An experimental phenomenological study of a systems thinking & contemplative education approach to teaching climate change in educational settings
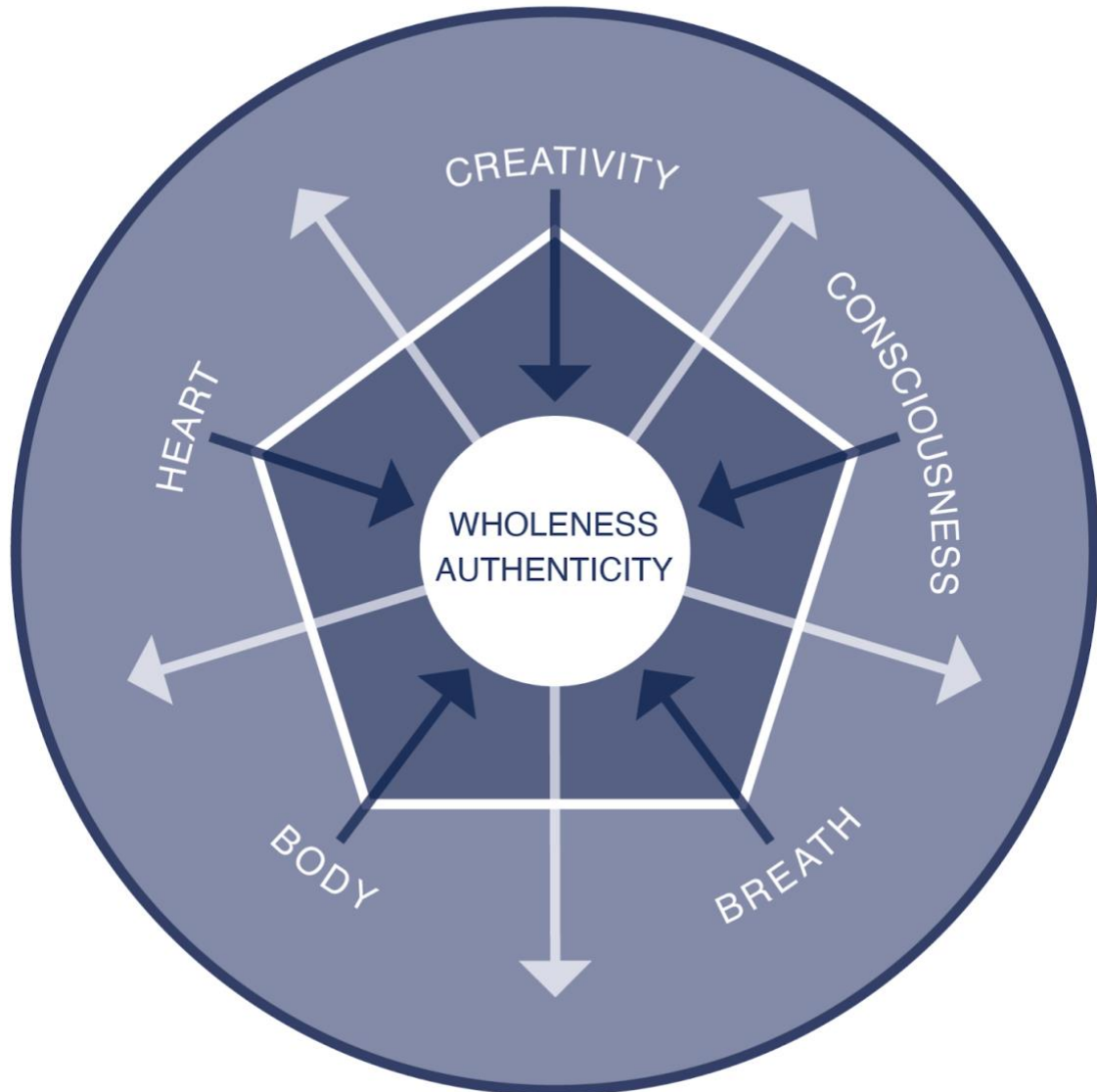

CREATIVITY

CONSCIOUSNESS

HEART

WHOLENESS
AUTHENTICITY

BODY

BREATH

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Abstract

Educational systems constantly shape and rebuild our lives. Faced with the urgency of climate change, the development of knowledge by students about the climate crisis and their own role in global systems is critically important to prepare them for their future lives as global citizens and decision makers. This calls for educational systems to take a more prominent position in educating educators on how knowledge-making and the learning approach to teach climate change can be rethought. Hence this thesis investigates which paradigms can be changed in order to inspire systemic change in the educational system, particularly in the way climate change science is being taught to students. This research investigates a specific case: The online intergenerational Compassionate Climate Programme offered by the Center of System Awareness. It recounts some of the participants' stories and experiences of engaging with a combination of systems thinking and a contemplative education approach to teaching climate change. The experiences of the participants and educators are compared and covered using an experimental phenomenological approach. Through the analysis of interviews, this research shows how the combination of systems thinking and a contemplative education approach can reveal common themes that are described as leverage points for restructuring paradigms in how education on climate change is being taught to students. Within these themes, this research shows how contemplative education creates a room of reflection that can offer an ontological shift in the individual's attitude towards climate change and shows how ontology is inseparable from the individual's cultural context. This means that cultural context and ontology play a crucial role in forming the individual's experience of climate change and this must be considered in how climate change is being taught to students.

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List of Abbreviations:

CSA = Center for Systems Awareness

CCP = Compassionate Climate Programme

CE = Contemplative Education

SDG = Sustainable Development Goals

ACKNOWLEDGEMENTS

PREFACE

This thesis is political, written with intentions of seeking systems change in the educational system from an engaged and activist standpoint. I have been investigating how spirituality, art, psychology, climate change, education and environmental sciences correlate in the past years. This trajectory has led me to questions on how we situate ourselves in the circuits of knowledge-making and teaching and how we can stay grounded, nuanced and sane in this debate.

My interest is in how knowledge-making and the learning approach to teach climate change can be rethought. Thus the ultimate aim of this thesis has been to investigate what paradigms can be changed in order to inspire transformation in the educational settings centred on teaching the issues of climate change. This research investigates one specific case: The Compassionate Climate Leadership Programme facilitated by the Center of System Awareness. It recounts some of the participants' stories and experiences of engaging with the method of teaching climate change the way the Center of System Awareness proposes. The participants' and facilitators' experiences are compared and covered using an experimental phenomenological approach. As I have been writing this thesis, I have been very focused upon how to remain critical; to keep pursuing new aspects of 'the problem'. However, the more inclined I became to find the overlooked issues, the more aware I became of my own 'problem-solving' mental models myself; how fixated I am in my research to always find more issues to criticize and come up with new solutions to. I also noticed myself trying to direct the issues and solutions in ways so I could 'make it fit' by sometimes trying to force connections that might be there and might not. Why, this research process has been a journey of trying to learn and unlearn with the intention of grasping the whole. While grasping the whole may be impossible to pursue with only a logical mind, we can, however, try to come as close as possible to that goal while remaining critical and aware of how our subjectivity is rooted in the cultural contexts we exist in.

1. 1. THE HEART: INTRODUCTION

The world is pushed to its limits, and the Intergovernmental Panel on Climate Change (IPCC) has concluded that global warming is intrinsically linked to human activity (IPCC 2022) thus causing climate change. According to the IPCC these climatic changes affect environmental systems as well as human health, and the consequences of climatic changes are expected to exacerbate over the next decades. Given both the urgency and the scientific complexity of climate change, several scholars emphasize the need to learn how complex systems relate to each other in relation to understanding the depth of climate change (Meadows, 2008; Escobar, 2007; Hornborg, 2013; Malm, 2016; Tsing, 2012;). This calls for innovative solutions to strengthen the bonds between and awareness of how human and natural systems interact and shape each other in future generations (Shepardson, 2011, Kates et al. 2001; Breslyn et al., 2017; Boon, 2010; Sharma; 2012). Furthermore, scholars point to how the vast majority of sustainability science has been focused on the external world of systems such as ecosystems, economic markets, social structures and governance. In doing so, the dimensions of the individual's inner world and subjective reality have been overlooked as a field in sustainability science (Ives et. al., 2019; Woiwode, 2011).

Dahl et al. (2020) emphasize the importance of attending to the inner worlds and thus shift from a growth centred society and to one that acknowledges biophysical limits and human well-being. Here, several scholars call for educational systems to take a more prominent position in educating educators on meaningful and effective ways to tackle the educational settings of climate change teaching approaches (Bresylyn et. al., 2017: Shepardson, 2011; Abson et al., 2017), as it becomes more and more vital to develop students' and future generation's knowledge of the climate crisis and awareness of their own role and interplay in related systems. This is justified by the belief that knowledge-making shapes how we act and interact with the world, and is thus a crucial part of how to solve the climate crisis. This understanding is backed up by science that pushes for the notion of studying how a focus on inner-sustainability relates to a transformation of mindset, values, worldview and beliefs (Ives et al., 2020; Woiwode et al., 2021; Brown et al., 2005). Inspired by these scholars, this study seeks to explore *how* and with *what* consequences the combination of systems awareness[1] and

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[1] See definition in 2.3.

contemplative education[2] (CE), can reveal *leverage points of change*[3] in educational settings focused on teaching climate change. I intend to do so, by undertaking an experimental phenomenological approach combined with the concept of *leverage points* proposed by Donella H. Meadows (1999: 3) to tackle the topic of climate change in educational settings.

1. 2. BACKGROUND OF THE CASE

This study is focused on The Center of System Awareness (CSA) and particularly its Compassionate Climate Programme (CCP). The CSA was founded by lecturer and author Peter Senge and biologist Mette Miriam Boell. The organization grew out of the former Society for Organizational Learning (SoL) launched in 1997 attached to the Massachusetts Institute of Technology Center for Organizational Learning (which was itself founded in 1990). The CSA now works as a worldwide research community connected by a global web of hubs, project sites and collaborative partnerships (CSA 2022b). The center's work is built on theories of systems thinking and organizational learning with the notion of 'systems awareness', as they seek to focus more directly on "the quality of awareness - individually and collectively - that underlines our actions" in order to foster a systems change in educational systems globally (CSA 2022a). They work with inspiration from the phrase *'think globally, act locally'*[4], to advance systems change in both education and the world. The center highlights the importance of integrating contemplative practices in educational settings to foster systems awareness. The idea of system awareness is to first become aware of the systems in order to change them, as the center believes that systems awareness is the key to systems change on a societal scale (CSA 2022a).

1. 3. MOTIVE

This thesis is centred on the CCP that took place online over 12 Zoom sessions from October 2021 to April 2022. The programme is primarily addressed to educators who are working in educational settings across the globe and are teaching students about climate change. There

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[2] See definition in 2.4.

[3] When I am discussing change I am referring to a systems change in the paradigms of knowledge-making in educational settings.

