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**Environmental Literacies for Regenerative and Sustainable Futures:
Indigenous and Traditional Perspectives**

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Submitted in fulfilment of the requirements
for the Degree of Doctor of Philosophy

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الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ¹

¹ “All praise and gratitude is to Allah, the (ultimate) *Sustainer* of all worlds”. These are the first words from *Al-Fatiha*, which translates to “the opening”, and which is the opening chapter of the Quran. The *Faitha* “opens” the Quran and has deep significance for facilitating openings and healing in the Islamic tradition.

*For all the people of the world with histories of colonisation and
oppression.*

Abstract

Education for Sustainability (EfS) as practiced within formal higher education institutions (HEIs), colleges and schools is seldom evidenced to engage deeply with indigenous and traditional environmental literacies (ITELs) (Blenkinsop et al., 2017; Van Poeck and Vandenabeele, 2012). Indigenous refers to environmental literacies originating from indigenous knowledge systems and traditional to those developed through long standing faith, spiritual, and/or cultural traditions. This research inquiry explores and investigates the use of ITELs for EfS and regeneration in non-formal educational contexts in Scotland and Malawi.

Foregrounding ITELs, this post-qualitative inquiry utilises a decolonial and pluriversal approach that decentres universalised, dualist, Euro-Western narratives of humans and nature as separate entities (Vásquez-Fernández and Ahenakew, 2020). Contributing to the industrial revolution, these narratives have globally propagated capitalist, materialist, notions of socio-economic development at the cost of the natural environment (Stein, 2019). This research inquiry, therefore, centres historically marginalised knowledge systems, philosophies, and literacies specifically as they relate to human-nature relationality to respond to contemporary sustainability challenges.

The decolonial and pluriversal approach informs the theoretical framework for the study that recognises plural ways of knowing and being and brings together three distinct but intertwining theoretical spaces from across geographies and time. The framework draws from: ecopedagogy as it has developed from the theory and practice of critical pedagogy, originating from the work of Brazilian philosopher Paulo Freire (Kahn, 2010); deep ecology and the concepts behind the long-range deep ecology movement as envisioned by Norwegian philosopher and activist Arne Naess (Naess, 1986); and traditional and contemporary philosophies of Islamic Environmentalism (IE) as they relate to human-nature relationality (Gade, 2019; Nasr, 1987). These three spaces create the decolonial and pluriversal theoretical lens for the study intertwining modern educational theory with faith-based paradigms, bridging “Eastern” and “Western” thought and practice. The theoretical lens enables the creation of educational spaces that allow for a diversity of individuals and plurality of knowledges to come together and create effective responses to the environmental crisis. It also informs the participatory and creative methodologies used for the data generation activities of the study.

I designed a series of themed workshops to revive, apply, and celebrate ITELs and facilitated them with student and community participants at a HEI and community organisation in Scotland, including a condensed workshop with members of the Sustainable Futures Global Network (a social enterprise with a focus on creating ethical, equitable, partnerships for sustainability research and practice) in Malawi. I used a range of participatory methods including reflective discussions, problem solving with Ketso, Sharing Circles, embodied expressions, and arts-based inquiry to generate multimodal data.

My findings demonstrate that the use of ITELs for EfS promoted holistic material *and* spiritual conceptions of human-nature relationality, including reflections on articulation of interconnectedness, enabling participants to revive this core ITEL literacy. The findings also show that using an ITEL approach to problem solve for contemporary sustainability challenges enabled the articulation of strong resistance to environmentally destructive norms, greater understanding of the “other”, and expressions of hopeful resilience. Further, using an ITEL focused ecopedagogy enabled the acknowledgement and honouring of each other’s diversity, allowing us to celebrate each other and the plurality of knowledges and literacies we brought to the workshop spaces.



Figure 1 Hands collectively painting onto an intertwined Celtic knot on canvas. The image signifies the importance of coming together in community and the intertwined nature of human and non-human existence – both key concepts within indigenous and traditional environmental literacies.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, this thesis is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Signature:

Printed Name: Sundas Mahar

1. Introduction

“We feel our world in crisis. We walk around and sense an emptiness in our way of living and the course which we follow. Immediate, spontaneous experience tells us this: intuition. And not only intuition, but information, speaking of the dangers, comes to us daily in staggering quantities.

How can we respond? Has civilisation simply broken away hopelessly from a perfection of nature? All points to a bleak and negative resignation.

But this is only one kind of intuition – there is also the intuition of joy.” (Naess and Rothenberg, 1989, p. 1)

This research inquiry explores and investigates the use of indigenous and traditional environmental literacies (ITELs) to enable deep reflections on, and aid the development of, human-nature relationality in the contemporary context of the environmental crisis. Specifically, it seeks to explore the use of decolonial and pluriversal approaches to critically question the foundational issues that have led to the crisis and facilitate engagement with ITELs, for contemporary contexts of teaching and learning for sustainability and regeneration.

The thesis aims to make original and critical contributions to teaching and learning for sustainability through both theory and praxis by a) developing an innovative, decolonial, and pluriversal theoretical framework for a critical, radical, practice of education for sustainability and regeneration, and b) a demonstration of this practice which evidences the use of ITELs as a crucial, resistive, force against reductionist perceptions of human-nature relationality and capitalist, extractivist, socio-economic structures. The past decade has witnessed an increasingly visible shift towards decolonisation within academic discourse and an equally visible one towards environmental sustainability, albeit not always in combination. This research inquiry, with its focus on decolonial and pluriversal approaches to teaching and learning for sustainability and regeneration, brings together these important narratives and makes the above contributions by asking the following question and sub-questions:

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How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment and inform responses in the contemporary context of the environmental crisis?

1. How can individuals be facilitated to *revive* ITELs and what does this process demonstrate?
2. How can individuals be facilitated to *apply* ITELs and what does this process demonstrate?
3. How can individuals be facilitated to *celebrate* ITELs and what does this process demonstrate?

Decolonisation undoubtedly is a complex and difficult process, sustained by everything from resistance and hope to questioning universalised ways of making sense of the world, rediscovering lost knowledge systems, wisdom traditions, ways of thinking and being, and perhaps most importantly, the very purpose and nature of our lives on earth. It is important to highlight that modern, white, European colonialism certainly is not the first of its kind, however, it is the most widely spanning destructive form in the history of human civilisation that has permeated all boundaries and geographies and has been deeply entrenched within the contemporary human psyche (Oliveira, 2021). Decolonial approaches, therefore, are not a milestone that we can arrive at and declare the process complete, rather these will remain acts of everyday resistance in thought, word, and action in a deeply colonised world.

My intention with this study, therefore, is to practically work with decolonial (Said, 1994a, 2003; Mignolo and Walsh, 2018) and pluriversal (Escobar, 2018; Perry, 2021) approaches to inform the methodology and design of this inquiry. I then examine if the use of these approaches to reflect on and develop our relationalities with human and non-human life, and the wider natural world, can pave our paths forward towards sustainable, and more crucially, regenerative futures. This is because sustaining our natural environment as it has been excessively degraded, depleted, and destroyed especially over the last 100 years is simply not enough. We need to actively regenerate and nourish the wider natural world, which includes our relationships with each other and the non-human life and forms on this earth and beyond. The decolonial and pluriversal approach also enables me to bridge

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philosophies and literacies from across geographies and time, overcoming the opposing binaries of the “East” and “West”, for intercultural dialogue, communication, and action in the contemporary context of the environmental crisis.

Within the research inquiry, I take up the following terms and their related definitions in the context of this work to present some of the key arguments of this thesis:

I take up the term Euro-Western to refer to: (neo)colonial, imperialist, capitalist socio-economic structures; reductionist onto-epistemological paradigms based in Cartesian duality; and the modern scientific enterprise with academic worldviews that have marginalised indigenous and traditional knowledge systems and philosophies (Strevens, 2020). The term implies academic and socio-economic practices as they relate to the global minority, but also as they have been globalised, exported, and entrenched within perspectives and practices in the global majority (Campbell-Stephens, 2021).

The phrase education for sustainability (EfS) is used to refer to the wider practice of mainstream, formal, and non-formal teaching and learning for sustainability. It is commonly used in educational policy, curriculum, and practice to refer to various forms of education related to the sustainability and protection of environmental habitats, careful consumption of natural resources, and human psychology and behaviour in the context of responding to and mitigating the environmental crisis. However, the paradigms it is based in derive from Euro-Western approaches to human-nature relationality that often prevent deep, active, engagement with indigenous, faith based, and/or cultural literacies as they relate to humans and their intertwined relationships with the wider natural world (Kahn, 2010). Mainstream EfS, therefore, can take on many forms including environmental education (EE), the heavily popularised and reductionist education for “sustainable development” (Kopnina, 2020a; Stein *et al.*, 2023), forest education, land education, education for environmental citizenship, and other formal and non-formal practices of teaching and learning as they relate to educating for sustainability. The literature review provides an overview of key areas of mainstream EfS practice as they relate to this research inquiry.

The term and practice of ecopedagogy often falls under the wider umbrella of EfS as it is evidenced across mainstream higher education institutions (HEIs), colleges, and schools, in addition to non-formal contexts of learning. The practice, naturally, varies widely and may

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or may not be aligned with the foundational intentions of the movement (Kahn, 2010; Hung, 2021). I, however, use the term to refer to a critical, radical, practice of teaching and learning for sustainability *and* regeneration in the spirit of critical pedagogy (Freire, 1978, 1985) and emancipatory approaches to education, as elaborated within Kahn's (2010) work in the field.

I also take up the term literacies, as used in the title of this thesis, to denote learned, acquired, and/or somatically experienced knowledges and/or competencies, and the practice of these as they have been transmitted through formal, non-formal, and informal educational avenues, including individuals' upbringing and lived experiences. These also include literacies of land, water, environment and other sign systems that may or may not be conventionally read or written (Perry, 2023).

The term indigenous within indigenous and traditional environmental literacies (ITELs) signifies environmental learning and literacies specifically as they have originated from indigenous knowledge systems (Kimmerer, 2002). The term traditional refers to faith based or spiritual philosophies and knowledges, and/or cultural knowledges and practices related to the environment and human-nature relationality as these have evolved over long periods of time. "Primarily, "traditional" signifies rootedness in a sacred tradition, which normally entails an intergenerational chain of transmission as well as responsiveness to the particularities of the day" (Murad, 2023, p. 57) (emphasis in original). Reference to indigenous knowledge systems (IKS) and traditional ecological knowledge (TEK) is made as it appears in the literature, however, these terms are restricted to indigenous knowledge systems only as defined by the authors of these works.

Within the context of this research project and thesis, ITELs as historically marginalised knowledge systems are foregrounded within the research workshops which have been designed as data generation spaces for the study. It is important to highlight that indigenous knowledge systems and indigeneity have often been misappropriated within educational, and more broadly, social research sectors leading to continued (neo)colonisation which diminishes the struggles and oppression of indigenous communities and people (Chandler and Reid, 2020). This research inquiry, with its decolonial and pluriversal approach, aims to counter this by highlighting the core messages of humanity, community, interconnectedness, and interdependence of life and life forms, taking up these concepts as part of broader invitations for engagement with the life-giving

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and life-sustaining wisdoms embedded within indigenous knowledge systems. In this way, it also responds to calls for the integration of indigenous literacies within contemporary (sustainability) education, by both indigenous and non-indigenous scholars, as an act of resistance to counter (neo)colonial epistemicide (Kimmerer, 2002; Kahn, 2010).

The research workshops within this study were, therefore, an invitation for research participants to engage with: key indigenous environmental literacies from across the globe (including where the workshops were taking place); their own indigenous environmental literacies (if any) from the lands they were born, raised in, or called home deriving from the understanding that as humans we are all indigenous to a place as well as migratory beings; environmental literacies from faith/spiritual traditions (and participants' own, if any); and environmental literacies that participants had acquired from their cultural tradition(s) and which were part of the knowledges they brought to the workshop spaces. Specifically, the workshops invited participants to engage with the intersections and common threads evident across the diversity of indigenous and traditional environmental literacies (ITELs): themes of community; the sacredness of nature; interconnected existence; spiritual understandings of human-nature relationality; the earth as a sacred trust, and so on. This engagement focused on environmental literacies from both indigenous knowledge systems and faith/spiritual and cultural traditions to:

- a) respond to scholarly calls to integrate traditional ecological knowledge (TEK) into contemporary sustainability education (Kahn, 2010) for what Kimmerer (2013) calls a “symbiosis” of indigenous wisdom and contemporary scientific knowledge, and
- b) due to the crucial insights ITELs hold about our relationships with each other and the earth, and therefore sustainability, as an antidote to capitalist, consumerist, extractivist perceptions of the natural world (Kimmerer, 2024).

