practice course. The second report documents how we adjusted this course for social movement learning for the South African Water Caucus. This included how activists could contribute to research through engagement in the course. The final report is on the implementation of the Changing Practice course at a catchment scale. Please click on the report name to be directed to the report.

3. Changing Practice course: Eastern Cape communities and question-based resources - The role of knowledge in a democratic society: Investigations into the mediation and change-oriented learning in water management practices

4. Changing Practice course: South African Water Caucus and monitoring the National Water Resource Strategy 2 – Citizen monitoring of the NWRS 2

5. Changing Practice course: Olifants catchment civil society organisation network and resilience through collective action – Changing Practice: Olifants catchment Final report

Appendix B: Change projects by Changing Practice participants

This appendix documents the change project case booklets of the participants of the Changing Practice course. If you wish to use the information in these case booklets please reference them correctly and in line with scholarly principles. Please do not use these cases as evidence in personal research without gaining direct permission from the authors. Please refrain from uploading any of these documents onto websites or other platforms without permission from authors. This is part of our commitment to cognitive justice in practice.

Changing Practice course: Eastern Cape communities and question-based resources (2012–2014)

1. Amanzi Acocekileyo by Sithokozile Yalo (Organisation: Eastern Cape Wildlife and Environment Society of South Africa).
2. Starting Asset Based Community Development and Permaculture at WB Tshume and Emzomncane Primary School by Carla Collins (Organisation: Calabash Trust).
3. Grey water booklet by Alyrian Laure (draft version) (Organisation: Calabash Trust)
4. Amatola wild trout in our community by Ntsiki (draft version)(Organisation: Border Rural Committee)
5. Tour guides for community by Pumeza Mqalo (draft version) (Organisation: Border Rural Committee)
6. Sharing and caring for a rainwater tank by Sibongile Mphuthing (Organisation: Galela Amanzi)
7. Mulch for a healthy garden by Lunga Mhlonyane (Organisation: Eastern Cape Wildlife and Environment Society of South Africa)

Changing Practice course: South African Water Caucus and monitoring the National Water Resource Strategy 2

1. [Devices put livelihoods at risk in Dunoon by Thabo Lusithi and Manelisi James](#)
   (Organisation: Western Cape Water Caucus, Environmental Monitoring Group, Dunoon Advice Office)
2. [Water and Tradition by Mduduzi Tshabalala,Thandiwe Ngcanga and Samson Mokoena](#)
   (Organisation: Gauteng Water Caucus, Vaal Environmental Justice Alliance)
3. [Saving Moholoholo by December Ndlhovu, Dr Alex Mashile and Patricia Mdluli](#)
   (Organisation: Mpumalanga Water Caucus, Environmental Monitoring Grop)

Changing Practice course: Olifants catchment civil society organisation network

1. [Being the voice of the Brugspruit wetland By Collen Jolobe, Lorraine Kakaza and Susan Boledi](#) (Organisation: Social Environment Justice in Action/Action Voices)
2. [Corporate compliance of the Twickenham mine's social and labour plan by Elton Thobejane and Provia Sekome](#) (Organisation: Come-Act)
3. [A silent killer : The case of the Santa Village community living next to a mine dump by Elvis Komane and Nthabiseng Mahlangu](#) (Organisation: CULISA)
4. [A mountain of disposable nappies by Tshepo Sibiya, Kedibone Ntobeng and Christina Khanyile Mothupi](#) (Organisation: Itumeleng Youth Project)
5. [If poverty is the big question, then farming is the great answer by Caroline Rathokolo and Nelson Thaba](#) (Organisation: Khulumani Support Group)
6. [Reclaiming our farming heritage: Supporting home food growers in four villages in Nkomazi Municipality in Mpumalanga Province by Thelma Nkosi and Bernerd Ngomane](#) (Organisation: Mpumalanga Water Caucus)
7. [The danger of living next to a mine operation by Mmathapelo Thobejane, Tokelo Mahlakoene and Eustine Matsepane](#) (Organisation: Sekhukhune Environmental Justice Network)

Appendix C: Collaborative articles

This appendix documents the published or soon to be published collaborative scholarly articles that became reflexive, learning moments in our collective scholarship. Please click on title to go to the article.

1. [Changing Practice: a course to support water activists in South Africa by Jane Burt and Jessica Wilson](). Article presented at the Action Learning and Action Research Association conference in 2015 as part of a symposium on cognitive justice and environmental learning. It was published in the conference proceedings in 2017.

2. [Being the Earth's comrade: Research for the people, by the people by Jane Burt and Thabo Lusithi](). Presented at a workshop which was part of a broader research project on Traditions of Popular Education Research Project which was housed at University of the Western Cape and funded by National Institute for Humanities and Social Sciences. It was published as a chapter in the book, Forging Solidarity: Popular Education at Work.

3. [Working for a Living: Popular Education as/at work for social-ecological justice by Jane Burt, Anna James, Astrid von Kotze and Shirley Walters](). This article has been accepted for publication by the Southern African Journal of Environmental Education.