[4] The phrase urges people to consider the health of the whole planet and to take action in their own communities. The first use of the phrase in environmental contexts is disputed but now works as a global concept.

were 18 intergenerational participants in the age range from 12 years old to retired. The strategy behind the programme encompasses three main intentions: (1) to train the participants to become youth-ambassadors to support students in their individual schools to learn about systems awareness and CE, (2) to cultivate and facilitate a global network of ambassadors across the world to create action around climate change, (3) to connect systems awareness and a contemplative framework (CE) to help students and social youth movements to stay grounded while facing the challenges of climate change (CSA 2022c). I have chosen to focus on the third intention of the programme, in order to view *how* and *what* consequences systems thinking and CE combined can bring to educational settings centred on teaching the climate crisis. I have done so, by having an experimental phenomenological approach to my empirical data, which was gathered using several methods, such as participant observation and semi-structured in-depth interviews. Doing so, I have been focused on what the participants experienced during the CCP and how their experiences can be used to reveal leverage points of change in educational settings. The participants I interviewed from the CCP are primarily educators situated in schools in different contexts across the world: Indonesia, China and the United States. Therefore, cultural context and the differences among them are a crucial part of my analysis which will be described in section 4.6.

1. **4. AIM AND PURPOSE OF THE STUDY**

I chose this topic due to my interest in the circuits of power in knowledge-making in educational systems. Thus, this research seeks to highlight the role of knowledge-making in order to portray the important role these narratives play in human relation to climate change. This means becoming aware of how educational systems shape human lives constantly, especially, as the world is facing the issue and urgency of climate change, and the development of students' knowledge of the climate change and their own role in the system is critically important to prepare them for their future lives as global citizens and future decision makers (Boon, 2010; Breslyn et al. 2017; Sharma, 2012).

On one hand, this study aims to explore how cultural context plays into the knowledge making and practices in the participant's experiences. On the other hand, it investigates how these knowledge-practices become evident in the participant's experiences of them. As I am here highlighting the role of the individual, I want to stress that climate change is a structural issue on much grander scales than what individuals alone can solve themselves, and I do not wish to

address responsibility toward climate solutions on a sorely individual level. It is the balance between the individual and their awareness of how the larger systems of society affects them that is the focus of this thesis. By undertaking this study, I will explore the opportunity that exists in each individual's ability to advocate for change both within themselves and among the ones in power, in order to become catalysts who promote ethical and sustainable behaviour that advocates for change. Therefore, this research purpose is to challenge and question the view on how educational settings are teaching climate change to inspire future learning and the application of new methods.

1. 5. RESEARCH QUESTIONS

The nature of this research is more exploratory and descriptive than it is explanatory. Inspired by the declared research aims and purposes from the previous section, I intend to explore this research by finding answers to the following questions:

1. How did the participants experience the CCP in relation to the facilitators' choices for the program? And what were the participants' experiences of engaging in the CCP?
2. How can the participants' experiences be used to reveal leverage points of change in how the subject of climate change is being taught in educational settings?

1. 6. STRUCTURE OF THESIS

I have chosen to structure this thesis into five chapters inspired by 'The Pentagon'[5] shown on the title page since this thesis is dealing with holistic thinking from a systems perspective. 'The Pentagon' reflects what can be considered as some of the most essential parts of the human whole. I have chosen this model as a metaphor for viewing this thesis as a body of work in itself. As no analysis can be done without an existence that can dissolve into smaller and smaller parts, no synthesis can be made without that which already exists as separate and smaller constituents. Chapter 1 'the heart' reflects the introduction to my study, in which the background information, research aim, purpose, and research questions appear. Chapter 2 'the breath' reflects my methodology, choice of methods, ontological stance and situatedness.

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[5] 'The Pentagon' is developed by dr. phil, writer and spiritual teacher Jes Bertelsen and it is released for public use (Bornslivskunskab 2022).

Chapter 3 the body, reflects my theoretical framework that has continued to expand throughout this research process. Based on this, chapter 4 'ground creativity' represents my findings and analysis that are woven together. Chapter 5 'consciousness' refers to my contemplation and discussion of the study's findings.

2.1 THE BODY: THEORETICAL AND ANALYTICAL FRAMEWORK

This chapter explores the accretion of theory that has inspired and expanded throughout this research process. It has emerged from the theories of systems thinking, phenomenology and contemplative education, into the fields of intersectionality and philosophy. All these theoretical fields relate to questions of knowledge-making in educational research. Through these theories, I have explored how the paradigms of knowledge-making are essential to deconstruct to understand. The context and situatedness of both my research and applied theory becomes crucial and thus, my aim with this chapter is to give an overview of the theoretical foundation that creates the basis for my analysis in Chapter 5.

2. 2 THE FIELD OF PHENOMENOLOGY

Phenomenology is a wide-spread field of approaches that are used both as methods and as a theory. It has been largely considered in the field of educational research and several scholars argue for the necessity to include a phenomenological inquiry to educational research (Barnacle, 2004; Neubauer et al., 2019; Van Manen, 1997). Neubauer et al. (2019) claim that phenomenology is a great research approach to learn from the experiences of others in educational research, as it seeks to describe the essence of a phenomenon by exploring it from the different perspectives of those who have experienced it, in terms of *what* was experienced and *how* it was experienced. According to Neubauer, phenomenology is the study of an individual's *lived* experience of the world (Ibid: 91-92). Neubauer underlines the importance of paying attention to the methodological differences between the two approaches of transcendental and hermeneutic phenomenology, and views how these two approaches can be seen in relation to educational research. The two approaches are considered as the start of phenomenology and are associated with the two philosophers Martin Heidegger (1967 [orig. 1927]) and Edmund Husserl (1970 [orig. 1938]).

Transcendental and hermeneutic phenomenology are rooted in different schools of philosophy and thus different ways of conceiving of *what* and *how* the human experience can be explained. While Husserl was focused on the epistemological[6] nature of knowledge, Heidegger was more interested in the ontological[7] temporality of being. Heidegger's hermeneutic phenomenology underlines how humans cannot experience a phenomenon without referring back to their background understanding, as this mode of phenomenology seeks, "to understand the deeper layers of human experience that lay obscured beneath surface awareness and how the individual's lifeworld, or the world as he or she pre-reflectively experiences it, influences this experience" (Neubauer et al., 2019: 94). This means, according to Heidegger, that researchers can never deny their own experiences and these experiences will colour all other experiences. This differs epistemologically from Husserl's understanding of transcendental phenomenology, as it is the method of description to approach the lived world. This represents a shift from the focus on the world, to a phenomenological attitude characterized by the focus of the experience of being in *the lived world* (Husserl, 1970). Thus, a Husserl phenomenological inquiry seeks to understand the whole, "to understand the phenomenon as it is lived by a person" (Neubauer et al. 2019: 92).

Philosopher Max Van Manen (1997) has translated hermeneutic phenomenology into the context of educational research in a research model based on the notion of the lived experience. He highlights how phenomenology should be seen as a Western research method and should not be confused as an eastern meditative technique to achieve insights on the 'meaning of life'. He defines the main difference as being in the western science that approaches the meaning of the lived experience by language, whereas eastern practice uses non-script oriented reflective techniques (Ibid: 23). Van Manen provides a basis for educational researchers to include their own experiences as educators, however he acknowledges the importance of not just reflecting upon one's own role because "phenomenology consists in mediating in a personal way the antinomy of particularity (being interested in concreteness, difference and what is unique) and universality (being interested in the essential, in difference that makes a difference)" (Ibid). Thus, he points to the importance of staying curious and reflecting upon differences and universality in the phenomenological approach to educational research by including both praxis

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[6] Epistemology considers theory of knowledge with regard to methods, validity, and research scope.
[7] Ontology considers the nature of 'being' both as a branch of metaphysics and as concepts and theories of what exists and how it exists.

and theory in the inquiry, while staying critical towards the privileged position the educator has to the question of what it means to learn.

Van Manen's lived experience approach is rooted in the hermeneutic phenomenology, yet Barnacle (2004) argues that the lived-experience research approach is not entirely incompatible with Husserl's life-world approach. Husserl was interested in a structural condition of the phenomenon and Van Manen focuses on how this condition is experienced by particular individuals. Hence the value of the lived experience approach is in the extent it values the researcher's own particular experience as an educational practitioner (Ibid: 59-60). According to Van Manen (1997) phenomenology is about universality, autonomy and differences (Ibid: 23). He points to the paradox in using phenomenology as a research approach in educational research, that is how a practicing educator can explain what it is like to teach only given by the privilege the educator has, to question what it means to learn or to the nature of learning itself (Ibid).

Experimental phenomenology[8] is a subcategory of phenomenology that is more focused upon the practice and application of phenomenology than the philosophical theoretical framework of phenomenology. It rests on the same basic capacity for showing introspective attention which also lies as a foundation for descriptive phenomenological methods (Lundh, 2020). Liliana Albertazzi (2019: 2191) argues that experimental phenomenology is a science of phenomena that can be used to reveal radical change of viewpoint concerning the concepts of nature and consciousness. She defines experimental phenomenology as "the study of appearances in subjective awareness", in which by identifying the patterns of experiences, the goal is not only to describe or explain the experiences but to employ 'the first person account' of the subjective experiences that became meaningful experiences.

Inspired by these reflections of phenomenology, I will depart here toward experimental phenomenology that is inspired but yet varied and unorthodox from Husserl's understanding of phenomenology and is beneficial when the subject is related to research on mindfulness or CE because mindfulness is to pay attention to a present experience with a specific attitude. (Lundh, 2022). Lundh (2020: 493) argues that research on meditation and contemplative

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[8] The theoretical foundations of experimental phenomenology is only dealt with briefly here. For a more detailed description, see Lundh (2020).

practices/CE need to be "person-oriented, experience-near, phenomenological research that can help to delineate concrete processes of change at the level of the individual", meaning that experimental phenomenology is first and foremost a person-oriented form of research in which context and person may be systematically varied. In the context of this research, experimental phenomenology is defined as "the investigation of phenomenological practices and their effects on subsequent experience. This means that "experimental phenomenology stays entirely at the level of experiences." (Ibid: 497). Thus, phenomenological practice is in this research context understood as the practice of CE and my use of experimental phenomenology will be described further in section 3.2 and discussed as a method in section 5.3.

2. 3 THE SCOPE OF SYSTEMS THINKING

The idea of teaching system thinking both as a methodology and a principle has emerged in research on education over the last decade (Meadows, 2008; Mobus, 2018; Senge, 2006; Shaked et al. 2016), as the correlation between education and sustainability science have brought in ideas of systems thinking to "understand the fundamental character of interactions between nature and society" (Kates et al. 2001: 641). This is done with the aim of pursuing aspects of what is often being overlooked or neglected in the way we are teaching and creating knowledge. Despite the lack of a commonly agreed upon definition of systems thinking, as either a discipline or a framework, several scholars agree upon how systems thinking utilizes a holistic approach to analysis that can be used in many different areas of research (Forrester, 1990; Meadows, 2008; Senge, 2006).