A brief introduction to key ITELs was, therefore, presented to the research participants to prompt and enable conversations and reflections on these ways of thinking and being, and to elicit participants' own ITELs from their respective traditions.

The terms natural world, natural environment, and nature are used interchangeably to refer to nature and all that exists within, in the widest possible sense, including non-human life and life forms and the greater cosmos as it surrounds us.

1.1 Contexts of the study

My understanding of the elements that form this research inquiry has developed over a long period of time as I have evolved personally through a deeper understanding of myself, of life, and the contributions I intend to make through my work. This study develops from my Masters research work at the University of Glasgow in 2018, where I explored students' perceptions, attitudes, and beliefs around sustainability and how these took shape in the context of their upbringing and education. Most of the students were considerably invested in sustainability issues and attributed personal environmental consciousness and care to being raised in a family with similar values, and/or being involved with student bodies and groups that foregrounded conversations and actions around sustainability on campus, or outside the university. However, almost all of them expressed disappointment and frustration at either the very little, or complete lack of, focus on socio-environmental sustainability within their formal degree programs at the university. I vividly remember a student studying physics and astronomy questioning why they studied rocket launches without any mention of the amounts of fuel it required to launch one into space. These and many other conversations, readings, reflections, and experiences informed the research workshops (data generation activities) of this study that took place in 2022 - four years after my Masters research work – with students at the University of Glasgow and with community organisations.

Within my personal life, although I have had excellent and enjoyable experiences within both formal and non-formal educational spaces, I increasingly began questioning reductionist tendencies within my own schooling during high school, and within higher education that is primarily designed to prepare us for employment within capitalistic, consumerist, societies but not for physical, emotional, psychological, and spiritual development as living beings in relation with the wider natural world that we inhabit. The literacies related to this latter development and evolution as a *whole* human came from my grandparents, my family, my friends, my culture, my faith, and my own interests in reading: from the enjoyment of reading childhood adventure stories to my continued love for Tolkien's Lord of the Rings.

These relational experiences have shaped the way I see and experience the world and how I continue to experience it, specifically in the context of the times we live in that are marked by the sheer magnitude of multiple crises that exist within our world. Whether it's

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the environmental crisis with its staggering statistics: 40% of the world's population has been adversely affected by land degradation, almost 90% of the world's marine fish stocks have been fully exploited, overexploited or depleted, 75% of the Earth's land surface has been significantly altered by human actions (UNEP, 2022) and on and on. Or the live streamed genocide in Palestine (Phipps, 2023; Albanese, 2024; Badwan and Phipps, 2025; Graham-Harrison, 2025) that has killed at least 18,000 children of the estimated 47,000 people, since October 2023 alone (Al Jazeera, 2025), disregarding the decades of systematic ethnic cleansing of the Palestinian people prior to these recent events (Pappe, 2007, 2017; Chomsky and Pappé, 2015; Khalidi, 2020). In addition to systematic oppression and armed conflicts in a number of other places including Sudan, Lebanon, Congo, Yemen, Xinjiang and many others. Or the continued threat of societal collapse due to climate change and other increasingly worsening social, economic, and political factors (Peñuelas and Nogué, 2023), polycrisis (Albert, 2024), and (neo)colonisation (Hickel, 2021).

Our world is in crisis. And we feel it. However, as the quote at the beginning of this chapter suggests, if we tune into ourselves deep enough, we can also intuit the existence of life and joy amidst the catastrophic global troubles that threaten to overwhelm us. For me, this intuition comes from a range of experiences, most notably through spiritual practices and the curiosity of exploring the natural world. Both my faith which is rooted in the Islamic tradition, its intersections with ancient wisdom traditions, and discovering the endlessly fascinating interconnected *nature* of the natural world are not only sources of intellectual stimulation, but also of deep awe, respect, and wonder. My personal experiences of exploring these areas and teaching through creative pedagogies at primary school have greatly informed the data generation activities utilised for this research inquiry. Additionally, experiencing the long term impacts of (neo)colonisation, while growing up in Pakistan (a nation with a history of almost 200 years of colonial rule), comes with a deeper understanding and appreciation of decolonial and pluriversal approaches to teaching and learning. These approaches not only help me make sense of the reductionist nature of mainstream formal educational practices (rooted in Euro-Western notions of education) that I personally experienced growing up but also give me the academic tools to resist these practices, specifically within formal and non-formal spaces of education.

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This research inquiry, therefore, is situated in both formal and non-formal spaces of mainstream education and seeks to understand the use of indigenous and traditional environmental literacies (ITELs) for teaching and learning for sustainability and regeneration, in the contemporary context of the environmental crisis.

1.1.1 Brief context of the literature

The literature on education for sustainability (EfS) is varied and vast and takes on many forms including EE, ESD, land and forest education, education for environmental citizenship and so on. Although there is an emerging body of work using decolonial and pluriversal approaches to EfS, this still seems to be in its nascent phase as opposed to being the norm within both formal and non-formal spaces of education. Further, there is very little evidence showing the foregrounding or successful integration of ITELs into EfS within formal educational spaces (HEIs, colleges, schools) (Tuck, McKenzie and McCoy, 2014; Harmin, Barrett and Hoessler, 2017) or with a diversity of individuals. Although the literature evidences some excellent examples of the use of indigenous literacies for EfS, these constitute the minority of studies or are often either focused on indigenous populations or individuals with indigenous heritage, usually within non-formal educational contexts. This study, therefore, makes an important contribution to the contemporary practice of teaching and learning for sustainability and regeneration through teaching and learning practices that *foreground* an ITEL focused ecopedagogy, within both formal and non-formal spaces of education and with a diversity of audiences.

1.1.2 Introduction to the theoretical paradigm

As previously indicated, I use a decolonial and pluriversal approach within this research inquiry to explore and investigate the use of ITELs for education for sustainability and regeneration. This approach informs the theoretical lens used for the study which draws from the three theoretical spaces of ecopedagogy (Kahn, 2010), deep ecology (Naess, 2008), and Islamic environmentalism (IE) (Nasr, 1987a, 1997; Gade, 2019). These spaces come together to form the intertwined theoretical framework which informs the data generation activities utilised within the research workshops designed for this inquiry. Ecopedagogy advocates for the use of both decolonial and plural approaches for a critical, radical, practice of teaching and learning for sustainability and regeneration. Deep ecology foregrounds relational perspectives between humans and the wider natural world, with an emphasis on deep approaches that seek to address foundational issues responsible for the

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environmental crisis. IE encompasses the core elements of ecopedagogy and deep ecology, with philosophy and practice aimed at deepening human-nature relationalities by foregrounding concepts of human stewardship and the earth as a sacred trust to be passed on to future generations.

1.1.3 Introduction to the methodology

A post-qualitative methodology (St. Pierre, 2021a) is utilised for the research inquiry with participatory approaches that foreground historically marginalised knowledge systems and creative practices for knowledge generation. This approach contributes to the wider trajectory of post-qualitative research practice and allows for a range of methods to be utilised for the data generation activities. A series of three workshops was designed to respond to the three sub-questions of the study. Using a decolonial and pluriversal lens, the workshops aimed to facilitate: reflections on the holistic nature of our relationships with each other and the wider world; reflections on the striking similarities between indigenous and traditional environmental literacies (ITELs) from a range of cultures and geographies; problem solving for contemporary contexts using an ITEL approach; and the sharing of personal items and stories from participants' own indigenous, faith, and/or cultural traditions that represented their relationships with the natural world.

The research sites for these workshops were based in Scotland and Malawi to explore how participants within the global minority *and* the global majority respond to and engage with ITELs as they relate to human-nature relationality, in the contemporary context of the environmental crisis. The research workshops were facilitated within formal and non-formal educational spaces: the University of Glasgow in Scotland and the Woodlands Community Development Trust (WCDDT), a community organisation also based in Glasgow. A condensed version of the workshops was facilitated with community members from the Sustainable Futures Global Network (SFGN) during its biennial symposium in Lilongwe, Malawi.

1.2 Structure of the thesis

This chapter introduced the research inquiry and its contexts, aims, and contributions. I have detailed key terminology as it has been used throughout the thesis and have

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introduced the theoretical and methodological approaches that have informed the data generation process and subsequent analysis of research data.

Chapter 2 presents an overview of the literature as it relates to the practice of EfS in the context of this research inquiry. This is categorised within three sections: EfS through non-formal education, decolonial approaches to EfS, and EfS through indigenous literacies.

Chapter 3 discusses the theoretical paradigm of the study, its decolonial and pluriversal approach, and the philosophical lenses of ecopedagogy, deep ecology, and IE. This chapter also contains a brief review of recent research using ecopedagogical approaches to EfS.

Chapter 4 details the methodological design of the study, the research sites, a discussion of the range of research methods used, the analysis with a particular focus on the creative approaches of collaging and writing, and finally ethical considerations for the study.

Chapters 5, 6, and 7 discuss the findings and analyses from each of the three research workshops (and three sections of the condensed research workshop in Malawi) designed to respond to the three sub-questions of the research inquiry. Chapter 5 explores the facilitation of reviving ITELs in the context of the environmental crisis. Chapter 6 discusses participants' attempts at using an ITEL approach to problem solve for contemporary sustainability issues. And Chapter 7 demonstrates the various ways in which participants reclaimed and celebrated ITELs within the workshop spaces.

Finally, Chapter 8 concludes the thesis by detailing its key contributions to theory and practice. Within this chapter, I also provide recommendations for future research directions to further contribute to a critical, radical, practice of education for sustainability and regeneration through the use of decolonial and pluriversal frameworks.

2. The Literature: a brief review of contemporary practices of education for sustainability (EfS)

The literature review for this inquiry evaluates academic discourse within the subject areas of the research question. This is by no means an extensive or systematic review of the relevant literature, that is beyond the scope of this thesis, especially considering the magnitude of literature available in languages other than English with a wide range of onto-epistemological stances. Instead, the purpose of this chapter is to review some of the most pertinent academic discussions related to this research inquiry which aims to explore the use of indigenous and traditional environmental literacies (ITELs) within non-formal educational spaces, in the contemporary context of environmental and sustainability education. This chapter, therefore, will thematically discuss the three main subject areas upon which the research question rests: education for sustainability (EfS) in non-formal education, decolonial approaches to EfS, and EfS through indigenous literacies.

The purpose of this study is to explore the use of ITELs for contemporary contexts of education for sustainability and regeneration within non-formal educational spaces and facilitate reflections on deep human-nature relationalities. Although ITELs have clearly existed - being lived and experienced - for thousands of years across cultures and geographies, research literature within Euro-Western academia around using ITELs for contemporary EfS is still in its nascent phase. This may be because the vast majority of teaching and learning for sustainability within non-formal education seems to be situated outside of Euro-Western research and academia and is not widely written about. Similarly, the majority of teaching and learning through ITELs takes place outside of the Euro-Western research and academic landscape, with most academic research literature discussing, for example, the preservation of ITELs through agricultural practices, stories, and traditions instead of an actively designed ecopedagogy that focuses on ITELs in mainstream educational spaces. Likewise, decolonial approaches to EfS although emergent in the research literature are not yet part of mainstream education within formal contexts and have not been well researched and documented within non-formal contexts.

This makes the inquiry of this thesis in the context of Euro-Western academia not only a novel endeavour, but crucial to create new possibilities by advancing sustainability narratives that are not limited to reductionist, imperialist Euro-Western paradigms.

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Subsequently, due to the scarcity of specific research literature, this chapter will discuss and analyse studies within the broad range of the research question as well as the three specific areas that the research inquiry rests on: EfS through non-formal education, decolonial approaches to EfS, and EfS through indigenous literacies.

2.1 Education for Sustainability (EfS) through Non-Formal Education

Non-formal education as defined by this widely cited definition is, “any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population” (Coombs and Ahmed, 1974). The wide scope of non-formal education allows for a range of teaching and learning practices and educational settings to be included within the categorisation. Described as a “hybrid” of the elements of formal and informal learning, it has a strong emphasis on learners’ needs and interests, is characterised by voluntarism to learning (Gage *et. al*, 2020; Alnajjar, 2022), and tends to have less of a focus on cognitive performance in favour of a holistic approach encompassing the intellectual, emotional, social, experiential, and behavioural aspects of learning (Norqvist and Leffler, 2017; Młynarczuk-Sokołowska, 2022).

Non-formal learning also signifies freedom from institutionalised control over teaching and learning practice (Colley *et. al*, 2003; Ionescu, 2020), which is probably the most important characteristic within the context of this study. The next section of this literature review on *Decolonial approaches to EfS* includes critiques of some of the prevalent practices of mainstream EfS within formal education, specifically in schools and higher education institutions (HEIs), with the often reductionist approach of education for sustainable development (ESD). Being bound to rigid structures and learning outcomes, formal education often leaves little space for the exploration of and experimentation with new subject matter and approaches to teaching and learning for sustainability and regeneration. Additionally, academic research literature around EfS in non-formal educational settings is insufficient and does not reflect the rich and diverse practices of EfS within the area. Some of the phrases and terms to search the research literature included: “EfS + non-formal education”, “ecopedagogy + non-formal education”, “non-formal education + sustainability”, and “non-formal education + ESD”. Non-formal education covers a broad

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range of educational settings and as such the search results span a wide range of teaching and learning modalities and outcomes, which although incomparable may be contrasted based on their approach.

For example, a recent study from Barcelona, Changwon, and Rosario – cities with 15 years of experience in developing the educating city model - uses the case study method to observe public education policies for ESD (Essomba *et al.*, 2022). The paper notes an international trend signifying a shift towards increased non-formal and informal educational programs for ESD. The authors evaluate that although results from ESD programs in the three cities may not be tangible, as they are achieved over the long term, the aim of the informal education programs was to create spaces and environments to invoke change through critical thinking experiences instead of planned interventions, which is in congruence with some of the intentions of this study. The non-formal ESD programs on the other hand were aimed both at social groups in vulnerable situations with an intention to increase inclusivity and at communities with a focus on reflexive and artistic approaches to ESD.

Similarly, Calvente et al. (2018) substantiate how non-formal education for EfS can facilitate deep critical reflection, enable mobilisation, and encourage sustainable practices relevant to local contexts. The paper presents experiences of non-formal EfS in the Petrópolis region of Rio de Janeiro, Brazil between 1997 and 2016. The authors stress the importance of educational activities that include the development of gardening skills, sustainable food practices, environmental ethics, and the impact they can have on students' understanding and reflection on sustainability issues, for instance by comparing plant and human development and their deeply intertwined mechanisms. In their paper on digital education for ESD in Germany during the pandemic, Kohler et al. (2022) similarly accentuate the importance of non-formal education for the development of social values and embedding ideas of sustainable development or sustainability within public consciousness.

Non-formal EfS through grassroots initiatives which have been effective at increasing young peoples' resilience in urban communities also emphasise the crucial elements of critical reflection and agency that led to their success (Ruiz-Mallén *et al.*, 2022). Two community initiatives in Barcelona - one for urban greening through planting tree pits and another for energy citizenship through constructing measuring devices for energy

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consumption - both increased participants' sense of self efficacy, agency, and responsibility. Ruiz-Mallén et al. (2022) specifically emphasise the development of agency as crucial to facilitating transformative learning through experiences that encourage young people to realise their own capacities to take action.

A number of studies on non-formal forest education (Grimm *et al.*, 2011; Kowasch *et al.*, 2022) identify the practice as EfS, ESD, or education for environmental citizenship and emphasise the need for connecting deeply with the natural world to develop a positive relationship with it. Kowasch et al. (2022) highlight the need for experience-based interactions with nature that help individuals broaden their reflections on sustainability. They stress the need for embodied relationships with an equally embodied environment and more than human world that allow for a different experience, compared to scientific understandings of it, to encourage emotional and spiritual reflections crucial for deep relationality and connection. Grimm et al. (2011) discuss the importance of forest education as a tool for conservation and highlight the significance of the long-held perception of forests as a medium to encourage thinking and acting for learners of all generations. They also note the increasing prevalence of non-formal EfS programs to support formal EfS or environmental education (EE) due to an increasing realisation of the effectiveness of this hybrid approach.

This is evident for instance through a study in Lisbon aiming to supplement formal education for ocean literacy with non-formal approaches. Students participating in the study being taught ocean literacy at school are taken to a fish market to explore marine produce and engage with sellers' expertise, emphasising the hands on and experimental learning approaches characteristic of non-formal EfS (Aurélío *et al.*, 2022). Another study at a Brazilian business school similarly emphasises the need for a hybrid approach specifically within HEIs to develop sustainability competencies in undergraduate students by combining formal and non-formal learning strategies (Caldana *et al.*, 2021). It also underlines the importance of non-formal, place-based, and community learning in equipping students with the skills to tackle real world sustainability challenges within their communities.

The need to move beyond formal education for EfS to develop a blended approach that integrates pedagogy, andragogy, and heutagogy has also been pointed out (Carr *et al.*, 2018). A case study analysis discusses the importance of lifelong learning approaches with

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holders of backyard poultry enterprises in Kenya that targeted the SDG goals of poverty reduction through personal empowerment. Empowerment was described as the capability to investigate issues and develop ideas, be self-aware and articulate, and engage in reflective learning practices, with the study substantiating how transformative non-formal and informal learning successfully contributed to the process.

Equally, there is considerable evidence in the otherwise limited literature for non-formal education practice for EfS and EE for communities, including specifically rural and vulnerable communities. For instance, a qualitative study with project-based learning for out of school youth and adults in Ethiopia was implemented to equip the community with a basic skill set for environmental security and livelihoods (Zikargae, Woldearegay and Skjerdal, 2022). A similar example from the Manyeledi community in South Africa details the implementation of a community engagement project intended to increase the community's resilience to environmental challenges (Teane, 2021). The project sought to provide basic literacy and numeracy skills in addition to developing new farming techniques and participation in small-scale businesses that could sustain the community in the long term, including using methods to sieve off chemicals that otherwise effected crop yield.

Similarly, another project with an integrated approach includes both community awareness and capacity building and is aimed at farmers in rural Nepal afflicted with poverty and climate change. Coppock et al. (2022) discuss the importance of non-formal EfS and experimental design, emphasising the role of non-formal education in helping realise untapped human potential, including how opportunities to manage social change and climate resilience through non-formal EfS have been neglected. The authors argue that non-formal EfS when designed in respect with the local culture and the community's needs has been especially effective in terms of improving risk management and introducing innovative solutions (Coppock *et al.*, 2011).

It is evident that non formal educational practice for EfS in the literature takes on many different forms and takes place within a range of settings, varying from digital spaces to urban communities and rural ones, often with a focus on agricultural and livelihood security, and with a wide range of audiences that includes the young and the old, the marginalised, and those who might have never been “educated” at school. This includes various forms of EfS such as ESD, EE, forest education, land education, education for

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environmental citizenship and further categorisations with similar intentions for sustainability, conservation, and regeneration. The practice is wide ranging but also has common themes of: inclusivity; practicality; holistic learning; flexibility; responsiveness to the learner's context; and is of course devoid of standardised assessment in favour of a more human and hands on approach that seems to create a successful medium for teaching and learning for EfS.

As previously highlighted, non-formal education on its own has evidenced a recent revival in both “developing” and “developed” countries, one of the main reasons being the need for alternative educational settings and modalities for the needs of individuals and populations that do not neatly fit into the formal education system. Rogers (2019) also notes the increase in non-formal education research and related publications since the early 2000s, and since UNESCO's (2006) redefinition of non-formal education as a medium in between formal and informal learning, which refrained from categorising it *outside* the formal system. The paper highlights community learning centres as prime locations for non-formal EfS (also one of the fieldwork sites for this research inquiry), with a case study from the Folk Development Schools in Tanzania to elaborate on the possibilities of designing government policy, and implement a wide scale practice of non-formal EfS (Rogers, 2019). Rogers (2019), therefore, makes a strong argument for the need to utilise non-formal education for the SDGs to supplement formal EfS, especially due to the sheer magnitude of what needs to be achieved and the insufficiency of current teaching approaches for EfS through formal education systems.

2.2 Decolonial Approaches to Education for Sustainability (EfS)

One of the aims of this research inquiry is to explore and analyse how environmental literacies may be decolonised for problem solving for sustainability in contemporary contexts. As previously noted, decolonial approaches to EfS, although emergent within the research literature, are still not the norm within mainstream teaching and learning practice for environmental sustainability and regeneration, both within non-formal and formal educational spaces.

Why is that still the case despite there being a visible increase in decolonial discourse in research and academia over the last decade? There are strong arguments for global Euro-Western (neo)colonialism severing the relationship between humans and the natural

Chapter 2: The Literature: a brief review of contemporary practices of education for sustainability (EfS) environment, with more than 500 years of colonialism being referred to as one of the primary causes of climate change (Davis and Todd, 2017; Whyte, 2017; Baskin, 2019; Singh, 2019). It is understandable then that current educational and socio-economic systems within a deeply colonised world would be deemed more worthy of conservation than the natural environment (Whyte, 2018).

The challenge then is to acknowledge that HEIs within Euro-Western educational spaces, and spaces modelled based on these, are not only a product of modern colonialism but are also dependent on and responsible for its reproduction (Stein, 2019). When education plays a central role in propagating (neo)colonial perspectives (Louis, 2021) and pursuing economic development at the cost of human and non-human life, it is imperative to question the very foundations and paradigms on which it is built. Stein (2019) notes different levels of denial within the education system that prevent practices of decoloniality, including denial of our relationality with other beings and life forms on earth, and denial of the inherent unsustainability and (neo)colonial dominance of current socio-economic systems of growth and development.

The post development studies field, however, offers alternatives to current understandings of development emphasising de-growth (Hickel, 2021) and the idea of the pluriverse which encompasses many worlds and knowledge systems (Escobar, 2011, 2018; Maldonado-Villalpando *et al.*, 2022). For instance, grassroots innovations for development alternatives such as those from autonomous Zapatista education in Mexico provide relevant substitutes to formal education and play an important role in generating knowledge unrestricted to the classroom, linking teaching and learning to the social activities of the Zapatistas (Maldonado-Villalpando *et al.*, 2022). This pedagogical practice goes beyond the universal notions of education from SDG 4, to envision education and EfS beyond the Euro-Western development agenda which is based in colonial, materialist, and capitalist understandings of the world (Escobar, 2011).

Decolonising knowledge and society are also one of the main features of environmental justice theory in Latin America, as explored by Rodríguez and Inturias (2018). The theory considers Euro-Western cultural hegemony and the project of modernity to be drivers of socio-environmental injustice. The authors, therefore, propose conflict transformation theory and strengthening indigenous peoples' power of agency to overcome histories of

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oppression and support conservation practices through indigenous literacies and perspectives in the region.

Additionally, creating institutional systems and structures that allow for the learning and practice of multiple knowledges in environmental social science research design has been strongly argued for (Zanotti *et al.*, 2020). Specifically, there is a strong emphasis on how onto-epistemological and institutional structures, as related to higher education, need to transform to create spaces that allow for researchers to work with and for indigenous peoples. This work may then flow back into research and education within their home institutions and organisations through decolonised structures that encourage the dismantling of power dynamics, including those between the “researchers” and the “researched” (Zanotti *et al.*, 2020).

Decolonial approaches that incorporate multiple cultures and ways of being to foreground indigenous knowledge and literacies for sustainability and regeneration are strongly advocated for to change the “modern-colonial matrix of power and knowledge” (Fleuri and Fleuri, 2018, p. 8). Incorporating indigenous principles such as *buen vivir*, which may loosely be interpreted as collective well-being or good living, into pedagogical approaches as exemplified by Paulo Freire is understood to be crucial in recognising the legitimacy of indigenous knowledges for education beyond schooling, for both community and social praxis (*ibid.*). It is then vital for researchers, educators, and community development practitioners to critically assess and analyse the dichotomies that exist between the colonising and the colonised, or “developed” and “developing” countries (Mikkonen, 2020). Specifically, when it relates to interventions for ethical, sustainable, social change in marginalised communities within previously colonised nations, the literature in this field stresses the urgent need to dismantle power structures within research, theory, and practice.

Research studies within wider EfS and global citizenship education (GCE) have also raised concerns about existing approaches to ESD and GCE which reiterate colonial power structures through narratives that perpetuate the dichotomy of a “we” in global minority countries who solve problems for “them” in global majority ones (Pashby and Sund, 2020). Mainstream ESD has also been criticised for focusing on behaviour change with a lack of critique and action around deeply entrenched, systemic issues that have led to the environmental crisis (Van Poeck and Vandenabeele, 2012). The practice of ESD reiterates Euro-Western onto-epistemologies and approaches to “sustainability” at the expense of

Chapter 2: The Literature: a brief review of contemporary practices of education for sustainability (EfS) indigenous literacies and ways of knowing (Blenkinsop *et al.*, 2017). Vásquez-Fernández and Ahenakew, (2020) make an excellent evaluation of the term “sustainable development” illustrating how development and categorising who or what is developed, developing, or underdeveloped is rooted in reductionist Euro-Western ideas of economic development. Further, the term is a misnomer, because development as it is widely defined with a focus on economic and capitalist development is inherently unsustainable.