This thesis departs from the environmental scientist Donella H. Meadows'[9] understanding of systems thinking, as a theoretical field that highlights the importance of exploring and developing effective action by looking at connected wholes. It is an approach to understand and describe complex phenomena and "acknowledge the importance of seeing the relationship between structure and behaviour" (Meadows, 2008: 1). It brings together principles from ontology and philosophy of science, to biology, environmental science, engineering, and political science, as they are all operating with systems as structures. This means steering away from the rational paradigm to allow the systems-thinking lens to "reclaim our intuition about

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[9] Donella H. Meadows was an American environmental scientist and educator well known for her book *Limits to Growth* in which she expanded thoughts on system thinking as a theoretical scope.

whole systems and then we can use our insights to make a difference in ourselves and our world." (Ibid: 7). Meadows' upbringing in systems thinking is linked to a Western scientific context specifically belonging to the engineering world. In this context, the term 'systems thinking' originated in 1956 from professor Jay W. Forrester at MIT who specialized in systems sciences and computer engineering. Forrester's general idea was to do science in a new way by creating a new paradigm in the Western rationalist theory of science that seeks to explore how complex systems consist of agents and elements that interact both with each other and the environment (Forrester, 1961). The CSA works with the idea of *system awareness* which precipitates to the orientation of systems thinking and systems sensing and the CSA (2022a) define systems thinking as: "the critical thinking skills needed for understanding complexity" and system sensing as the intuitive understanding of how interdependencies exist and arise in complex living systems. Thus, system awareness is the ability to acknowledge the importance of seeing the relationship between structure and behaviour, which is what they are trying to cultivate among their participants through their teachings (CSA 2022a). The idea of system awareness will be described further in chapter 4.

2. 4 THE CONCEPT OF LEVERAGE POINTS

The leverage points approach is formulated by Donella Meadows (1999: 3) and can be defined as places within a complex system, such as an ecosystem, living body, or a human organized system, where just a small shift in one thing can produce a big change for the whole. Several studies have undertaken Meadows 'leverage points' approach to reveal insights on how to direct research to understand and show in order to support a sustainable transformation (Abson et al. 2017; Ives et al. 2020; Woiwode et al. 2021;). These scholars point to the need to widen the research field on how the 'inner dimensions' can work as leverage points for a sustainable transformation, while not ignoring the necessity of also advocating for a collective systems change. Meadows (1999: 3) highlights 12 places to intervene in a system for finding leverage points in a system, in which the leverage points thus marks points of power within the system. The concept of 'leverage points' can be viewed in relation to a systems change in education. For this research context, I have been interested in the first three leverage points: (1) the power to transcend paradigms, (2) the mindset or paradigm out of which the system's goals, structures, rules, delays and parameter arise, and (3) the goals of the system. In this thesis, the concept of leverage points is viewed as it pertains to educational settings and in particular to how my findings can be explained as themes for intervention to change.

2. 5 INDIGENOUS KNOWLEDGE SYSTEMS

As this thesis employs a critical investigation of knowledge-making and ontology, I aim to highlight how these ideas of system thinking are not just explored in a Western paradigm of science but are ancient ideas humans have used in interaction with their environment. Meadows (2008: 1) also argued that long before humans dealt with rational analysis, humans have dealt with complex systems, both in nature and as human beings inhabiting complex systems. According to Kawagley et al. (1998) and Barnhardt et. al. (2005), the fundamental ideas of systems thinking can be traced back to antiquity as indigenous knowledge became invisible to Eurocentric knowledge and its development of global science. Barnhardt and Kawagley (2005) explain how the concepts of 'indigenous knowledge systems' describe the core beliefs, values and practices that have sustained for millennia without being recognized as being just as valid for today's generations as they were for the past. Yet, it is important to view each indigenous tradition in relation to its cultural context. Barnhardt et al (2005) points to how indigenous knowledge has not been kept and stored due to its being viewed in binary opposition to Western, scientific, rational and modern knowledge. This aligns with several studies in the field of decolonial literature that points to how indigenous knowledge systems have been dismissed just as indigenous peoples have been dismissed historically throughout colonial history (Morrissey, 2014; Naqshbandi et al. 2008).

Gayatri Chakravorty Spivak (2010) proposes a critical decolonial take on knowledge-making and paradigms, as she highlights how indigenous knowledge and voices are often overlooked in the Western scientific paradigm. Spivak describes a 'knowledge sovereignty' in the Western paradigm of science, in which the relevance of indigenous knowledge and its importance of relating to climate change has been overlooked and their voices have been silenced (2010: 80). While being aware of the power structure of knowledge-making and production, it is important to see how the western theoretical scope of systems thinking and indigenous knowledge systems share an ontological outlook of *interconnectedness* and *interdependence*. Bateson (1979: 16) reflected on the interdependence to be the state of mutual dependence that exists between creature and environment. In this thesis, I will view the interdependence between individual and context and further, human and environment. Interconnectedness challenges ideas about dualistic oppositions such as body and mind, subject and object, nature and culture, stating that the distinction between them are no longer tenable (Escobar, 1999; Tuana, 2009; Bahrad, 2017). The presented ontology of interconnectedness wants humans to pursue open empirical inquiry as *interconnectedness* posits "a world of complex phenomena in dynamic

relationality" (Tuana, 2001: 238-39). These ideas are also presented in the works of post-humanism and new materialism (Bennet, 2010; Harraway, 2016; Tsing, 2015). This is just to scratch the surface of how the ideas of systems thinking are present in a wide-ranging theoretical field. In which their connections can be seen as a reaction to the Western European more mechanical philosophies of science defined by Descart and Hobbes that departed from the 'Cartesian' categories (Hornborg, 2013: 28-29).

2. 6 CONTEMPLATIVE EDUCATION

As this thesis is focused on exploring the methods of CE, it becomes urgent to define what it is and further how previous scholars have explored this research field. The field of contemplative education (CE) is educational practices in which contemplative practices and techniques are being used. Contemplative practices[10] originated from Buddhist traditions and facilitates adaptive regulation of inner stress by using meditative practices that foster awareness to present-focused thoughts, emotions, and bodily sensations without judging them (Astin et al. 2003; Jacobs, 2001; Kabat-Zinn, 2003). These practices reflect Buddhist principles such as relating to one's ability for kindness, empathy and awareness of one's own feelings with the aim of noticing and describing without suppressing or rejecting them (Neff, 2011). CE can be constituted by a wide range of approaches and practices, but often includes a meditation practice. Meditation can appear in many forms and refers to the deliberate act of regulating one's own attention through observation of thoughts, emotions and body states (Black et al. 2009). According to Grossenbach and Parkin (2006: 1), CE supports and challenges academic approaches by using "techniques useful for bringing forth their own genuine way of connecting the heart and mind". Roser and Peck (2009: 119) define CE as follows "a set of practices that may foster particular forms of awareness in students, forms conducive to the conscious motivation and regulation of learning, and also freedom to transcendence in life more generally". Here, the purpose of CE aims to foster an awareness through personal cultivation of awareness and volition in an ethical-relational context (Ibid: 120).

Increasing scholarship provides rationale for how an inner transformation lies at the heart of actions for sustainability and thus has a powerful transformation capacity for systems change

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[10] Contemplative practices are a broad term that describes a wide range of mind-body practices, such as, but not limited to meditation, mindfulness, tai-chi, yoga all rooted in a variety of old wisdom-traditions. For more on this, see (Lundh, 2022).

(Ives et al, 2020; Woiwode et al, 2021). This aligns with other studies that argue for fostering an understanding of one's own inner world, as the foundation for all contemplative education, since the inner worlds underpin how systems function (Ives et al. 2020; Wamsler et. al. 2018). Brown and Kasser (2005) also argues that the condition of people's inner worlds and capacities for compassion are personal characteristics that mark the individual expressions of sustainability. According to Woiwode (2021) inner transformation relates to various aspects of human existence such as mindset, values, worldview, beliefs, spirituality and human-nature connectedness. The idea of CE is that the practices are centred on raising compassion and prompt self-development and self-reflection in classrooms, thus CE is best conceived not as a kind of education or method but as a set of capacities (Ibid). As society becomes increasingly complex, it becomes increasingly urgent to foster these skills in future citizens and leaders (Lundh, 2021; Waters et al. 2015; Woiwode et al. 2021). The ideas of inner transformation in relation to ecology are also reflected in the works of the biologist Gregory Bateson (1972; 1979).

2. 7 POWER AND INTERSECTIONALITY

As this research project seeks to view subjective experiences as a source of knowledge making, it becomes increasingly important to understand how context plays into experience. Intersectional theory aspires from black feminist theory and deals with how social identity and societal oppression is perceived independently and points out how oppression intersect. In particular, in the research field of contemplative practices and CE, Fleming et al. (2022: 18) argues that we need to foster an awareness of the racial aspects in relation to understanding how contemplative practices are being taught and perceived differently with respect to cultural context and class. Further, with how the world is facing the context of colonial dispossession in which whiteness and white identity has historically been associated with civic, social and economic power as well as to material and psychological resources, intersectional theory thus provides a useful framework for approaching this research field of how contemplative practices may work differently in different cultural contexts (Ibid).

Keeping inequalities in mind, Proulx et al. (2018) points to how most mindfulness studies in America are based on experiences of white culture and thus on the perceived Western paradigm of thought. Thus there is a need for the acknowledgement of intersectional aspects of health consequences among diverse groups. So, although increasing research points to the correlation

between psychological well-being and experiences of compassion, most of this research in the Western world has been focused upon Western samples and on studies on a white population. As a result of this, we know very little of how culture shapes different understandings of compassion (Koopmann-Holm et al., 2017). Indeed, the concept of compassion must be viewed in relation to the cultural context that shapes the conception, experience and expression of compassion. In the context of this thesis, I intend to use intersectional theory to discuss how the field of CE is exposed to structural systems of oppression. Further, to critically consider and situate myself in the circuits of power-knowledge I wish to emphasize scholarship on how wealth and material historicity implicates the social and environmental injustices in the face of climate change (Escobar, 2018; Hornborg, 2013; Malm, 2016; Tsing, 2012) that also have inspired the theoretical background of this thesis.

3.1 THE BREATH: METHODOLOGY AND METHODS

3.2 METHODOLOGY: A QUALITATIVE APPROACH

I have chosen to use phenomenology as a form of qualitative research that is focused upon the study of an individual's lived experience in the world (Van Manen: 1997). Specifically, I have chosen experimental phenomenology as it is more focused upon practice and application of phenomenology and thus applicable with a mix of methods. My focus is to explore how the participant's experiences of the CCP course can reveal potential leverage points of change in how climate change is being taught in educational settings. I have done so, by reflecting upon the essential themes revealed by each participant's experience while reflecting upon my subjective experience through my embeddedness in my participant observation as well. A limitation of an experimental phenomenological approach is the issue of *personalization of results*, as what works for one person might not work for another. By considering the phenomenon from the participant's, facilitators and my own experience of the CCP - I have tried to uncover if the description of these experiences could evoke certain meaning units which are generated as themes in my analysis. However, the limitations of my chosen methodology must be viewed in relation to the results produced. I have found it beneficial to critically reflect upon the idea of 'the lived experience' and the use of experimental phenomenology in the contemplation of this study.

3. 3 SEMI-STRUCTURED INTERVIEWS

I chose to do semi-structured in-depth interviews with the participants and facilitators of the CCP, as this method encourages a conversation that allows the participants to give their own account of their experiences (cf. Bryman, 2012: 12). This method aligns with my purpose of using experimental phenomenology to illuminate a phenomena and reveal the complexities of the different experiences of it (cf. Lundh, 2020: 7).

I did eight semi-structured interviews in total, divided into four participant interviews and four facilitator interviews.[11] Each interview I carried out was between 65 and 90 minutes in length to ensure rich information about how the interviewee experienced the CCP programme and what their connection was to it. Each participant interview was made from a semi-structured interview protocol that was specifically adapted to each participant viewed in relation to their specific cultural context and working position. As well as for the facilitator interviews, each interview was tailored toward each facilitator and their specific field of expertise. The research protocols of Lunds University were followed throughout the interviews and all interviews were transcribed independently by me. During my analysis, I identified emerging meaning units from each individual and group them together to form themes to describe the participants' experiences. A core feature of experimental phenomenology is to explore choice of words and the verbal precision of the participants involved (Lundh, 2020: 4). This focus was made by inspiration of the assumption that, "languaging is the fundamental manner of existence of human beings; not only that, but language is intimately connected with the flow of emotions, as languaging and "emotioning" together provide the basis for the recursive coordination of behavior through the creation of consensual domains" (Escobar, 2018: 113). I was thus highly focused on what language each participant and facilitator used to describe their experiences of the CCP.

3. 4 SAMPLING

The interview process was carried out following different strategies of a non-probability sampling approach, to allow my research questions to be answered in alignment with my intention of using experimental phenomenology. I used a non-probability approach to first identify the socio-ethnographic features of each participant and facilitator (name, age, work

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[11] See Table 1 and 2 in section 3.4,1 below.

position and cultural context/setting of work). For the participant interviews, I used a purposive sampling approach as a strategy to select the participants. The purposive sampling was based on the criteria that the participants were working as educators teaching climate change to students in the age group of 12-20. The participants who agreed to my interviews were working at International Schools situated in Indonesia, China and The United States. They all have Western (European or American) backgrounds and represent rather privileged educational settings. They all had different motivations for engaging in the programme, these factors will be described and analysed further in chapter 4. During the participant observation of classes, I created an open document in which the participants could sign up voluntarily for interviews. I thus acknowledge that the outcome of my participant interviews represent the accessibility available to me as a researcher (cf. Bryman, 2012: 201). As a result, I was constrained to view the represented cultural contexts of the participants who were willing to participate in the research.

The second portion was the facilitator interviews, which were carried out using theoretical sampling as my strategy of purposive sampling. The facilitators I interviewed were experts working within the organization of CSA with relation to the CCP. I chose the facilitators based on their different expertise to cover knowledge on the different fields within the CSA. I am aware that my study does not allow a generalization to a population because I used a non-probability approach for both my interview strategies. I asked if I could keep the names by permission from each interviewee because of the person-oriented nature of experimental phenomenology. This choice was made to declare a transparency of who says what. All interviewees were given the opportunity of anonymity.

3.4, 1 Table 1: List of participant interviewees

Name	Overview	Work position	School & cultural context
Ciara —	Female, white, 42 years old.	Anonymized	Anonymized, China.
Kat Robbins	Female, white, 40 years old.	Place-based learning coordinator in a	National Park Service and

		partnership position.	Whenstockland High School in Plymouth, Vermont, USA.
Jozef Durok	Male, white, 37 years old.	Teacher of biology and environmental systems and societies.	The British School Jakarkta (BSJ), located in Jakarta, Indonesia.
Ana Goncalves	Female, white, 47 years old.	Assistant teacher and head of well-being.	The British School Jakarkta (BSJ), located in Jakarta, Indonesia.

3.4, 1 Table 2: List of expert interviewees

Name	Overview	Work position	Cultural context situated in.
Hanneli Ågotsdöttir	Female, white, -.	Meditation Teacher and psychotherapist. Responsible for the contemplative faculty at CSA.	Nørre-Snede, Denmark.
Gustav Böll	Male, white, 24 years old.	Youth Leadership Coach at CSA & student.	Copenhagen, Denmark.
Rask Wanscher	Male, white, 24 years old.	Youth Leadership Coach at CSA & student.	Copenhagen, Denmark.
Roger Burton	Male, white, -.	Executive coach at CSA.	California, USA.

3. 5 PARTICIPANT OBSERVATION METHOD

Phenomenology departs from the idea that the lived experience of being in the world becomes a legitimate basis for knowledge (Barnacle, 2004: 58). Hence in an experimental phenomenological study, acknowledgement of bodily sensations becomes important for the participants, yet, in my participant observations we did collective meditations which has led me to 'feel the effects' on my own body as well. I am aware that these are research methods considered to belong to either ethnography or participant observation methods, which are hard to distinguish. As ethnographic research comprises participant observation and interviews as two techniques of data collection it reflects participant observation not just as a method, in which the researcher is observing, but also is immersing themselves in the social setting they are studying (Bryman, 2012: 432). I chose to do participant observation instead of an ethnographic approach that might have taken more time to plan and perhaps were difficult to go through online. Instead, I argue that participant observation is a great method to mix with an experimental phenomenological approach, as my participant observation can be viewed as my immersion in the case studied.

I did the participant observation in the last five out of twelve online sessions in the period from December 2021 to April 2022 as the CE aspect got more advanced towards the end of the programme. I was observing the behaviour and speech of facilitators and participants while actively listening and engaging in conversations. Furthermore, I used journaling throughout the research process, as a necessary way to reveal my biases and assumptions and to keep track of my revision of thinking. Excerpts from my research diary are not shared in this thesis due to the length of this study, however, the process of journaling was valuable to keep track of my own thinking. In my analysis, the word 'participant' will be used whenever I am describing the experience of a participant, who did not take part in my interviews. I will use the name of the specific interviewee whenever I am referring to one of my interviewees.

3. 6 SITUATEDNESS AND ETHICS

It is of the utmost importance to explain theoretical positionality as Donna Harraway (1988: 9) explained it, using the term *situated knowledge*, to reveal the researcher's motives, presuppositions and personal history that engaged them to undertake that particular study. Why, I wish to shed light on my position being a white, 28 years old woman from Denmark, who grew up and has been schooled in a privileged Western environment. I came across the

existence of the CSA through a meditation center with which I am connected to. Yet, I have been an outsider to the center and their work until this research. My status as being an outsider to the work of the center, while having a contemplative practice myself, gave me some obstacles in terms of having already established assumptions and ideas towards the field of CE. I acknowledge my partiality as a researcher who has contemplative practice, yet, I argue that it has been a necessity for me to fully comprehend what CE is, as well as, to engage in an experimental phenomenological study in which acknowledgement of bodily sensations is important. However, It comes with the possibility of creating biases towards methods that I had to consciously challenge throughout the process to approach this research critically. Why the process has been an internal journey for me to reflect upon systems and structures and to reveal my own blind spots in order to approach this research critically.

3. 7 ONTOLOGY AND EPISTEMOLOGY

This thesis is grounded in the ontology of critical realism. As Benton and Craib (2011) explain, critical realism insists on the independent reality of the objects of our knowledge, which will always be open to other possibilities or corrections in the light of further cognitive work. Critical realism stands in contrast to realism and idealism, critical realism is often connected to some sort of emergent power materialism (Ibid: 128). It aligns with the nature of experimental phenomenology as it recognizes science as a social practice, in which scientific knowledge is a socially created phenomena. However, critical realism recognizes the independent existence of the objects of scientific knowledge which means the world exists beyond socially constructed phenomena. Therefore, critical realism accounts scientific experiments as being both social and material practices while they are also sustained as such (Ibid: 131).

This study uses the philosopher Roy Bashkar's take on critical realism, known as transcendental arguments that was first presented in 1975. Later he revised his theory and this study uses his revision of the arguments proposed in 'A Realist Theory of Science' (2008). The view of reality in Bashkar's ontology is described by three key levels; *as we see the real, the actual, and the empirical.* In these three key levels, the real is the stuff we are trying to study that have causal powers, the actual are the events generated by the real that are different from the empirical, which are our experiences. In the context of this research, the concrete/real is the study of the case of the CCP. The abstract is the systems and structures such as mental models that both the CSA, the CCP and the participants operate under. The empirical is the experiences

of both the participants and myself as a researcher, participating in the CCP and in this study. This metaphor of key levels implies critical realism as a form of depth ontology, in which the scientific investigation of reality attempts to go below the surfaces of things to find the appearances of things to uncover the generative causes (2008: 126).

In the face of climate change, Bhaskar (2010: 9) argues how the matter of context cannot be exaggerated, as the reality of climate changes is a collective shared reality, yet it is experienced differently in different contexts of the world. Here the notion of intra-action ontology becomes relevant when viewing critical realism in the face of climate change. The agential-ontology of intra-action was first constituted by Karen Barad (2003), who argues that humans need to accept that ontology is not something that is given but must be discovered, since phenomena are material relations of the ongoing world. Bhaskar (2010) affirms this notion of intra-action in his conception of critical realism as he accepts how the structure and agency of social activity depends pre-exists human agency but are reproduced and transformed only in the virtue of ongoing social activity, paradigmatically in the enduring relations between individuals. Thus, intra-action specifies how every social event occurs in at least four dimensions, "that of material transactions with nature; that of social interactions between humans; that of social structure proper; and that of the stratification of the embodied personality." (Ibid: 9). In this thesis, the material intra-actions between individuals is acknowledged as an *interdependence,* which holds an important space in the understanding of climate change and the human relationship with nature.

My epistemology is grounded in an interpretivist epistemology that holds that knowledge is constructed by humans as they interpret their experiences of and in the world. From an interpretive perspective, all knowledge is grounded in each particular experience and the nature of it will always be subjective and bound to the context of which it is produced (Pascale, 2011). Pascale (2011: 23) underlines the interpretivist belief that "in order to understand a situation researchers must understand the meanings the situation holds for the participants, not just their behaviours." Here, emergence of meaning becomes important as critical realism emphasizes how reality has non-observable qualities that can only be reached through abstractions. It is recognized that there is something deep that we cannot understand right now and in that way critical realism becomes anti-reductionist (Benton et al. 2011: 133). These abstractions or emergence of meanings are in this thesis explored as metaphors, which will be given some space in the analysis. The philosopher Thomas Kuhn (1970 [orig. 1962]: 8-11), argued that

scientific paradigm shifts require a fundamental change of basic ideas and concepts of experimental practices of a scientific discipline. Going off from the ideas of Thomas Kuhn, the linguists George Lakoff and Mark Johnson (1980: 193) have explored how metaphors unites reason and imagination, thus it forms an *imaginative rationality*. Metaphors become an important tool to comprehend partially what cannot be comprehended fully, such as feelings, aesthetic experiences, moral practices, and spiritual awareness as these experiences lie in the field of imaginative rationality. The human interaction with the world becomes the case I am exploring viewed by the lens of critical realism and an interpretivist epistemology to underpin how these experiences create meaning.