The globalised approach to “sustainable development”, therefore, fails to deliver precisely because it fails to address the inherent imperialism in its forced onto-epistemology based in ideas of infinite economic growth, ignoring the diversity of local realities and paradigms (Mignolo, 2019; Kopnina, 2020b). This hegemonic approach completely disregards human-nature relationality and inter-being reflected within many indigenous communities that have co-existed with varying possibilities with the wider natural world. Their relationships with other beings are in a constant state of negotiation and tension. Complex and layered, they are based in respect, reciprocity, and care like any other relationship with human kin (Vásquez-Fernández & Ahenakew, 2020), all concepts that mainstream ESD simply fails to grasp.

Although the term “sustainable development” as it has been propagated through Euro-Western paradigms is being increasingly criticised within the research literature (Engelman, 2013; Kopnina, 2014; Adelman, 2018), it is still widely utilised even when advocating for indigenous knowledge integration into contemporary EfS (Breidlid, 2012; Masoga and Shokane, 2019; Arkaifie and Dichaba, 2022). This is clearly evident of how Euro-Western language and frameworks are automatically accepted and naturalised and how establishing anything other than Euro-Western notions of truth and reality needs a very conscious “going against the grain” in long and sustained efforts of dismantling oppressive power structures and disrupting colonised psyches. Bellingham (2022), for instance, proposes a diffractive reading strategy combining Barad’s diffractive theory with decolonial approaches by bringing together opposing ideas in diffractive relations. Epistemic hegemony can only be challenged when texts are read without assumed hierarchies over another, and when we critically examine our relationality with imperial knowledge systems and how these effect people and their relationships with the world they live in.

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In the same vein, Kato, Galamba, and Monteiro (2023) make a strong case for critically analysing deeply embedded neoliberal values in mainstream science education that prevent it from making meaningful contributions to sustainability. Citing again, the work of Paulo Freire as well as Enrique Dussel, the authors draw on these works to study the development of decolonial pedagogies in Latin America. They argue that “science for domination” (p.1) as it is practiced from a neo-liberal and (neo)colonial perspective has not only been historically used for political domination and exploitation, but still continues its hegemony of social, economic, and scientific pursuits today (Meneses and Santos, 2008). Beginning with the Enlightenment, the project of modernity separated science from art and culture and used it as the sole authority to explain the nature of life and being and all that exists (Robles-Piñeros *et al.*, 2020). Modern, imperial “science” then created a hierarchy that denied the legitimacy of other knowledge systems because they produced knowledge through onto-epistemologies different than those of Euro-Western paradigms (Meneses and Santos, 2008). Advocating for a decolonial science education, Kato, et. al (2023) also highlight studies that emphasise the importance of bridging traditional ecological knowledge (TEK) and academic ecological knowledge (AEK) to inform science education, where all lives and knowledge systems are equally valued.

The literature on decolonial EfS although limited is significant in making an excellent case for the revival of indigenous and traditional ways of knowing and being in the world, specifically in the context of contemporary sustainability issues. Another study related to reviving indigenous knowledge systems makes a case for agro-ecological practices based in indigenous perceptions of life, and cultural and spiritual values, that have sustained the biodiversity of the world (Swiderska *et al.*, 2022). The paper reiterates the sentiment evidenced within much of the existing literature: decolonising research practices and knowledge generation is imperative for sustainable and regenerative futures, and in this case, for agricultural sustainability to prevent further loss of biocultural heritage across the world. The paper also highlights that decolonial and indigenous land movements, unlike in Latin America, have not gained momentum in places such as Rabai in Kenya, Northeast India, and Yunnan province in China where the study took place. Four virtual workshops were facilitated with participants who stressed the urgent need for revitalising food systems through indigenous knowledge practices, to respond to multiple threats to biocultural heritage from contemporary agriculture, development, and conservation policies. The

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authors conclude by presenting a decolonial framework for action research on indigenous food systems to mitigate the rapid loss of biocultural heritage (Swiderska *et al.*, 2022).

Elsewhere, within the literature, fortress style conservation policies driven by international donors have also been heavily criticised for harming already marginalised indigenous communities, by placing conservation before people, often leading to evictions from ancestral lands for purposes of conservation (Domínguez and Luoma, 2020). The authors propose the decolonisation of conservation policies, where projects instead invest funds in researching indigenous conservation methods to integrate them with contemporary conservation science. They also argue for a rights-based approach to conservation that does not violate international human rights laws.

Another paper on sustainability science makes a case for using African philosophies to derive methodologies to question academic and methodological imperialism. The authors argue that the contexts of contemporary research studies in Africa are derived from bodies of literature that are devoid of descriptions of the relationships of people (who are being researched) with their environments, histories, and identities (Chilisa, 2017). The paper suggests that an ethnophilosophy that centres African ways of thinking and being with the environment including language, stories, and art could help rectify these issues and guide ethical research processes from literature reviews up till the eventual dissemination of findings. Noting disciplinary approaches as products of Euro-Western academia, the authors conclude that sustainability challenges in Africa cannot possibly be resolved solely through disciplinary knowledge, with many challenges requiring specifically local and indigenous approaches to problem solving that foreground the importance of bringing communities together (Chilisa, 2017).

Yet another study with a curriculum review of forestry education at the Sokoine University of Agriculture, Tanzania, reveals the absence of narratives that contrast scientific understandings of forestry education. Sungusia, Lund, and Ngaga (2020) are critical of the suppression of diverse knowledge systems through the imposing of a singular version of forestry education on students and stress the need to decolonise imperialist curricula. They argue that the current curriculum demands separation of people and forests, prioritises timber while devaluing the forest, imposes universalised solutions, and stigmatises the livelihoods of rural communities. They advocate for an open and curious approach to forestry education which is context appropriate, and which can empower foresters with a

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diversity of knowledges and values for long term ethical and sustainable forest management (Sungusia, Lund and Ngaga, 2020).

A special issue titled, “Land education: Indigenous, post-colonial, and decolonizing perspectives on place and environmental education research” (Tuck, McKenzie and McCoy, 2014) in the *Environmental Education Research* journal, highlights issues related to land, settler colonialism, and indigenous agency, resistance, and place names. Within this issue of articles related to land education deriving from indigenous cosmologies, agency, and resistance, Tuck et.al (2014) document how rare it is to find explicit discussions of decolonial and indigenous concepts of land within mainstream environmental education research. Touching upon this, Veracini (2011) notes that although there are differences between exploitative colonialism and settler colonialism, the intention of both is to dispossess people of their land and rights and make it available for their own settlement. Added to that is the refusal of the coloniser to acknowledge the continued existence of colonisation and cultural imperialism (Said, 1994b), with hierarchies so deeply embedded through force, law, policy, and ideology that they become ingrained and naturalised over time (Tuck et.al, 2014).

“Land” within indigenous traditions is suffused with deep meanings arising from the community’s long relationship with it, relationships that created bodies of pedagogy and knowledge that include the spiritual, emotional, and intellectual in *addition* to the material (Styres, Haig-Brown and Blimkie, 2013). Consequently, the special issue details studies using a range of methods for land education including: social mapping for vulnerable groups in Brazil (Sato et. al, 2014); historical analysis of settler colonialism in Jamestown, Virginia; photovoice for taro growing methods in Hawaii (Meyer, 2014); and a critical analysis of eco-heroic quests for environmental communion as depicted in Hollywood movies (Korteweg and Oakley, 2014). In the last paper, the authors argue that such depictions need to be placed within contexts of existing indigenous knowledges and literacies to “break the cycle of Eurocentric celebrations of solitary heroism, rugged individualism, and ignorance of place” (Korteweg and Oakley, 2014, p. 131).

Indigenous knowledge integration for sustainability has also been utilised in what has been termed as “epistemological stretching”, described as a pedagogical practice which enables students to expand their ways of knowing through learning how other people make sense of the world (Harmin, Barrett and Hoessler, 2017). With an emphasis on decolonising

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relations between humans and the non-human world, the practice enables students to critically analyse the epistemologies of their own field and engage with indigenous knowledge systems to expand the way they view the world. Intuitive inquiry was used as a research method with former students on a graduate level environmental decision-making course at the University of Saskatchewan. The authors report that although participant interviews reflected tensions between knowledge generated through scientific validation and indigenous knowing, they experienced strong learning outcomes through bridging world views, deconstructing epistemic hegemony, and reconceptualising relationships. Harmin, Barrett and Hoessler (2017) conclude the paper by noting, however, that universities only welcome epistemological pluralism when it aligns with established academic conventions of knowledge generation. The authors, therefore, stress the need for engaging ethically with plural world views and designing research methodologies that reflect the onto-epistemologies of researched communities.

Decolonising and indigenising education including restoring traditional knowledge have also been noted as new agendas for lifelong education. Prete and Lange (2021) discuss how education is crucial to the survival of a culture and to reclaiming indigenous traditions. However, because this reclamation is still practiced through Euro-Western education systems, academics and researchers will need to navigate the paradox as it arises in each of the indigenous and decolonial contexts they work in. It is telling how almost all of the above studies are either critical of current practices of EE and ESD, or make strong arguments for decoloniality, advocating for the integration of plural world views and onto-epistemologies in environmental education and research. We simply are not there yet. And most certainly not within HEIs, as is evident from the scarcity of literature using decolonial approaches for mainstream EfS within spaces of formal education.

Finally, there is a sense of justified anger, frustration with existing socio-economic and academic systems and structures built on (neo)colonial worldviews, and disappointment with the current state of teaching and learning within mainstream EfS. However, there is clearly also a strong sense of resistance, determination, and perseverance which points to the ever-existing human hope and belief in working towards healthier futures for both humans and the wider natural world. The shift towards decolonising environmental education and literacies within Euro-Western educational spaces (and spaces modelled on these across the world) seems to have only just begun, and it would be unrealistic to assume that we will be able to undo, unlearn, and un-school more than 500 years of

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(neo)colonial ideological hegemony, epistemicide, exploitation, and educational imperialism within a calculated frame of time (Nakagawa, 2021).

2.3 Education for Sustainability (EfS) through Indigenous Literacies

This section will provide an overview of the practice of contemporary EfS specifically as it relates to or foregrounds indigenous environmental literacies. As indicated within the previous sections, it is rare to find a focused practice of EfS through indigenous literacies within formal education, with its standardised assessment and testing in HEIs, colleges, and schools. This applies to the Euro-Western model of formal education as it is practiced around the world as it has been imported through globalisation and cultural imperialism. Integrating indigenous and traditional ways of knowing and being into EfS is in itself a decolonial approach, but where the previous section specifically discusses decoloniality, this section focuses on the pedagogical practice of EfS in its widest sense through indigenous literacies.

The literature in this area primarily focuses on *advocacy* for the integration of indigenous literacies (Kulnieks, Longboat and Young, 2016; Lin *et al.*, 2021), with fewer examples of this in practice. Most EfS that actually takes place through indigenous literacies is within contexts outside of formal and mainstream educational settings in communities, indigenous schools (Bissett, 2012), and outdoor spaces. Examples of EfS through indigenous literacies include studies on indigenous perspectives in Canadian children's literature for environmental consciousness (Korteweg, Gonzalez and Guillet, 2010) and indigenous communities developing their own environmental health and sustainability curricula (Donatuto *et al.*, 2020). However, the literature shows that there is an absence of a sustained EfS pedagogy derived from indigenous literacies within mainstream formal and non-formal educational settings, which could otherwise provide time-tested approaches to address sustainability issues in the contemporary context of the environmental crisis (Nelson and Shilling, 2018).

Within a study in Limpopo Province in South Africa, an African philosophical lens was utilised with twenty key people from the community including elders, traditional healers, and farmers. These key people were invited to participate in a focus group discussion to explore suitable indigenous knowledge systems to be used for EE and social work for

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sustainability (Masoga and Shokane, 2019). The findings, in addition to generating a wealth of indigenous literacies, revealed that the sustainability efforts of indigenous communities often went unrecognised, with the same communities being excluded from the custodianship and management of the very plant resources they depended on for food and medicine. The authors contend that indigenous perspectives are urgently needed for the contemporary practice of EfS to address socio-environmental concerns and strengthen local capabilities in disaster risk management, traditional agriculture, and environmental literacies (Masoga and Shokane, 2019).

In a similar study in Uganda, a participatory action research (PAR) methodology was utilised to integrate indigenous knowledges into formal education in secondary schools. Teachers and students worked as co-participants in the study to organise three learning activities to integrate indigenous literacies about community service, sacred places, and the medicinal use of native plants into the school curriculum (Kezabu, 2022). The study was designed in response to the disconnect from community and culture that the author observed, as a result of going through the Ugandan formal education system, which understandably mirrors the global Euro-Western model of education inherited during the colonial period. The findings proved to be very fruitful: collaborating with teachers, community elders, and students using participatory methods and place-based pedagogies enabled learners to reconnect with their community and culture through a plural, just, and inclusive curriculum (Kezabu, 2022).