3. 8 LIMITATIONS OF STUDY

This project has several limitations which are important to highlight for further research within this field. First, I want to stress how time constraints and the length of this paper has informed this project. The small scale of this study set up some restrictions, so I chose to do less interviews but instead do in-depth interviews. While experimental phenomenology requires rather large groups of participants, I acknowledge that the small number of interviewee participants can be a limitation. Further, a more diverse population in the variables of the socio-economic background of the participants would also have been interesting for the interpretation and needed in terms of viewing the biases that already exist within this research field (cf. Fleming et al, 2022: xvi). Thus, I want to highlight my awareness towards these problems in which critical research examining these topics while featuring minority perspectives are extremely rare and minority perspectives have not been the focus for this thesis either. It would be interesting in future research to further view how cultural context and local community interplay in how the combination of CE and teachings on climate change are experienced differently in the different cultural contexts.

Another concern is that all my fieldwork has taken place online given the circumstances of the programme being online and my interviewees being located in different parts of the world. I am aware of the paradox of engaging in an experimental phenomenological study in which embodiment and sensing is crucial. However, Albertazzi (2019: 9) argues that whenever the research implies bodily sensations for example observation descriptions made in hand, experimental phenomenology attempts to identify the certain connections by which pen and paper may be enough to reveal the internal structures of the phenomenon.

Backed up by this, I argue that an online experimental phenomenological approach has been adequate to investigate an online teaching course as I have combined it with a participant observation. A more thorough description would have been secured, if there had been more researchers involved in this thesis process as a certain experimental phenomenological research design requires varied researcher expertise (cf. Ibid: 10). Thus, I am aware and fully acknowledge that this study cannot represent any generalizations of findings due to personalization of my chosen methodology and methods. Nevertheless, it can emphasize some general themes in a researched example that hopefully can inspire future studies within this research scope, to undertake the question of *how* and *what* teaching the issues of climate change can look like.

4.1 GROUND CREATIVITY: FINDINGS AND ANALYSIS

The analysis is based on a careful reading of all interviews and participant observations, in which I have identified core themes as sections in which they will be described and analysed. My focus for the analysis is on what the participants' experiences were of the CCP course and how their experiences relate to the facilitator's choices for the programme, thus in this chapter research question 1 as posed in section 1.4 will be answered. In my contemplation of the study, I will discuss how the participant's experiences can be seen as 'leverage points' of change in educational settings centred on climate change.

4. 2 FACILITATION

In my participant observation, I noticed how each session was split in two: the first 45 minutes was dedicated to the compassionate educational part, while the next 45 minutes would be dedicated to the content on climate change presented that day. The contemplative part would always start out by an opening ritual that is pretty consistent and it started off with a check-in from all the participants and facilitators who wished to share. The facilitators would ask the participants how they were doing themselves and would be about the local contexts of the participants. Every session would then move on to a guided collective meditation by one of the facilitators, Rask or Gustav, and afterwards the participants would get the opportunity to reflect in a journaling practice on a couple of questions related to the theme of the day. The collective

meditation was followed up by a reasoning on why they did it and how that specific meditation related to the theme of the day. I asked the facilitator Rask, about the choice of structuring classes with a common meditation first, he explained this was to get "a collective grounding practice before stepping into the field of climate change". The point of doing a collective meditation was to let the participants open up emotionally to afterwards engage in the discussion intellectually. According to Rask, the purpose was to "relate to it in a compassionate way but to still see the reality of the crisis, and both know how to feel that, but they also know how to navigate that. To foster a better capacity to navigate that and to make a choice about how they want to act." This relates to the CSA's aim of creating a bigger focus on the inner aspects using CE to change the participant's thinking or at least the awareness of it to create more room for acting. The intention of the programme was to aspire to a different way of teaching about the climate crisis in order to deepen the conversation into more vision and action for change (CSA 2022c). By starting off with the practice of CE, the facilitators aimed to ground the participants in themselves first and then to move on from there into a collective reflection room. This is an example of how the facilitators aimed to cultivate *systems awareness* among their participants in the learning situation.

Kat highlighted how she was surprised by this structure of the classes in the beginning: "On the first day I was like: what is this? I wasn't expecting so much work as being a part of this experience". Whereas the work she was referring to was the CE part of the programme, she highlighted how "bringing in the contemplative practice and the grounding and having that compassion with ourselves and with each other have been very helpful. Because I was reaching that apathetic state and I think this has reconnected me and given me some new perspective and possibilities." Here, she reveals the connection to herself as being helpful in order to see new possibilities of activism around climate change and to enter the classes with another mindset. For her, some of the difficulties of teaching climate change and to grasp the crisis in general had been how it was difficult to witness the coalition between cause and effect. She described the practice of CE and systems thinking as a way of, "acknowledging the humanity of the situation and each person that allows people to enter the conversation in a more grounded way". This aligns with the facilitator's intention of creating a *system awareness* to better understand the complexities of climate change. As a systems thinking approach emphasizes the relationship between structure and behaviour to understand how systems operate (Meadows, 2008: 1).

Another point I noticed about the role of facilitation was how the participant's reflection of Gustav and Rask as facilitators, inspired a reflection on themselves as educators. All my participant interviewees have experienced teaching, as all the participants work as educators in different institutions (see Table 1 for the participants' background and Table 2 for the facilitators' backgrounds). Ciara explained how her reflection of the facilitator's role in the CCP had revealed insights on what her experience of good facilitation was,

> "I think the role of the adults is to keep this conversation to happen, so we are teaching it but we are also living it. This is a slow learning process, nothing gets done fast, no decisions are made quickly. There is a place for stakeholders and making sure that all voices are heard and to give people the space to feel heard is highly important to create trust."

She acknowledges how slow pacing, facilitation, and trust are all essential components in learning rooms. The facilitation and leading of sessions were the main reason why she signed up for the class: "What I have been inspired by is the pacing of their instructions and the way that they are giving ownership to the participants." The point of giving ownership to people was also remarked upon by Kat: "I think they have done this with such a gentleness and openness that has allowed everyone to have their own role in the programme and given a voice to everyone." The way the facilitators gave space for everyone could be a way of stepping outside the idea of 'knowledge sovereignty' and the idea that the facilitators are the one to know the most. Instead, they acknowledge everyone's perspective and see the participants' sharing of experiences is, for the teachings, as valid as the content itself.

The pacing of the instructions was highlighted by all participants in the interviews and will be discussed further in section 4.2. However, as the participants reflected upon the facilitators ability to create space for the participants in the CCP course, all participants agreed on the importance of fostering space among the students in their educational settings too. Ana remarked on how she felt the students often carried out these teachings themselves and that her role only was about facilitation of the process, "So the role of the adults is to embody something and from there nurture certain skills and attributes in our students, so that they can be compassionate and that they can shape the world-systems to be more compassionate." Jozef also emphasized this point: "Often the passion is already there, you just have to be the one to channel it and keep them interested." Here, Jozef specifically referred to the passion for the

environment in his teaching on climate change science. Kat also remarked how the role of facilitation became crucial for empowerment of action "I think whether these circles become really powerful really depends on the teacher's ability to facilitate that. If the teachers are comfortable, then the students will be."

Thus, the tendency among the participant's experiences of the facilitation was an agreement of how good facilitation was about 'making sure all voices were heard' and 'to let the conversation happen'. Further, all participants acknowledged an interdependency between facilitators and students and the need of giving space to the students in their experience of good facilitation. The vision behind giving space for the participants was to enter the conversation in a more grounded way, to create a sense of systems awareness among the participants.

4. 3 TIME

Another common tendency among the participants was the experience of how time and pace was managed during the course and how this was valuable to internalize its content. Some participants were frustrated by the slow pace of content and the amount of engaging in conversations and meditations that constitutes the frame of CE. As already explained in the description of the CCP, it was structured so both content and the CE part of the course were built up slowly. This was noticed by all the participants who especially felt like pace was moving slowly, both in relation to the content on climate change and CE part and the facilitators acknowledged how this was done on purpose. However, Ciara emphasized how the pace of the course had been an essential factor for her to revaluate the pace of the educational setting she works in:

> "In this type of environment there are a lot of people feeling they are running out of time, even though they have plenty of time. This has been a process for the teachers to understand that we care about skills and not so much about content. These are the big paradigm shifts for educators, and if the adults cannot do it then the kids will also struggle to do it."

Here, the interdependence between teacher and students is highlighted. Further, she explains how her view upon CE shifted during the course, as she was more critical towards the CE approach in the beginning: "If you had asked me two months ago, I would have said that it is

a complete waste of time and not necessary. However, as I have suspended my disbelief and committed to the process, I have seen that it is a valuable part of the experience." She described how her own view of time in educational settings required a paradigm shift. Why, her main take-away was her experience of what she had learned about the importance of pace in teaching, in particular when it is connected to teaching the issues of climate change:

> "I have learned the importance of giving space for the process to happen and not to be in such a hurry to rush things. I am a doer, I want to check things off the list and that isn't a way to deal with climate change because it doesn't allow people to onboard in a way that is meaningful. I think that is the message that I am internalizing - how meaningful change takes a significant investment of time and that is not something that you can quickly instruct in an afternoon."

This internalizing of her own experience as an educator was similar to Kat's, who explained: "We are pretty driven towards productivity, sometimes just taking the time to just slow down and connect as humans is hard to check off. It's hard to say that counts from a school's perspective". She acknowledges her own experience of herself of being a 'do'er', who is driven by productivity. Further, how productivity is undeniably intertwined in the rigid structures of the educational systems of the United States. Thus, both Ciara and Kat expressed how productivity was expressed in themselves and how they were confronted with that during the CCP course. Here the cultural contexts may be a fact as they are both American, yet located in The United States and China that are both places in which, competition, capitalism and productivity are driving operators for the way the educational system works. I will discuss the importance of cultural context more thoroughly in section 4.6. Yet, Ciara's and Kat's experiences show how the slow pace and half CE and half content teaching on climate change, allowed them to internalize the teachings in a meaningful way. Further, to revaluate the paradigms of time and productivity they experience in their educational settings. Meadows (1999) emphasizes how the ability to suspend one's own mental models to adopt new paradigms can be seen as a leverage point that is powerful in order to influence sustainability towards a systems change. Therefore, changing the paradigm of time, pace and productivity in teaching, especially when it is related to content on climate change, seemed to trigger an internal reflection process among the participants. As Ciara emphasized "the take-away is how the pacing gives space for internalization of the value."

4. 4 ROOM OF REFLECTION

I asked the participants about how they had experienced the combination of systems thinking and CE in the teachings on climate change. Ciara explained, "I think one crucial aspect of this is that what they create are 'rooms of reflection'." According to Ciara these 'rooms of reflection' worked as 'pauses to think' that gave a grounding aspect to the teachings. Her experience was that creating a room of reflection was necessary to check-in with herself, before jumping to conclusions. Kat also reflected upon the importance of reflection: "Learning doesn't come from the experience, it comes from the reflection of the experience. Because that's the part I think we sometimes miss in our learning to be able to apply it to our lives." Further, she emphasized how this was specifically relevant to teaching the issues of climate change, as the educators do not just want the students to learn about it, but ultimately to change behaviour and integrate the knowledge in their lives. This resonates with the CSA's aim of relating knowledge to action in both community and capacity building (CSA 2022a).

During my participant observations, I witnessed how the participants were asked to describe their inner landscapes in check-in rounds after meditation and silence was often the first thing that occurred. The silence was met and afterwards the facilitators would ask the participants to share which created a room of reflection for the participants. Rask explained that the purpose behind this was so that the participants were given a choice of how they wanted to show up and take action in relation to climate change. Gustav explained it as "the balance between understanding and caring and at the same time, caring enough for yourself so you can take constructive action." This resonates with the intention of fostering an awareness of one's inner world that is described as one of the purposes of CE (cf. Roser et al., 2009). Further, Kat explained how this was particularly urgent when relating to the issues of climate change in teaching situations:

> "I guess it is like that with most things that we don't care about it unless we care about it in some way, but for some reason climate change has this extra weight on it. Maybe because it is happening in real time, it has been politicized and is scary. I don't know why it has this extra layer of needing to be attached to our hearts."

I will go further into the metaphor of 'being attached to the heart' in the next section on mind and body connection. Nevertheless, this quote emphasizes the value of personal experience and how it influences and shapes motivation. This highlights how context, time and place matters

for the experience of the individual. Kat explained how she had reflected upon her own role as an educator, and how the matter of personal motivation could be included in educational settings on climate change: "it becomes easier for us as teachers to connect the students to the issue of climate change from a perspective that they are interested in incorporating." She described how they have used activism around other political agendas such as gender studies, migration and then used a systems thinking approach to view how these structural issues are intertwined. Further, she emphasized the importance of connecting the teachings on climate change to action in which results show, "because you can only act when you feel like you can make a difference". As she believed that teaching climate change to students without giving them the opportunity to act, could potentially create apathy instead of activism.

Ana also highlighted the relevance of including personal experience in teachings on climate change, "I think it is all about what touches you to embody the effects." She explains that what she gained from her participation in the course was mostly the importance of integrating the heart and when she felt this connection, it had led to a change of habits. As such, the condition of people's inner worlds influences the individual's expressions of sustainability and thus inner transformation gives powerful capacity for systems change (Brown et al. 2005; Ives et al. 2020; Woiwode et al. 2021). So, what both Ciara, Kat, and Ana all pointed to in their experience of 'a room of reflection' was the ability to reconnect themselves to their personal motivation for change or activism on climate change. The way the participants described their experiences took the form of metaphors which will be described further in the next section. Nevertheless, judging from this, as crucial as a revaluation of time, pace and facilitation of the course, so was the space in which these reflections could take place in.

4. 5 MIND/BODY CONNECTION

Common in all interviews was how the participants used metaphors to explain their experiences of increasing awareness of climate change during the course. Here, they used metaphors such as 'to be living it' or 'to embody it' and 'connecting the head and the heart'. These certain metaphors are being used as ways of explaining experiences but they might also shape their experiences. They described these experiences not just as cognitive feelings, but as feelings of 'embodied understanding'. This can be seen in relation to how the practice of CE works as a mind/body practice as well. The word 'heart' was often the one used when both the facilitators and participants expressed their experiences of what effect the CE had. Here, the idea of

imaginative rationality and the use of metaphors become relevant to interpret the participant's experiences.

Ana emphasized the importance of connecting the head, heart, and mind: "Often this includes how to know our own bodies, but also how to know our own place in the world. So I think I would like to develop the notion of climate and how we are impacted by that." Here, she emphasizes the interdependence of the earth and its inhabitants, which reveals an ontological understanding of interconnectedness. Further, she expresses how this is linked to somatic awareness, as getting to know your own body, is to get to know your place in the world. Again, this should be understood metaphorically. She explained that this linkage between the 'head and the heart' was what she had missed in academia: "The heart is very seldom addressed, we often leave the heart behind. Often in education we miss it, which is so strange because it is how you get the students to like something, it is through the heart. So how do we nurture this?". This was her main take-away from the course and the connection between the 'head and the heart' was what she wanted to focus on as an educator, as she believed that change only happens in participants under certain heart-full conditions: when "it is until they feel it, until they embody it". This can be an expression of increased somatic awareness that has led to a stratification of an embodied personality (cf. Bashkar, 2010: 9). Which resonates with the CSA's intention of shedding light onto the importance of relating to the crisis (CSA 2022a). As it seems, it takes for the participants to really relate to the crisis in an embodied way, to relate to the crisis in a more than intellectual way.

The CSA works from the idea that inner awareness, as well as system awareness, is connected to a sense of embodiment which is described as somatic awareness (CSA 2022a). According to Hanneli, who is responsible for the contemplative faculty of the CSA, she believes it is important to cultivate an embodied empathy before a cognitive empathy. Here, embodied empathy is understood as to bring in the body by increasing somatic awareness in one's own body as she explained, "it all begins with the body". Gustav explained the need of including the embodiment as a way to understand, "I think we can understand something rationally, but that does not mean you will change your actions. It is only when you understand something in an embodied way, like with your gut or your being on a deep level, that you will start to act on what you know." Here it becomes crucial to understand how ontology shapes the paradigm that the facilitators arise from, which is an ontological paradigm in which mind and body are connected and not seen as separate entities. This learning is what they seek to push through to

the participants. Roger, who works as a coach for the center and thus is a part of shaping their programme explained to me in the interview, how metaphors work as an essential component in the programmes, "we use metaphors and relaxation as metaphors for reflection." He explained how the CSA very purposefully uses metaphors such as 'calming the mind' and 'opening of the heart' as a way of constituting reflective practices. According to Lakoff & Johnson (1980: 3) metaphors work as pervasive powers in everyday life that can shape both thought and action while the awareness of this is limited. So to use metaphors like these may shape the experiences the participants have, or at least their description of them. Roger explained how this aspect plays a major role in how individuals make sense of the world, as he argues "we see the world that we can describe", why one of the goals of the CCP programme was to make the participant reflect upon themselves as an active participant. According to Roger, to become aware of oneself is the base and then become aware of how that is the foundation for change as "it's our inner literacy and inner consciousness that allows us to see the complexity of the world". Thus, the programme increases somatic awareness through contemplative practices towards the end, as the inner awareness of climate change and the content about it unfolds.

4. 6 CULTURAL CONTEXT AND LOCAL COMMUNITY

Zoom as an online platform created the possibility of bringing different people together from all over the world, which allowed a setting in which social injustices and inequalities of climate change, cultural contexts and local communities could be discussed. Scholars point to how the workings of power are necessary to view as ontology is inseparable from their cultural context and its reification of truth (Bashkar, 2010; Van Manen, 1990). Taking this a step further in relation to this study, this means that cultural context and ontology play a crucial role in the outline of participant's potential power resources to facilitate change in educational settings. Thus, I must point to the cultural contexts of the educational settings of the participants and facilitators to see how it affected their experiences.

Common for the educational settings of Ciara, Ana and Jozef is that they all work at International Boarding Schools which often are rather privileged schools as they are primarily addressed to people who can pay their tuition. Here, the history of colonialism and power plays of cultural context becomes evident in how knowledge-making is taught and experienced (Spivak, 2010; Fleming et al., 2017). As Foucault points out "every educational system is a

political means of maintaining or of modifying the appropriation of discourse, with the knowledge and the powers it carries with it" (1970: 156). Thus, it is important not to be blind to the power structures that exist in countries implicated in a European colonial past that has been institutionalized into the cultural scripts and structures (Bonilla-Silva: 2000, Fleming; 2017, Fleming et. al., 2022). Thus, an assumption of mine was that the fact that the educators are white and are working in past colonial countries may interplay on *what* paradigms the schools are teaching and *how* they are teaching them. This is mentioned, to shed awareness onto how the background of the participants plays into how inequality and power in knowledge-making and production (cf. Foucault, 1979). Why I was interested in hearing more about how their experiences of cultural context coloured theirs and the students' experience of climate change in their contexts. I asked each participant how the educational setting was shaped by its cultural context. Their responses showed how not only cultural context played a role, but also the local, in-culture context.

Ciara's educational setting is in China and in an international school in which the student body is brought together from different global contexts. Due to anonymity, further details of this background is not revealed in Table 1. She elaborated on how the matter of cultural context of the students was shown as they enter the international school in a Chinese province, as they have to move through a paradigm shift in ways of teaching, "some of them come from educational contexts where the atmosphere is more authoritarian", as Ciara says: "Important for me is if they can justify their thinking. This process takes the first whole year for students to move from a Chinese way of thinking to a more global and international way of thinking." This shows how Ciara admits her belonging to an international paradigm of thought which she underlined to be a Western paradigm of thought. Further, she acknowledged herself how cultural context shapes education: "There are cultural differences in how people behave and which context we educate in."

Ana elaborated on the cultural context in relation to how the students were behaving too. Her school is situated in Indonesia and thus how the culture shapes how the students are taking in the teachings, "in this part of the world, the students are very passive. They are what you would call a good student. When I was working in Britain I was used to the students rebelling all of the time." She emphasized, like Ciara, the need for viewing cultural context in relation to how the teaching is done, as well as, how the cultural context and the power of paradigms of thought interplays in their work as educators in these local settings and how her school was belonging

to a British thus a Western paradigm of thought. As she is working at an International Schools in Indonesia an assumption can be that these schools are intertwined in the power structures of its colonial past. Whereas, passing on Western ideas of knowledge-making and production are still a priority for foreign workers and in this context, educators. However, this study cannot conclude any certainties upon this matter but does point to how these power structures, also among students and educators, are present in any teaching situations.

Exploring the CCP, it becomes necessary to understand the origin of the CSA. The CSA aspires from a top university (MIT) and this context is characterized by a Western and rather elitist school of thought, hence the results should also be viewed in relation to this. Further, looking with an outsider's perspective at the CSA, reveals that the organization appears to be primarily white. Situated in such an institution and the context of The United States in which racial hierarchies and inequality is endemic to their history (Bonilla-Silva: 2000), one of my assumptions was how they could be influenced by the structural issues of inequality or white supremacy. Another assumption, was how a limitation of the combination of systems thinking and the CE practice and its ontological focus upon 'the whole' as a unity, could risk overlooking the intersectionality of the already existing social structures, as several scholars argue that these inequalities are also present in most studies on CE, as the effects of CE are studied on a population that is predominantly white (eg., Proulx et al., 2018; Fleming et al., 2022).