Another study on integrating indigenous literacies into an early childhood education programme for kindergarten at Boania primary school in Ghana also reports the practice to be crucial for improving relationships with the environment (Acharibasam and McVittie, 2022). Indigenous knowledge integration was led by two indigenous elders by teaching children through outdoor learning activities, followed by in-depth interviews with the students, their teacher, and indigenous elders, who also acted as co-researchers. The onto-epistemology of the Kasena ethnic group in Northern Ghana which strongly foregrounds human and non-human inter-relationality was used to inform teaching and learning practices. Specifically, the Kasena focus on the spiritual nature of all beings, including entities such as rocks, allowed the students to develop deeper relationships with their natural environment. Due to the experiential model used for the teaching and learning of indigenous environmental literacies, students had the opportunity to engage with real world environmental issues (Acharibasam and McVittie, 2022). The authors, however, are critical

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of the anthropocentric language used in Ghana's early childhood environmental education curriculum and strongly advocate for an approach that focuses on indigenous literacies, specifically after their successful attempt to integrate these within the curriculum at Boania primary school.

Proceeding geographically to the Far East, a community education programme called "Facing the Mountain Education" was developed by the Bunun indigenous group in Taiwan as part of a project to revitalise indigenous knowledge through collaborative and experiential learning. In this study, Nesterova (2020) discusses the plurality within indigenous knowledge systems and their responsiveness to local needs, where place based epistemological processes are developed through a spiritual socio-environmental identity based in deep relationships with the natural world. The programme focused on using land itself as the teacher and the classroom. Participants from the indigenous community engaged in knowledge sharing activities with elders through cooking, learning about traditional medicine and plants, and the importance of developing their own cultural and environmental identity. The intention of the programme was to revive indigenous knowledge within the Bunun community to strengthen their agency and identity, and to highlight the insufficiency of technical skills alone to mitigate sustainability challenges. The author argues for the integration of indigenous knowledge into EE (environmental education) and education as a whole for pluriversal perspectives on sustainability, to support ongoing processes of environmental and social justice (Nesterova, 2020).

Although literature focusing on the use of indigenous literacies for EfS in non-formal, and especially formal educational spaces, is still scarce, the importance of integrating indigenous perspectives within mainstream EfS has been strongly argued for. Chandra (2014), argues this position through case studies with indigenous people in British Columbia and the Roviana people in the Solomon Islands as evidence for using indigenous literacies to successfully achieve sustainability goals. Similarly, Whitehouse et al. (2014) argue for the integration of indigenous perspectives into EfS through a cross curriculum analysis of land education in the Australian curriculum and the Sea Country Guardians (a formal reef education programme). The analysis revealed that the Australian curriculum did not include indigenous, relational, ontological positions including spiritual connections to land, sky, wind and water, unlike in the Sea Country Guardians, instead taking a strictly "science" based approach disregarding literacies of the land that would have strengthened and supplemented the national curriculum. The authors express their disappointment at the

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lack of alignment between the national formal education programs, evidencing the need for serious decolonial work to take place within the formal EfS landscape (Whitehouse *et al.*, 2014). This separation of Australian cross-curriculum priorities for sustainability and indigenous studies in HE is also reported in a later study by Woollorton *et al.* (2022). The authors argue for the re-centring of indigenous knowledge within Australian HE through an analysis of six case studies that focused on indigenous studies and sustainability in HE teaching and research. They also propose a regenerative learning framework for centring indigenous perspectives on sustainability within Australian HE, with experiential and practical learning practices that foreground environmental restoration and renewal.

Similar science-based approaches that foreground strictly Euro-Western narratives of what constitutes real knowledge have been criticised for promoting onto-epistemological hegemony within research and academia (Lowan, 2012). “Scientia”, the Latin root for science translates to knowledge, with various forms of sciences existing within cultures (Snively, 2009). However, as previously iterated, even when indigenous knowledges have been integrated into mainstream narratives on sustainability, it is only parts that are congruent with the scientific method that are deemed to be acceptable (Lowan, 2012). Aspects related to the spiritual foundations of indigenous knowledges, values, and worldviews are disregarded due to their incongruence with (neo)colonial Euro-Western paradigms of knowing and being (Simpson, 2004).

Lowan (2012) also notes several examples from Canada that evidence the practice of EfS through indigenous literacies within non-formal and informal education spaces. These range from Aboriginal groups sharing ethnobotanical knowledge and culture at the Montreal Botanic Gardens (Pardo, 2009), a “Bridging the Gap” program in Manitoba using experiential learning with Aboriginal youth to learn about the natural world (Kazina and Swayze, 2009), and a land education program in Nunavut developed by community members to prevent young people from losing connections to their land and culture (Takano, 2005). However, these examples are evidenced outside of formal education spaces and are mainly aimed at indigenous communities themselves.

An excellent example of EfS through indigenous literacies that evidences the integration of indigenous and empirical scientific knowledge can be found within an Estuary Monitoring Toolkit, developed by New Zealand’s National Institute of Water and Atmospheric Sciences (NIWA). Dodson and Miru (2021) report that the toolkit combines empirical

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measurement tools with Māori values of observation that include perspectives on the sustainable use of estuaries. The toolkit as an example of indigenous led environmental science where cultural education is shared with local school students to help them engage with contemporary and traditional ways of monitoring the environment (Dodson and Miru, 2021). The authors explain that although student data is limited in measuring the efficacy of delivering Māori and science-based knowledge, the data show a proof of concept of the toolkit as an example of innovative EE to deliver a valuable and enjoyable learning experience.

Elsewhere, a North American study about EfS through indigenous literacies discusses the various program offerings in indigenous higher education institutions (IHEIs) in Canada and the United States (Leonard, 2021). The paper reports that although HEIs in North America have attempted to integrate indigenous knowledges with knowledge developed from the scientific paradigm through discussions of decoloniality and indigenisation, there is a scarcity of meaningful wide scale results. However, IHEIs have developed a template for knowledge integration that can aid implementation within other HEIs. The study examined the websites of 62 IHEIs across Canada and the US with similar program offerings which included: land and sovereignty; the natural environment; the idea of indigenous institutions; indigenous knowledge and technology; economy including food security and entrepreneurship; human behaviour and community values; and cultural values including language and ties to the land (Leonard, 2021). The paper concludes by appreciating the efforts of IHEIs in developing indigenous frameworks for EfS and empowering indigenous youth with the capacity to respond to contemporary sustainability challenges.

In the southern hemisphere, a study from South Africa discusses the success of a program developed through indigenous literacies that was implemented in seven schools in the eastern cape (Cocks, Alexander and Dold, 2012). *Inkcubeko Nendalo* which translates to “culture and nature” in the isiXhosa language, was a program developed in response to the loss of indigenous knowledge and biodiversity in the region, in an attempt to reconnect students to and conserve local bio-cultural heritage. Based on 15 years of research, the program intended to build learner and teacher capacities through revitalising lost knowledge and raise awareness about the intertwined nature and evolution of culture and nature. Students learn through Xhosa cultural artefacts, forest excursions including reflections in silence, and formal coursework all through participatory learning approaches.

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The authors recommend national implementation of the program allowing for adaptations related to local diversity (Cocks, Alexander and Dold, 2012).

As evidenced within this section, indigenous (environmental) literacies have yet to make their way into mainstream EfS within both formal and non-formal educational settings. Most examples in the literature discuss the use of indigenous literacies to revive these ways of thinking and being, but the practice is usually with either small and/or marginalised communities, indigenous higher education institutions (IHEIs), or indigenous communities themselves that already have a history of engaging with these literacies. Acton et al. (2017), argue that the practice pedagogy focusing on indigenous environmental literacies remains problematic due to including simplified versions of indigenous knowledge into mainstream EfS, instead of actual sustained engagement with multiple onto-epistemologies. A successful approach would then involve treating indigenous literacy integration as an ongoing project and dialogue instead of a fixed destination, which would help enable the use of “situated, plural and reflexive knowledges that work together in inherently relational ways” (Acton *et al.*, 2017, p.1).

It is evident from the literature that there is a crucial need for a transformative approach to EfS that integrates holistic material and spiritual teaching and learning practices that enable learners to: experience shifts in environmentally conscious values and intentions; question dominant paradigms; engage with affect and relationality (Perry, 2021); and understand and address ecological problems effectively (Burns, 2015). However, these transformations can only take place through an intentionally designed pedagogy that is vibrant, nurturing and engaging for learners and which motivates them to be change makers (Widhalm, 2011), for sustainable and regenerative futures. This research inquiry, therefore, responds to scholarly calls including those from Acton et al. (2017) above and Kahn (2010) by introducing learners to indigenous and traditional environmental literacies (ITELs) through contemporary sustainability education that contain inherently relational plural and reflexive knowledges. Further, the inquiry facilitates this in places of mainstream learning (higher education and community organisations) *and* with a diversity of individuals, both of which are practices scarcely found within contemporary literature on sustainability education.

3. Theorising for education for sustainability and regeneration: a decolonial and pluriversal framework

The theoretical paradigm that informs this study is rooted in decoloniality (Said, 1994a; Quijano, 2007; Mignolo, 2011; Bhambra and Holmwood, 2021; Fanon, 2021) and the concept of the pluriverse (Escobar, 2011, 2012, 2018; Escobar and Frye, 2020; Perry, 2023), and draws from three distinct but intertwining theoretical spaces: ecopedagogy (Kahn, 2010), deep ecology (Naess, 2008) and Islamic environmentalism (IE) (Nasr, 1987a; Upton, 2008; Gade, 2019). The intertwining of these spaces creates a novel decolonial and pluriversal theoretical framework - a key contribution of this study - and opens new spaces of possibility for education for sustainability and regeneration. This intertwined, decolonial, and pluriversal theoretical framework bridges traditional faith-based philosophy with modern educational and ecological theory, decolonising universalised Euro-Western perceptions of human-nature relationality, and creating a pluriversal lens for the design and analysis of the study.

The theoretical lens for this inquiry represents the coming together of the past and the present, overcoming linear perceptions of life and time on earth, and bridges the binaries of the geographic and philosophical “East” and “West”, abandoning modern perceptions of ancient indigenous and traditional knowledge systems as primitive and obsolete. The framework also provides an illuminating conceptual lens for “seeing” data from a holistic material and spiritual perspective, drawing out insights that would be impossible to realise without an intertwined theoretical lens. The decolonial and pluriversal approach combined with the intertwined theoretical lens account for human relationality with each other, with non-human life and forms within the natural environment, and the wider social, political, and economic world, offering a timely, critical, and emancipatory paradigm for the contemporary practice of education for sustainability and regeneration.

The three theoretical spaces that make up the lens for the study are grounded in both theory and praxis: the spaces of ecopedagogy, deep ecology, and Islamic environmentalism (IE) not only offer distinct ways to perceive the world but also create a strong framework of practice for socio-environmental justice and for deepening human-human and human-nature relationality. The sections that follow will first discuss the decolonial and

pluriversal approach of the study, followed by an exploration of the three distinct but intertwining theoretical spaces that inform this research inquiry.

3.1 A Decolonial and Pluriversal Approach

The inquiry uses a decolonial and pluriversal approach in the design of the theoretical framework and data generation activities to question the foundational philosophies we use to perceive the natural world, in the contemporary context of the environmental crisis. The decolonial lens enables myself as the researcher and my participants to critically question capitalist, extractivist, understandings of human-nature relationality as they have been promoted through (neo)coloniality, industrialisation, and modernity (Oliveira, 2021). It opens up space within the research encounters for critical thought, reflections, and conversations creating teaching and learning spaces where historically marginalised knowledge systems, philosophies, and literacies can be revived and celebrated. The decolonial lens, therefore, enables the aims of this research inquiry to *revive*, *apply*, and *celebrate* indigenous and traditional environmental literacies (ITELs) within the research spaces of this inquiry and enable a multimodal articulation of indigenous, faith, and/or cultural traditions and perspectives around human-nature relationality.

The decolonial approach for the study draws from both postcolonial and decolonial scholarship (Said, 1994, 1997, 2003; Mignolo, 2011; Mignolo and Walsh, 2018; Memmi, 1991; Bhabra and Holmwood, 2021; Fanon, 2021; Quijano, 2024; Bhabra et al., 2018), especially Edward Said's corpus, including his seminal work *Orientalism*. Both areas of postcolonial and decolonial theory have developed in response and resistance to the hegemony of Euro-Western, (neo)colonial knowledge production leading to the subjugation, domination, and eventual erasure of non-Euro-Western knowledge systems, philosophies, cultures, and ways of living and being as they relate to the global majority (Campbell-Stephens, 2021). In addition to anti-colonialism (Go, 2023), they constitute theoretical spaces that challenge universal notions of truth and reality and constitute bodies of work and movements that seek to revive and generate knowledge unencumbered by the hegemony of (neo)colonial onto-epistemological superiority. The ontological and epistemological value of these theoretical spaces, therefore, is immense. Both in terms of critically evaluating contemporary mainstream understandings of the world, including perceptions of human-nature relationality and how these were produced and universalised,

and how we can collectively resist this universalisation of Euro-Western understandings of reality to create spaces for a plurality of voices, knowledge systems, cultures, and ways of living and being (Escobar, 2018).

Epistemic decolonisation then is an act of resistance that seeks to dismantle Euro-Western intellectual hegemony, enabling the global majority to rewrite their own histories and stories, and revive their knowledge systems, philosophies, and literacies (Mignolo, 2011). The scope of this research inquiry, however, is not limited to the exploration and revival of indigenous, faith, and/or cultural literacies from the global majority or (neo)colonised nations. The decolonial approach of the study is an equal invitation for the global minority, or (neo)colonising nations, to critically question the origins and development of Cartesian dualism and the foundational philosophies and worldviews leading to materialism, industrialisation, and extractivism (Sörlin, 2022). This includes their ramifications for contemporary, mainstream understandings and experiences of human-nature relationality, specifically in the context of the environmental crisis.

As a research inquiry within the field of education, it is important to highlight that the way we learn and what we learn about ourselves and the world, whether through formal, non-formal and/or informal everyday learning, is underpinned by ontological and epistemological assumptions of what is accepted to be the reality of this world and beyond. This includes the reality of the natural world and our relationalities with human and non-human life and forms on earth. The decolonial approach of the inquiry, therefore, highlights the geopolitics of knowledge creation (Sharp, 2011) and subjugation where one form of knowledge is deemed universally true and applicable to all peoples and places (Feldman, 2019). It critiques the erasure and re-writing of histories and knowledge systems through Euro-Western (neo)colonisation that has instilled the superiority of Euro-Western ideals and onto-epistemology deep within the psyche of populations living both within the global majority and the global minority. This was (and is) primarily achieved through usurping the educational systems and practices of diverse nations replacing them with schools, language, and curricula deeply rooted in Euro-Western onto-epistemologies and ideals of what “education” looks like (Said, 1994a, 2003).

Consequently, the decolonial approach of the research inquiry serves to foreground indigenous, faith, and/or cultural knowledges systems, philosophies and literacies, not as

superior entities in conflict with other knowledges, but *in relation* to them, existing in the pluriverse (Escobar, 2012), celebrating shared themes and literacies, *while* maintaining their distinct uniqueness that contributes to the plurality of the world and its peoples. Escobar's (2011, 2018) pluriverse emphasises the need for alternate realities and possibilities as opposed to universalised Euro-Western notions of socio-economic progress and development. His work supports emerging movements related to degrowth, *Buen Vivir* (much like the philosophy of *Ubuntu*), and the rights of nature, critiquing both conventional sciences or what Kahn (2010) terms as Western Modern Science (WMS) (see next section), and modern concepts of development to propose alternative and plural visions for the post-development era.

Escobar (2011, 2018) also critiques the ontological dualisms and Cartesian rationalism pervading mainstream Euro-Western scholarship such as nature/culture, reason/emotions, object/subject and argues for relational ontologies that recognise the deep inter-relationality between the world's entities, including relationalities between humans and the natural world. Escobar's body of work uses insights from ancient wisdom traditions including indigenous philosophies and Buddhism, advocates for epistemic pluralism and decoloniality, and proposes strategies for genuine intercultural dialogue to transition towards a holistic sustainability of all life and life forms on earth (Escobar, 2011, 2012; Escobar and Frye, 2020; Escobar, Osterweil and Sharma, 2024). The transformative potential of relational ontologies is highlighted throughout his theoretical and practical propositions for creating the pluriverse, collective existence and creation, and challenging modern anthropocentrism. Combined with decolonial and postcolonial theory and practice, the concept of the pluriverse deeply informs the theoretical approach of this research inquiry, and the subsequent methodology and data generation methods utilised for the study. The following sections discuss and detail each of the three theoretical spaces of ecopedagogy, deep ecology, and Islamic environmentalism (IE) that reflect this decolonial and pluriversal approach, and the intersections of these spaces that create the intertwined theoretical framework used for the research inquiry.

3.2 Ecopedagogy

Ecopedagogy is a rich theoretical space that combines ecological education, critical thinking, and philosophy. The term is most commonly associated with Maocir Gadotti

(Gadotti, 1996), who built on Freire's work (Freire, 1978, 1985) to develop the field through the theory and praxis of critical pedagogy. Gadotti first advanced the concept during the Rio Earth Summit of 1992. The ecopedagogy movement then evolved from scholarly discussions during the Summit, and intellectuals from the movement started supporting grassroots sustainability organisations and worldwide initiatives like the Earth Charter (1992) (Kahn, 2010; Korsant, 2024). These developments also led to the formation of the Ecopedagogy Charter that advocates for socio-environmental justice and education through planetary consciousness (Spring, 2004).

Consequently, as an emerging movement, ecopedagogy evolves from the theory and praxis of Freire's critical pedagogy in response to the environmental crisis. For Freire, freedom and liberation were central concerns for education (Freire, 1978), where teaching is not simply an exercise of "banking" where learners are receptacles of information, but where they critically engage with teaching and learning as co-creators of knowledge. Freire advocated for a democratic form of pedagogy that unsettled the hierarchical dynamic between teacher and student, government and people, the coloniser and the colonised (Korsant, 2024). The ideals of popular education (as it was/is widely known in South America) and critical pedagogy were then extended and developed into the philosophy and movement of ecopedagogy, advocating for socio-environmental justice and liberation.

Ecopedagogy is perceived as an antidote to the wider practice of Environmental Education (EE), which has been criticised as a reductive discipline concerned only with educating *about* the environment (Hung, 2021). EE is considered to evolve from an anthropocentric conception of the world as opposed to promoting an ecological worldview, and is critiqued for failing to account for social, political, and economic factors leading to the environmental crisis (Kahn, 2010; Handl, 2012). Further, frameworks such as EE, Education for Sustainable Development (ESD) and many of their subfields have originated from historically colonising nations, or the global majority, representing primarily North America, Europe, and Australia. The ecopedagogy movement, in contrast, has its roots in Latin America and has inspired directed attention towards and political action for socio-cultural, political, and economic injustices that have contributed to the environmental crisis, key points of concern often missing from the previous frameworks. The ecopedagogy movement, therefore, forms a crucial opposition within the global environmental movement against capitalism and neo-colonialism that refuses to accept

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business as usual within the wider practice of education for sustainability (EfS). It is important to note, however, that ecopedagogy is not a fixed theoretical space or methodological approach to be applied uniformly to pedagogical contexts concerned with the environment. Rather, it is an evolving movement which develops with the addition of new individuals and groups and as it responds to rapidly changing social, economic, and political factors (Kahn, 2010).

The theory and praxis of ecopedagogy uses an interdisciplinary lens, which includes the humanities and the social sciences, and foregrounds human-nature relationality within a comprehensive framework that aims to understand wider socio-environmental issues. The inherent ecological worldview emphasises the interconnectedness of living beings and the wider natural environment, promoting a holistic approach to education that does not separate the social from the environmental. With this view, it encourages a critical appraisal of social and environmental (in)justice, including an exploration of the metaphysical aspects of the human-nature relationship (Kahn, 2010). It emphasises problem-based learning that addresses root causes as opposed to focusing on short-term solutions designed to band-aid symptoms and ignoring foundational issues that have led to the environmental crisis (Hung, 2021). The framework lends itself to the aims of this research inquiry which intends to explore the use of indigenous and traditional environmental literacies (ITELs) for contemporary education for sustainability *and* regeneration, using critical reflections on and discussions around human-nature relationality to appreciate some of the deeper material and spiritual aspects of these relationships.

Some scholars have attempted to categorise ecopedagogy into two broad movements: philosophical ecopedagogy and critical ecopedagogy. The philosophical movement addresses the ontological, epistemological, ethical, spiritual, and religious aspects of the human-nature relationship while the critical movement is concerned with economic, social, cultural, and political spheres for socio-environmental justice and liberation (Hung, 2021). This study, however, does not make these distinctions and is concerned with both discourses as they relate to the contemporary practice of teaching and learning of environmental literacies. Critically questioning and decolonising Euro-Western ontological and epistemological universality, specifically as it relates to human-nature relationality, is one of the key concerns of this research inquiry. This endeavour cannot be separated from

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a critical appraisal of the economic, political, and socio-cultural factors that shape and contribute to an understanding or distortion of these relationalities. The philosophical and critical, therefore, are embedded within this inquiry and contribute to the theory and praxis of a decolonial, pluriversal, ITEL focused education for sustainability and regeneration.

Ecopedagogy as a discourse and movement also advocates for a transformative pedagogy, one where pedagogy does not exist as a premediated way of teaching and learning but where it is explored and co-created through participatory and emancipatory practice (Kahn, 2010). This approach aligns with the post-qualitative nature of this inquiry where a range of methods and prompts is used to explore and co-create learning with participants. Kahn's (2010) understanding of ecopedagogy as a development of critical pedagogy in Latin America also compels him to call for a "critical ecopedagogy" (p.152), which seeks to understand how political and ideological structures produce the domination of the natural world. A critical ecopedagogy, therefore, allows us to first recognise and then attempt to transcend these structures on an individual and community level. Education through an ecopedagogical lens transforms from a capitalist oriented model prizing grades, employability, and economic progress (Giroux, 2024) to a holistic model that foregrounds socio-environmental justice, human-nature relationality, and well-being placing the former within the context of the latter, thereby unsettling purely economic and mechanical modes of education (Kahn, 2010). Ecopedagogy, therefore, is a theory of teaching and learning that foregrounds the recognition of and resistance towards anthropocentric thinking and being, neo-liberal capitalism, and their collective consequences for socio-environmental sustainability.

As an evolving field, ecopedagogy has been used by a range of practitioners and educators for various forms of environmental education (EE), education for sustainability (EfS), place-based education, and outdoor education. *Ecopedagogies* (Bayer and Finley, 2022), for example, showcases a variety of creative approaches that educators across multiple disciplines have utilised for experiential learning within adult education contexts, aimed at helping students access and engage with the natural world. A selection of papers from the book, with similarities to this study, are discussed below.

In one of these papers, Harrison (2022) writes about a five-year pedagogical experiment involving field journaling where students respond to prompts for meditation,

contemplation, and sensory awareness, and critically interrogate cultural and political influences shaping our interpretation of the world. The ecopedagogical framework is used to lend a critical lens to students' current perceptions of the world around them and aid re-interpretation through a consideration of factors that often go unnoticed. In another paper, Gardner (2022) responds to Orr's (2002) call for spiritual renewal and uses the framework to emphasise what the author terms as the "paradox of ecopedagogy" (p. 194). The paper discusses both the tensions and deep intersections between modern scientific and sacred understandings of the world, which for the author are both integrated within the ecopedagogical framework. The author highlights the need to embrace the apparent paradox arguing for the recognition of socio-environmental crises not only as material crises, but also as personal and emotional experiences that cannot be addressed through exclusively intellectual and cognitive teaching and learning.

Elsewhere, Jackson (2022, p.143) uses ecopedagogy to develop a praxis tool that builds on "Indigenous and Traditional Ecological Knowledge and new materialism" for outdoor education, providing a model that can be used across disciplines. The tool prompts students to reflect on the "entangled subjectivity" of humans and the natural world with the intention of reconfiguring these relationships in the Anthropocene (p. 143). Using a posthumanist lens and critical theory, Barad's (2007) concepts of agential realism and agency are utilised to transcend the mind-body dualisms of Euro-Western thought and philosophy and facilitate awareness of multispecies encounters. In alignment with some of the aims of this research inquiry, Jackson (2022) uses the praxis tool to prompt embodied awareness and storytelling for greater appreciation of the embedded and reciprocal relationships between humans and the natural world. Within another paper, Maier (2022, p. 83) uses John Muir's *Travels in Alaska* for his literature and environment class, taking students on wild trails from the book to explore "strategies for unsettling settler innocence", "cautiously" decolonising perceptions of the Alaskan landscape. This is facilitated through enabling student reflections on indigenous place names and their colonial era counterparts. The paper highlights the effectiveness of, and need for, reflective exercises for developing greater awareness of human relationality with the wider natural world.