When I asked in my interview with Roger, if the context of the CSA being tied to MIT had consequences for how content and learning was shaped, he answered, "yes because it cannot *not* be." He explained how the CSA aspires from the engineering world in which the occurring epistemology affects the knowledge-paradigms of the center: "The challenging thing is that while educational systems create innovation and growth in what we consider knowledge, they are also culturally conservative. They are conserving the ideas about culture, so they move very very slowly." What he saw as being an essential part of the problem was how the epistemology of Western science and education was to get science to generate knowledge to be generalizable. This is the same issue Fleming et al., (2022) highlights the aspect of generalizations of results that may be the aspect of CE in which blind spots of the teachers or organizations instructing the practices gets revealed. Roger emphasized that in his point of view, knowledge-making was about understanding how "there are immense experiences, therefore immense points of views and it is the whole intersectionality we must consider". This argument shows how Roger views

experiences as being intertwined to knowledge-making, which also relates to Van Manen's (1997) ideas of how the everyday lived experience of humans in educational settings shapes the individual's outlook upon knowledge-making. Roger acknowledged fully how the CSA also were infiltrated in racial and unequal power structures as these structures were endemic to the systems of the United States. He added that they were working actively around it in the organization through equity training.

Another interesting fact was how the participants emphasized the importance of including the local community in their teachings on climate change to students. Kat works as place-based coordinator in Vermont, which means she is the one to connect the teachers of the high schools to the partners within their community. She explained that the point of place-based learning was to get the students to see a direct application with the community. This was why she got interested in the CSA's 'think globally act locally' approach, and she underlined this importance as such: "When you can start to break up this gap between the schools and the local community you can sort of create a local community where they can start to understand each other better." Further, Kat elaborated on this being important "because of the alienation that we live within. Because we are in a place that is situated well to be able to adapt to the effects of climate change, we need to have the experience of understanding it in other ways to be able to grasp the change." Kat's local context is Vermont in The United States and she explained that her experience of facing the consequences of climate change in the context of the States are highly different from other places. For example, to Indonesia as Ana and Jozef highlighted how the effects of climate change were visually present in their local communities and how that affected how the students took action around climate change so much environmental work was done by recycling the plastic that littered on the beaches. Jozef who works at the same school as Ana in Indonesia emphasized, "one important thing is to go out in the elements and show them these things." He , like Kat, emphasized the need to see and feel the effects of climate change in order to grasp it. Here, it is important to mention that I have only spoken to the educators (the participants of the CCP) and not the students situated in these local contexts myself. Further, the length of this study has not allowed me to investigate how Indonesia, China and The States are affected differently by climate change.

My findings show how both cultural context and local community were factors in how action took place and in how the effects of climate change were experienced differently in each cultural context and how this coloured the participant's experience of the CCP. This aligns with

scholars who emphasize the need to study the intersectionality plays a role in how contemplative practices and CE are experienced (Fleming et al. 2022; Kabat-Zin, 2003; Koopman-Holm et al. 2017; Prolulx et al., 2018). Even though racial and social differences weren't my focus, the importance of considering them in this research field became extremely relevant. Hence the theoretic field of intersectionality allowed me to understand the backgrounds of the participants and how that affected their experience of the CCP. It has been beneficial to explore in light of my aim of doing experimental phenomenological research that is a study of lived experiences. Thus, a central finding is the need to view both cultural context, local community and apparent ontology within these contexts, to understand the intersectionality of knowledge to interpret different experiences.

4. 7 CULTIVATING COMPASSION

Cultivating compassion among the participants was one of the aims among the facilitators behind the programme. Cultivation of compassion is motivated by creating room for action, as the CE practices consist of a wide range of mind-body practices practiced to relate one's ability for kindness, empathy and awareness (Neff, 2011, 2016). The purpose of CE is to foster an awareness of one's own inner world and then to connect this to volition (Ives et al., 2020). This aligns with the CCP course and the facilitators aim to foster action towards climate change. The CE practices the facilitators of the CCP used were meditations, journaling, check-ins or body scans. I asked Hanneli, who is responsible for the contemplative faculty, how she defines compassion,[12] to which she answered: "I'm really more interested in what they (participants) get out of it". Being aware that there is no single definition of the word compassion in this analysis, this section aims to explore what effect the practice of CE had on the participants and how they described the experience of cultivating compassion during the CCP.

During my participant observation, I was sceptical of how these compassion-building techniques would function online or if it would have an effect. My assumption was that Zoom as an online platform, would make that more difficult as the CE techniques are focused on being in the present moment and tuning into the physical body. However, several of the participants shared how and what the effect of the practice of compassion (CE) had had on

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[12] A thorough exploration of the definition of the word compassion will not be given space in this thesis, as the field of such deserves way more space than what I can adequately cover. I refer to Grossenbach and Parkin's study (2006) that emphasizes its meaning in CE.

them. Some participant's experiences pointed in the direction of new understandings or awareness of one's own ontology, as the participants revealed an increased understanding of their own ontological position. Kat highlighted how, "contemplative practice becomes a way of acknowledging the humanity of the situation and of each person that allows people to enter the conversation in a more grounded way." After a common meditation one participant shared: "The grounding practice allows me to notice things I don't notice normally". Another participant remarked that, "when you invite things in from outside your usual perspective, such as the biosphere, there is something ontological that opens up in me." What the participants reflect on here, is how the practice of CE had an effect on them in their individual expressions on how they see and sense the world. This relates to Woiwode (2021) who argues that inner transformation can relate to various aspects of human existence and change mindsets, values and worldviews. While it is uncertain whether we can conclude if that is what actually happened, the notion of a new ontological understanding was discussed among the participants in class. They explained how an increased sense of 'grounding' and this experience connected them to their own awareness of climate change in new ways.

The word 'grounding' was used by several of the participants to describe an increased sense of stability and connection to the Earth, which could be understood as an example of using metaphors to describe an imaginative rationality of their experience of reality. The metaphor of 'grounding' captures both the feeling and the 'material' experience of intra-action with the given surroundings. Hanneli argues that the ability to stay grounded is central: "To have close contact with yourself is in that way also to have close contact with the Earth. So through somatic awareness we may come to one degree of belonging to ourselves and as connectedness, as interconnectedness". Hanneli stressed how a deepening of the contemplative mind starts with somatic awareness. One example of this, was in the last class one participant with indigenous heritage, who is working as an educator in United States, described how the awareness of contact to the earth was their main take-away from the programme:

> "For me, a lot of the learning has been very personal, in the way connection to the
> planet takes in. Because if the connection is not there and if you do not feel it, then
> you are not going to care. There has been a lot of disconnect from me personally, and
> a lot of people who have been colonized, so now looking back on this disconnect I see
> how it stems from oppression. And this knowledge my ancestors have been passing
> on, or have tried to, which has not been considered important, though it always was

important. So, I think reminding that connection for myself and my kids is where I am going to start."

Here, the participant describes how it has been a slow internal process of checking into oneself to reflect upon the external circumstances and problems of climate change from one's own perspective. The experience of cultivating compassion is described as a personal experience of a feeling of 'connection to the planet'. Thus, it becomes crucial to reflect upon how cultural context and past experiences may shape the participant's immediate experiences. The participant highlights how past experiences shape what they explain as 'a disconnect' and further how this disconnect steams from oppression, why it is urgent to state that this participant have indigenous background. Gayatri Chakravorty Spivak (2010) argues that climate change can be explained as increasing colonialism as the effects of climate change are not experienced equally, as all humans are not affected by capitalism, colonialism and industrialization in the same ways and this could be the experience of oppression that she is pointing to. Further, this oppression has caused a degradation of indigenous knowledge (cf. Spivak, 2010). Despite the participant's acknowledgement of the feelings of oppression, the participant declares a personal motivation to act. Spivak (2010) further emphasizes the importance of touching 'the consciousness' of people in order to create action around climate change. This may be what this participant experienced. However, my findings were that the cultivation of compassion had had an effect on the participants in which they experienced an increased sense of grounding. Which took form as an increased sense of care towards the earth that motivated them to take action in relation to climate change.

5. 1 CONSCIOUSNESS: CONTEMPLATION OF STUDY

Undertaking this research has led me to question how knowledge-making on the climate crisis is produced in schools globally and further what structures these knowledge systems are founded upon. In the context of this study, I have asked the following questions: How did the participants experience the CCP in relation to the facilitators' choices for the program? And what were the participants' experiences of engaging in the CCP? And further, how can the participants' experiences be used to reveal leverage points of change in how the subject of climate change is being taught in educational settings? The previous section answered the first two questions by exploring how emergence of meaning could be articulated in the responses

of the participants. Thus, this chapter seeks to discuss how, or if, these conclusions can be used as leverage points of change on how the subject of the climate crisis can be approached in educational settings, further, the relevance of experimental phenomenology to reveal this.

5. 2 Leverage points of change

I have been interested in three leverage points in the context of this research: (1) the power to transcend paradigms, (2) the mindset or paradigm out of which the system's goals, structures, rules, delays and parameters arise, and (3) the goals of the system (cf. Meadows, 1999: 3). These concepts of leverage points are viewed as they pertain to educational settings centred on teaching climate change and to how my findings can be explained as themes for intervention to change. My analysis revealed all the following conclusions: How the role of the facilitators in educational spaces were central as this led the participants to contemplate their own role as educators, in doing so, participants contemplated the matter of time when the content is related to climate change, as they explained that the pacing gives space for internalization of the value. This was connected to the ability of the facilitators to create a 'room of reflection' in which this internalizing could take place. Here metaphors were used to embrace an imaginative rationality to describe the participant's emergence of meaning from their experiences. Ultimately, the experiences of the participants revealed that the methods of CCP had caused a change in the individual's outlook and motivation upon climate change. Thus, I seek to discuss how my findings can be seen as leverage points of change, in educational settings centred on teaching climate change.

An example of the first leverage point is how the participants experienced transcendence of the paradigm of time in educational settings. Kat, Ana and Ciara all acknowledged how changing the paradigm of time in educational contexts had an effect on how they experience climate change and how to translate this experience into action. Again, context becomes crucial as productivity and lack of time are defining aspects for many Westernized contexts. A slow pace of teaching and the use of CE, secured an embodied understanding of the content too, which created internal reflection processes among the participants that resulted in new motivation to act in relation to climate change. And not just to act, the participants also described changes of habits and self-awareness of the same. This aligns with scholarship that points to how CE may foster awareness and conscious motivation which seek to establish a broader sense of compassion among its participants and ultimately with the aim of cultivation of awareness and

volition in an ethical-relational context (Grossenbach et al. 2996; Roser et al., 2009). Further, scholarship provides rationale for how an inner transformation lies at the heart of actions for sustainability and thus has a powerful transformation capacity (Ives et al, 2020; Woiwode et al, 2021). Changing the paradigm of time could be seen as a place to intervene in educational settings when they are centred on climate change as it is a complex issue. To learn how complex systems relate to each other is necessary to understanding the depth of climate change. This process takes time and if it is rushed it does not consider the importance of the internalization of the content. As social systems are the manifestation of cultural thinking patterns, so to change the systems we may start to change the thinking patterns (Meadows: 2008: 167).