The research practices utilised within these papers enable students to develop a range of environmental literacies within the backdrop of an ecopedagogical framework. The above

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authors' utilisation of ecopedagogical theory coincides with the use of various theoretical spaces including decolonial theory, critical theory, posthumanism, and new materialisms, including an encouragement for students to engage with Traditional Ecological Knowledge (TEK). These studies may have used a variety of lenses and methods for different aims, but they evidence similarities to some of the goals of this research inquiry, including a focus on the development of non-dualistic perceptions and understandings of human-nature relationality and facilitating decolonial perceptions of the wider natural environment. At the same time, as evidenced within the literature review for this inquiry, it is rare to find examples of studies where TEK or ITELs have been foregrounded to explore human-nature relationality to respond to contemporary sustainability issues, specifically within mainstream avenues of formal and non-formal education. Ecopedagogy of course has vast possibilities of application for education and ecological, environmental, and sustainability research, however, these papers were specifically chosen for discussion to demonstrate some of the similarities they share with this research inquiry.

When designing the research questions for this study, using a decolonial and pluriversal approach, I felt the need to develop a robust theoretical framework that would be: emancipatory, radical, critical; cognisant of social, economic, and political aspects of the environmental crisis; possessed a deep appreciation of the material and spiritual aspects of human-nature relationality; and enabled the development of these relationships in the contemporary context of education for sustainability and regeneration. This is a tall order and very unlikely to be fulfilled with a single theoretical paradigm. The ecopedagogical framework, therefore, provides me with a wide, open canvas to design decolonial and pluriversal research encounters, allowing for and encouraging deep dialogue with the two other theoretical spaces that contribute to the intertwined theoretical framework for this inquiry.

As evidenced within the papers above, ecopedagogy has been successfully utilised to explore holistic aspects of human-nature relationality within mainstream adult education courses. However, the literature around ecopedagogy does not evidence studies that specifically explore the use of ITELs or facilitate deep engagement with these literacies for contemporary EfS within mainstream avenues of education, either in formal adult education spaces such as HEIs or non-formal educational spaces such as community organisations. As established within the literature review for this inquiry, a non-formal

ITEL focused EfS has not, to my knowledge, been introduced into mainstream avenues of formal and non-formal education and research. Apart from isolated examples, the practice of mainstream EfS reflects a lack of deep engagement with ITELs. This study moves the conversation forward and extends the field of education for sustainability and regeneration by introducing and exploring ITELs as a response to the environmental crisis, within both formal and non-formal spaces of mainstream education.

Kahn (2010) uses the term TEK (Traditional Ecological Knowledge) to refer to indigenous environmental literacies, with the caution that not all indigenous peoples and cultures have practiced environmentally sustainable behaviours at all times. However, he stresses that having established this, from an ecopedagogical perspective he strongly argues for TEK to be adopted as a primary element of environmental studies across higher education (HE), due to both its similarities with what he terms Western Modern Science (WMS) and even more importantly departures from WMS' reductionist and dualistic tendencies. Within HE, Kahn (2010) posits that TEK (or ITELs), as shown in the literature review for this study, are usually relegated to indigenous studies programs and absent from mainstream environmental studies discourse which conforms to WMS in both theory and practice, failing to meet the needs of a multicultural and socially just approach to EfS. Ecopedagogy, therefore, creates the crucial space needed to revive and promote ITELs through "transformative research" highlighting the people and onto-epistemologies that have been excluded from mainstream sustainability scholarship and the "normative" frameworks of Euro-Western education (Kahn, 2010, p. 107).

"This does not mean the simple assimilation of indigenous knowledge practices into dominant materialistic, reductionist, and positivistic paradigm of modern Newtonian/Cartesian thinking proper" (Kahn, 2010, p. 108).

Instead, the inclusion of indigenous knowledges is envisioned to be part of a greater "institutional paradigm shift" that critically questions the assumptions, values, and methods of WMS, reconstructing it towards a "radical ecology of freedom" (ibid.). Within this context, ecopedagogy offers a strong decolonial and pluriversally oriented lens for the design and analysis of this research inquiry to draw critical insights from an ITEL focused education for sustainability and regeneration, within both HE and community organisations. Further, the ecopedagogical lens provides the canvas and sets up space for

the creation of the intertwined theoretical framework for this inquiry that brings together ecopedagogy, deep ecology, and Islamic environmentalism (IE) as one of the key contributions of this study.

3.3 Deep Ecology

Deep ecology is the second theoretical space to contribute to the intertwined theoretical framework for this research inquiry. The term “deep ecology” was introduced by Norwegian philosopher Arne Naess in 1972 to create a distinction from what he termed the practice of “shallow ecology”, understood to be a description of the mainstream environmental movement at the time. Naess who was born in Oslo, Norway, is well known for his work as a philosopher, environmentalist, and activist, in addition to being an avid mountaineer. His expedition to Tirich Mir, the highest mountain in the Hindu Kush range (33rd highest in the world), in North-Western Pakistan in 1950 was a fairly recent discovery for me, creating another link to the human whose writings have impacted this academic work, providing much needed holistic perspectives on human-nature relationality within contemporary “Western” philosophy.

Naess’ reputation as a philosopher stems from his work in semantics but his work and publications span a diversity of areas including scepticism, Spinozian ethics, and Gandhian ethics of non-violence (Naess, 2008; Philosophy, 2019). Few of his works, however, have been translated into English. Naess was also deeply impacted by Rachel Carson’s book *Silent Spring*, which was published in 1962, and is considered to be one of the most influential books of the modern environmental movement. He was inspired by Carson’s call for environmental awareness and action which reinforced his belief in the interconnectedness of living beings, leading him to further develop his ideas around deep ecology, which emphasises the intrinsic value of the natural world beyond its utility for the sustenance of human life. Carson’s work also drove him to greater environmental activism allowing him to integrate his philosophical insights into activist work. The most notable of these is when, with a large number of demonstrators in 1970, he chained himself to rocks in front of *Mardalsfossen*, a waterfall near a Norwegian fjord, refusing to descend until plans to build a dam there were abandoned (Schwarz, 2009). The protest was a success. The entirety of Naess’ philosophical corpus spans volumes of work and is outside the scope of this thesis. Therefore, the sections that follow detail aspects of and concepts from

his philosophical work as they relate specifically to deep ecology, and as it is applicable to the aims of this research inquiry.

3.3.1 Ecosophy-T

Naess' concept of deep ecology was developed and elaborated on in "Tvergastein", an isolated wooden hut he had built high on the slopes of Mount Hallingskarvet in Norway. It was here that he would spend a couple of months each year developing his philosophy and work, especially the concept of an Ecosophy-T, the T standing for Tvergastein, his mountain hut. Ecosophy-T, therefore, was Naess' personal ecological philosophy with which he viewed the world, and which forms the foundations of deep ecology. It is comprised of some key elements including self-realisation, the intrinsic value of nature, the unity and diversity of life, and norms and hypotheses (Naess, 1989).

3.3.1.1 Self-realisation

Self-realisation emphasises the deep connections between humans and the natural world, encouraging us to perceive ourselves as part of a larger ecological system, which is in direct opposition to the concept of anthropocentrism. Naess interpreted the "self" in self-realisation in three ways: the ego, the self, and the Self with a capital S. The "ego" denotes the narrow selfish self, the primary concern of which is to satisfy bodily, biological, physical and/or material needs (Naess, 2008). Naess' concept of the ego, like in many indigenous, faith and/or cultural traditions, prioritises the fulfilment of desires regardless of the wellbeing of other living beings or entities. Naess' interpretation of the "self" goes beyond the self-gratifying desires and cravings of the narrow ego and is aware, empathetic, and caring of the needs of immediate family and closest friends. The welfare of those around and in close proximity to this self, whether physically or emotionally, is considered to be equally important as that of itself.

The third interpretation of the "Self" is the all-encompassing self that exists beyond the confines of the immediate environment that a person depends on. This Self identifies with and is invested in the wellbeing of life and life forms within the wider natural environment. Naess describes the identity of this Self in relational terms, it is an identity that cannot exist on its own as an isolated "I" or an isolated social unit (Naess, 1989) because its identity is

developed in interaction with the wider environment that it is a part of. For Naess, these three perceptions of the self are not simply categories. They are stages of development that lead to ultimate self-realisation, which is the identification with all living beings and life forms on earth, such that humans delightfully realise that their existence is a continuous participation in something greater than their individual and social aspirations. Ecosophy-T then seeks to develop this sense of interconnectedness and joy at participating in the unfolding of life within the wider ecosphere. Naess (2008) argues that because greater self-realisation leads to increased identification with the wider natural world, environmental consciousness, justice, and care cease to be ideals that individuals need to “sacrifice” for. Instead, through an increased sensitivity to the richness and diversity of nature, the requisite environmental care flows naturally when the Self is widened and deepened and identifies with the greater community of beings on earth. This is reflective of the premise that this thesis is based on, that is, we cannot possibly work towards sustainable and regenerative futures without developing deep, ethical, relationships with the wider natural world.

3.3.1.2 Intrinsic value of nature

Naess’ Ecosophy-T also emphasises that all living beings and forms have the right to live, which demonstrates that they all have an equal claim to contribute to the design of the environment, each within its own unique capacity. This leads to recognition of the inherent worth of all living beings and life forms, independent of their utility to human life and survival. The richness and diversity of these life forms further contribute to the realisation of their inherent value, and Naess holds the view that humans have no right to take away from this richness and diversity except to satisfy vital needs. A hunter for example would only kill to fulfil the needs of themselves and/or their family realising that they are part of the larger interconnected web of life with the hunter’s eventual death contributing to the flora and fauna of the earth that the hunted animal depends on. Within Ecosophy-T, the inherent value of nature ties in with self-realisation, where an individual experiences oneness with all life forms precisely because they all possess unique intrinsic worth that contributes to the same environment that the individual themselves is contributing to.

3.3.1.3 The unity and diversity of life

The element of unity and diversity within Ecosophy-T denotes an appreciation of the diversity of life and life forms on earth and includes both ecological and cultural diversity. Biological diversity contributes to the resilience and richness of the natural world, where the wellbeing of each part of an ecosystem contributes to the health and wellbeing of the whole. The parts then are interconnected forming a unified whole that represents both the diversity and unity of life (Naess, 2008). Naess argues that cultural diversity, similarly, offers unique insights and practices that can inform and contribute to the ecological harmony of the whole community of living beings and life forms on earth (Drengson, 2005). Both unity and diversity of people exist within the deep ecology movement and is further detailed later in this chapter. I present a consideration here, however, that Naess puts forward in a chapter titled *Pluralism in Cultural Anthropology* (Naess, 2008) which further illustrates his idea of unity and diversity. He proposes two cultures A and B and posits that a person from culture A can only describe culture B through the cognitive framework of their own culture. When a person within culture B thinks they identify with a particular animal, for a person from culture A the very terms of *person*, *identical*, and *animal* will have the connotations these words possess in culture A.

Consequently, we cannot possibly experience the world of B through the words and connotations of A. An anthropologist would then try to find how people in culture B understand and experience what we call animals, identities, and so on. Naess (2008, p. 184) illustrates this through an example by posing a question,

“How can Sherpas seem to say (in their language) that the mountain Tseringma *is* a mountain *and* a princess? How can we translate, *if at all*, their verbal utterances in such a way that we approximate *their* experience of Tseringma?” (emphasis in original text).

Naess goes on to say that if we allow for the possibility of culture B’s concepts of a mountain and person to be different than ours, any attempts to translate their language and experience will result in a plurality of versions. This results in an understanding that their identification with the mountain is differently conceived than ours, allowing for diverse and plural experiences of the same mountain, reflecting both unity and diversity.

3.3.1.4 Norms and hypotheses

Norms and hypotheses are central for Naess' conception and development of his Ecosophy-T, where hypotheses are descriptive statements about the world and norms are prescriptive statements deriving from these hypotheses. Both ultimate value norms and hypotheses work together to promote a holistic and ethical approach to environmental consciousness and care, encouraging reflective thinking and practical action. Drengson (2005) notes that the conception of these ultimate value norms and hypotheses was Naess' way of systemising his personal ecosophy. Norms (N) and hypotheses (H) can derive from each other so for instance, if an ultimate value norm (N1) is that of "self-realisation!", some of the hypotheses derived from this norm could be:

"H1: The higher the Self-realization attained by anyone, the broader and deeper the identification with others.

H2: The higher the level of Self-realization attained by anyone, the more its further increase depends upon the Self-realization of others.