What I witnessed during the participants' observations was how the slow pacing of the CE method was crucial since this way of structuring classes gave space for the participants to reflect and to fully absorb the content of the teachings. Therefore, changing the pace of instructions and combining the content of climate change with methods of CE could potentially be useful as a leverage point to possibly change or affect behaviour and habits of students. Yet, I do not argue that this study can reveal any findings on change of behaviour in students. Furthermore, there are also places on this earth where things are not going fast enough. Thus, changing the paradigm of time and productivity in educational settings must be related to Westernized educational contexts, as the results were also produced in such.

An example of a potential second leverage point, is how the experience of the participants reflected a self-reflection of their interaction in the systems of their individual contexts. It increased their awareness of their own worldviews (or individual ontology), and realization of which paradigms of thought they were connected to. This ability is needed in the context of climate change, as Meadows (2008: 108) emphasizes: "Change comes first from stepping outside the limited information that can be seen from any single place in the system and getting an overview." . Further, Shepardson (2011) calls for innovative solutions to strengthen the bond and the awareness of how human and natural systems interact and shape each other in the context of climate change. So, another potential leverage point of change is the skills to become aware of one's own worldviews, to see the paradigms and structures of which they arise in. With this aim in mind, the CCP cultivated a systems thinking lens among the participants. Meadows emphasizes (2008: 4) how the Western rationalist tradition conflicts with the aim of solving problems holistically: "Ever since the Industrial Revolution, Western society has benefited from science, logic, and reductionism over intuition and holism. Psychologically and politically we would much rather assume that the cause of a problem is 'out there' than 'in

here.'" She suggests a shift in the Western paradigm of science to start to look inwards and this look inwards was what the CCP aimed to establish as well. Thus, the participants developed skills during the CCP course by taking part in CE and engaging in meditations and check-ins that allowed them to shed awareness of what was happening on the inside. This may have led to a self-awareness that allowed a system-awareness, which allowed the participants to prompt the mindset or paradigm out of which the system's goals, structures, rules, delays and parameters arise. I argue that including a system thinking and systems awareness perspective is beneficial when teaching climate change and it can be an example of a leverage point of change. This aligns with the argument proposed by Meadows (1999) who emphasizes that the capacity for individuals to suspend one's assumptions and critique their mental models to potentially adopt new paradigms is a powerful way to influence sustainability outcomes towards system change.

The third leverage point is described as the goals of the system, as Meadows (1999: 16) suggests: "Whole system goals are not what we think of as goals in the human-motivational sense. They are not so much deducible from what anyone *says* to what the system *does*. Survival, resilience, differentiation, evolution are system-level goals." Seen in relation to this research, the goal is to view these leverage points as places to *change* educational settings centred on teaching climate change. The point of this research is to explore how and what changes could be introduced, into the ways in which the climate crisis is being taught in educational settings, with the purpose of creating more environmentally and sustainably aware students in future generations. So what can this change consist of?

This thesis has explored how the combination of CE and a systems thinking approach can result in an increased self- and system awareness among the participants that can cause a new motivation to act. The importance of inner-transformation for sustainability change is also emphasized by Woiwode et al. (2021). The analysis showed that the participant's experiences of 'a room of reflection' and a 'mind-body connection' was necessary for them to 'embody' the learnings they made throughout the CCP. Here, all participants highlighted the notion of a grounding aspect in the teachings that allowed the participants to reconnect them to the earth. The grounding aspect in the teaching through a practice of CE, underpinned their understanding of climate change and the human relationship to it, which they acknowledged as a feeling of interdependence. The importance of interdependence was emphasized by Gregory Bateson (1979) who pointed out that ecology, mind and nature interact, which resonates with my

findings that shows the inextricable connection between self, body and environment. Thus, creating a 'room of reflection' and a cultivation of a mind-body approach could potentially work to establish a sense of interdependence between human and natural systems and a care for the same. This is potentially relevant as scholars point to how the issue of climate change is deeply intertwined to the human relationship to the environment (Escobar, 2018; Harraway, 1988; Meadows, 2008).

5. 3 The use of experimental phenomenology

My experimental phenomenology approach to my study has led me to revaluate the practice of concepts and ideas and view them as phenomena as always connected to the whole, as the research scope of system thinking proposes (eg., Kates et al., 2001; Meadows: 2008; Mobus, 2018; Senge, 2006) Thus, my findings is a study of 'lived experience' as the idea of phenomenology posits (Neubauer et al., 2019: Van Manen, 1997) and my analysis reveals common traits in the participants' experiences. This has led me to reflect upon how experimental phenomenology worked as a method.

My analysis of the participant's experiences highlighted how context and individual ontology became central for how the content was internalized, and thus for how the CCP was experienced. The previous section viewed how these results could be interpreted as leverage points of potential change, yet, it is important to emphasize how no generalizability can be made out of this study and thus they cannot be applied in *all* educational settings focused on teaching climate change. Instead, I argue that these conclusions could potentially reveal leverage points of change to apply in Westernized educational contexts, as the results were revealed in these contexts. Further, it is essential to declare how this research belongs to a Western paradigm of science too because of the context it arises in, but also by my situatedness as a researcher and the way in which I have approached phenomenology by the means of language. This highlights a main difference between a Western approach to phenomenology and an Eastern take, as the difference is in how Western science approaches the meaning of the lived experience by language, whereas Eastern practice uses non-script oriented reflective techniques (Van Manen, 1997: 23). However, as I have chosen experimental phenomenology, I have declared a quest of combining it with the reflective techniques (viewing CE as a method) as well, which makes the boundaries of this experimental phenomenology study more muddy.

The nature of experimental phenomenology is more focused upon practice than of the theoretical ideas of phenomenology (Lundh, 2020). This reveals an interesting dualism in my interpretation of results; between theory and practices that further reveals another dichotomy, which is between differences and universalities. According to Barnacle (2004: 63) the goal of experimental phenomenology is to focus on how experience can be used as a way of knowledge production. Here, the study of the independent variables and their effect on the experiences becomes central in order for an experimental phenomenological approach to underline how we can learn from the experiences of others (Neubauer et al., 2019). Yet, Lundh (2020: 493) emphasizes the need for a person-oriented research in which context and person may be systematically varied. Thus, in this research context centred on the realm of knowledge-making, it may become essential to ask oneself: can we learn from the experience of others?

This is a rather broad philosophical question that I do not offer a simple answer to, yet I aim to highlight the essence of this question as I believe it is essential to ask oneself, whenever we are inquesting the research field of educational research and experimental phenomenology. This takes me back to the theoretical discussion among the two philosophers of phenomenology. Husserl (1970) was more focused upon the epistemological nature of knowledge while Heidegger (1967) was more interested in the ontological temporality of being. However, this research has allowed me to discover there is not one without the other. The nature of phenomenology has been a cyclical process of going back and forth to uncover the participants', facilitators', and my own reflections into analysis, to see how the different parts of my data can evolve into a more whole understanding of the phenomenon I have explored. While understanding the interdependencies of the scope is necessary in order to grasp the whole. I argue that experimental phenomenology has been beneficial to grasp in connection to the approach of contemplative education and systems thinking, as the ontological foundation for all three approaches aligns. Further, since they are all seeking to understand the whole, by exploring the separate parts. Hence by looking at the experiences, essential structures may start to be revealed. Viewing this in relation to experimental phenomenology as a method, it becomes important to remember that experimentation as a practice would be unintelligible if the mechanisms and their tendencies under investigation did not exist independently of the activities and beliefs of the experimenters (Lundh, 2022). Thus, viewed by the lens of critical realism the contingent circumstances such as context, time and place matters (Benton et al. 2011: 126).

What this study also revealed is how the practice of CE allowed the participants to have experiences of subjective awareness. These appearances of subjective awareness had some common traits, which one could argue as universalities, even though they were different experiences based on different 1st person accounts. Yet, one universality revealed among all the participants, was how the practice of CE and the combination of systems thinking allowed them to create new understandings of climate change that was often connected to a personal experience that formed a personal motivation to act. This conclusion aligns with previous scholarship that argues for how cultivation of personal awareness can be approached through the practice of CE, as inner transformation has a powerful capacity for the individual's expressions of change towards sustainability (Ives et al. 2020; Woiwode *et al.*, 2021; Brown et al. 2005), and with scholars who argue how changing the paradigms of knowledge-making is central in order to change how systems operate (Meadows, 2008; Senge, 2006). Thus, I argue that to change the paradigms of knowledge-making and practice of how climate change is taught are essential to understand the interdependence of humans and natural systems and further how this interdependence is connected to the issue of climate change (cf. Bashkar, 2010; Escobar, 2018; Sharma, 2012; Shepardson et al. 2012; Tsing, 2012). Therefore, it may be possible to learn from the experience of others but cultural context, matter and time must always follow as this study points to. Here, the method of experimental phenomenology highlights the dichotomy between practice and theory and thus the need to apply practice into the realm of theory (Albertazzi, 2021; Lundh, 2022, Van Manen, 1997).

6. CONCLUSION

My analysis shows how experiences cannot be separated from the context in which it arises. I cannot seem to give any objective account of my results, because it is entangled in the world, it is entangled in the beings of the participants, and the conditions of these entanglements vary between individuals. Thus, I argue that an intersectional approach is valid and helpful for future studies in this field, in order to deconstruct how cultural context and effect plays into experiences of knowledge-making. However, epistemology cannot be separated from its ontological foundation, why an ontology of intra-actions can allow us to interpret the transactions that exist between all agents of the social matter, that in this research context was the CCP. I underline that I don't think there is a common generalizable truth to be found

through these practices, yet, this study points to how there can be necessary help found in CE in order to relate to climate change in more personal ways that can foster action. Here, the need of taking the space and creating room for reflection in educational settings, is essential, both individually and collectively. However, the room of reflection must have some underpinnings of the practice of CE that is focused upon somatic awareness, as this study points to how a person's bodily connection to themselves may have a bigger say in how they can relate actively to the subject of climate change in educational settings. Thus, the method of 'opening' people up for learning may come in handy when the learning situation is centred on complex topics such as climate change. Specifically, for the topic of climate change, to experience a sense of 'grounding' is explained as important to gain in order to act. All these findings, revealed an increased sense of self-awareness that mirrored an increased sense of system-awareness among the participants and both are necessary skills to prompt future generations to act upon the issue of climate change.

Thus, I argue that to change the paradigms of knowledge-making on and practice of how climate change is taught is essential to apply an understanding of how humans and natural systems interact and how this interdependence interferes with the issue of climate change. This knowledge is crucial for future generations, as the results of this study point to the need of including the inner-dimensions of humans, to touch their consciousness to integrate it, to embody it. Thus, I argue that the practice of CE may be a way, in some contexts, to do so. However, it is not enough to change the knowledge of a phenomenon: actions must follow. This highlights the dichotomy between practice and theory, which is also the paradoxical nature of academia. As already stated, this study does not allow any generalizable results. However, all this was not done for nothing, as I as a researcher have come to the following conclusions for myself that I wish to state as open-ended questions:

1. Are the most obvious truths sometimes the ones we are the most blind to?
2. Perhaps practices reveal more universalities than theory does?

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