H3: Complete Self-realization of anyone depends on that of all. (Naess, 2008, p. 34)"

These hypotheses would lead to the derivation of another ultimate value norm, which could be the norm of "self-realisation for all living beings! (N2)" (Naess, 2008, p. 34). The exclamation marks emphasise that a statement is a value norm and that the person deriving this norm ought to do something, highlighting that an ecosophy or ecosophies are not simply theories but are ways of life actively engaged with. Within Ecosophy-T, norms and hypotheses can develop and provide a framework for a deeper understanding of the natural world and our interactions with it. Naess' Ecosophy-T is foregrounded within the theoretical space of deep ecology and is a model that individuals can use to develop their own personal ecosophies to transform our relationality with the natural world through fostering deeper, meaningful relationships with it and informing critical action to respond to sustainability challenges.

3.3.2 Deep ecology platform principles

As detailed through some of its elements above, Naess' conception of Ecosophy-T is foregrounded within the philosophy and movement of deep ecology. An ecosophy, according to Naess, is a personal philosophy of life and a worldview that derives from what Naess calls an ultimate philosophy. The deep ecology movement is supported by people with diverse ultimate philosophies and religions to seek global solutions to the environmental crisis. Individuals who align themselves with the movement have their ecosophies rooted in a diversity of traditions including Buddhism, Confucianism, Shinto, Islam, Neo-Paganism and Shamanism. In the absence of a religious or tribal background, individuals may create their own ultimate philosophy derived from ecocentric principles and values, and call this personal philosophy, Ecosophy-X. The X may be replaced by a descriptive name or a name that signifies the place where their ecosophy was developed, learned, and practiced, giving it personal value and significance. Naess' writings indicate that his own personal Ecosophy-T was derived from a number of ultimate philosophies.

“Personally, I favour the kind of premises represented in Chinese, Indian, Islamic and Hebrew philosophy, as well as Western philosophy – namely, those having as a slogan the so-called ultimate unity of all life. They do not hide the fact that big fish eat small ones, but stress the profound interdependence, the functional unity, of such a biospheric magnitude that non-violence, mutual respect, and feelings of identification are always potentially there, even between the predator and its so-called victim. In many cultures, identification is not merely limited to other living things but also to the mineral world, which helps us conceive of ourselves as genuine surface fragments of our planet, fragments capable of somehow experiencing the existence of all other fragments: a microcosm of the macrocosm (Naess, 2008, p. 131)”.

The deep ecology movement, therefore, is supported by individuals and communities with diverse worldviews that allow for plurality and give the movement transcultural character. Echoing Feyerabend's (1993) sentiments (see also Chapter 4: *Research Inquiry: design and methods*), whose work Naess engaged with through his writing (Naess, 2005), Naess notes that,

“Pluralism is inescapable and nothing to lament. Reality is one, but if accounts of it are identical, this only reveals cultural poverty. Excessive belief in “science” favours acceptance of poverty as a sign of truth” (Naess, 2008, p. 182).

Consequently, Naess cautions against looking for a definite philosophy among supporters of the movement, explaining that the deep ecology platform allows for “closely similar or even identical conclusions” to be drawn from divergent or incompatible premises (Naess, 2008, p. 106). He explains this through what he calls an apron diagram where the ultimate worldview or philosophy of an individual combined with deep ecology platform principles, informs the norms and hypotheses that an individual makes, which in turn lead to particular rules, decisions, and actions in the context of the environmental crisis.

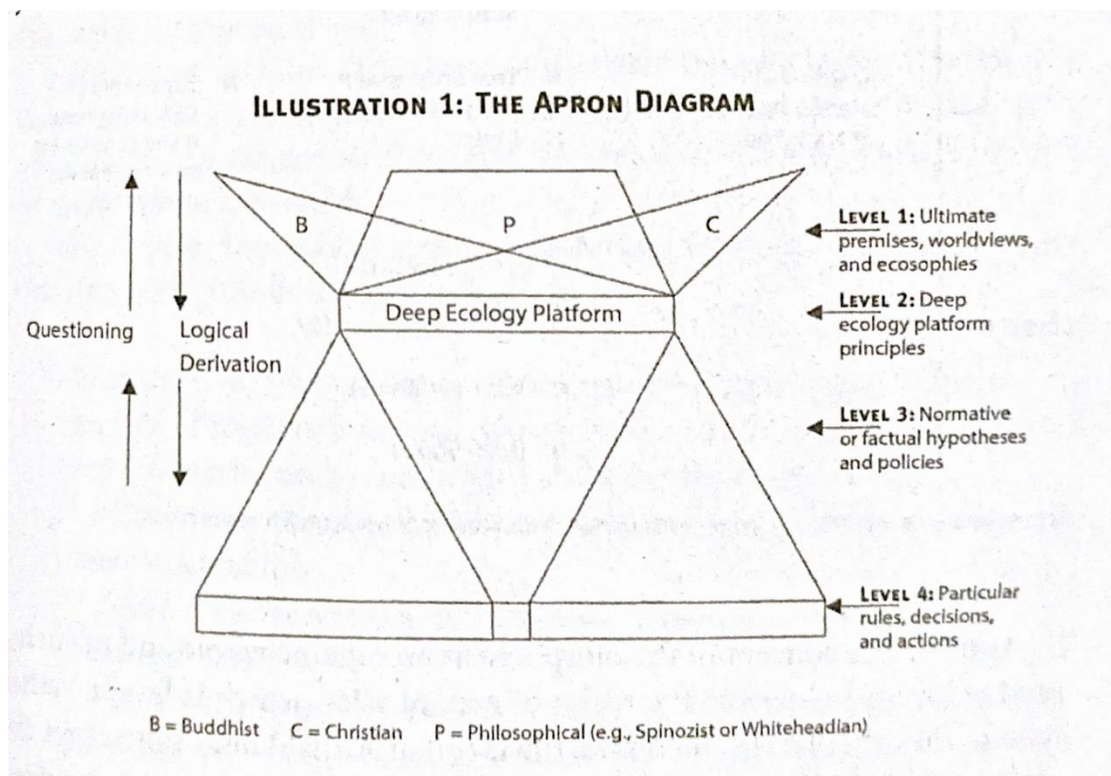


Figure 2 The Apron diagram illustrating the plurality of the deep ecology movement (Naess, 2008).

In the diagram above (Figure 2), deep questioning leads towards ultimate principles and philosophies that an individual brings to the deep ecology movement, while logical derivation as it stems from these first premises or an Ecosophy-T, leads towards the formulation of decisions and actions in specific contexts. Consequently, even when there exists diversity and plurality at level 1, the deep ecology platform serves to create unity at

level 2. Advocating for and appreciating cultural diversity, evocative of Said's work (1994), Naess (2008, p. 117) highlights, "No deep cultural differences can exist without diversity at level 1! There is unity in diversity: unity at level 2 and diversity at level 1." A diverse set of individuals then with an equally diverse set of ecosophies can unite through their engagement with deep ecology principles and arrive at similar norms and hypotheses for collective action within a specific context (Drengson, Devall and Schroll, 2011). The diagram, however, represents a static model and new information or ethical concerns may change the hypotheses, including the norms that may have been justified based on these hypotheses. Naess further demonstrates the practical application of the apron diagram through detailing the process of arriving at a concrete action, by a supporter of the deep ecology movement, as depicted within Figure 3 below. He names this supporter, a hypothetical person, "NN". NN lives near the forests of northwestern United States, is considered to have fundamental beliefs of a "Spinozistic kind, but has no knowledge of Spinoza" (Naess, 2008, p. 107), and wants to use tree spiking to deter tree logging within his area.

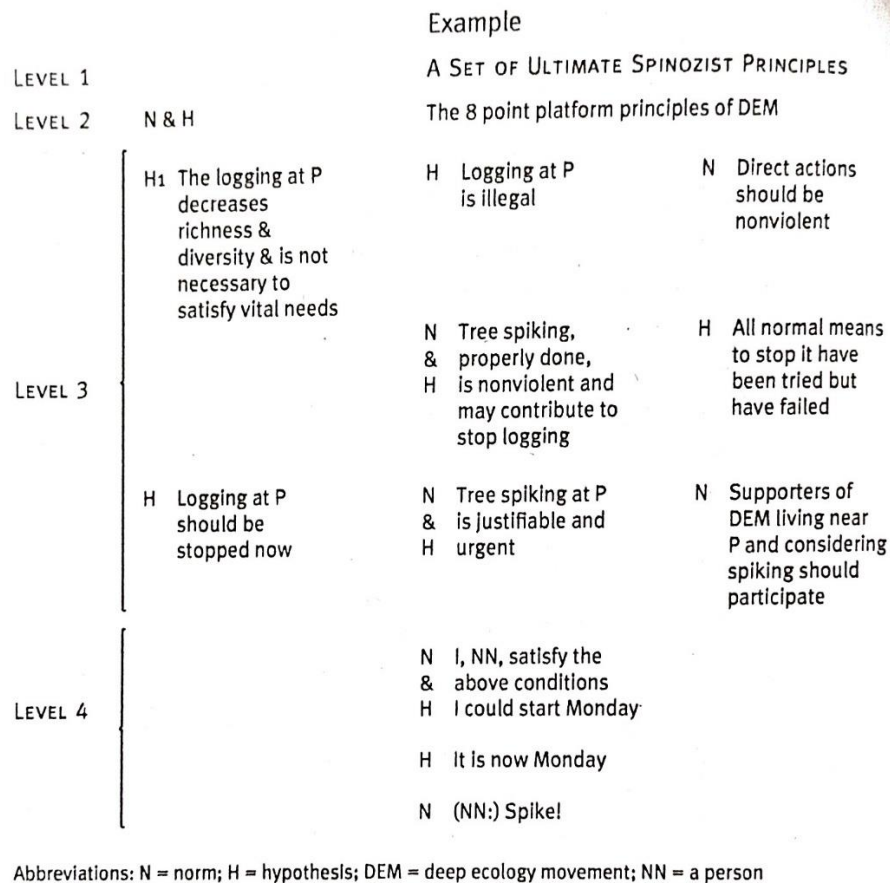


Figure 3 Deriving concrete actions through ultimate principles/philosophies and the principles of the deep ecology movement (Naess, 2008).

The figure depicts NN's decision making process that illustrates the workings of the static apron diagram in practice. According to Naess, the norms and hypotheses may change with new information or a change of circumstances, resulting in the derivation and justification of different actions to respond to sustainability issues. A group of individuals with a diverse set of ultimate principles, however, can unite for collective action using the deep ecology platform principles. The first iteration of these principles was formulated by Arne Naess and George Sessions in 1984 (Drengson, Devall and Schroll, 2011). This was later expanded by Devall and Sessions in 1985 as follows:

1. The well-being and flourishing of human and nonhuman Life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.

2. Richness and diversity of life forms contribute to the realisation of these values and are also values in themselves.
3. Humans have no right to reduce this richness and diversity except to satisfy vital needs.
4. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.
5. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.
6. Policies must therefore be changed. These policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.
7. The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent value) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.
8. Those who subscribe to the foregoing points have an obligation directly or indirectly to try to implement the necessary changes (Devall and Sessions, 1985, p. 70).

These principles form the basis of the deep ecology movement and distinguish it from what Naess termed “shallow ecology”. Shallow ecology to Naess was what categorised the mainstream environmental movement at the time; the idea that all that was needed was minor reforms within existing industrial systems to reduce issues of pollution and resource depletion. The shallow ecology movements did not (and do not) recognise the critical need for foundational changes within commonly held values and practices that were/are contributing to the environmental crisis (Drengson, 2005; Naess, 2008). Naess, therefore, proposes the integration of deep ecology values with personal values and norms (or ultimate personal philosophies/premises) to consciously rearticulate our worldviews,

creating our own personal ecosophies to respond effectively to the environmental crisis. Naess was understandably a strong critique of capitalism and “wild consumerism” that he believed threatened the wellbeing of our planet and communities of human and non-human life creating “asocial attitudes” (Naess, 2008, p. 286). His work on deep ecology stands in stark contrast to shallow ecology movements such as green consumerism, greenwashing, “sustainable development”, and green tokenism with an ethics of business as usual that create deceptive visions of future sustainability, while exacerbating the environmental crisis. The theoretical space of deep ecology, therefore, enables the creation of deeply philosophical but equally practical considerations and actions that individuals and communities can engage with to inform diverse, culturally situated, ecological actions in response to the environmental crisis, and more specifically within the research workshops designed for this inquiry.

Through its intertwining with ecopedagogy, deep ecology strengthens the theoretical lens of this research inquiry through deepening critical, radical, environmentally focused thinking and providing a robust framework to translate it into action. As detailed earlier within this chapter, ecopedagogy provides the wide decolonial and pluriversal theoretical canvas for the practice of teaching and learning of environmental literacies within this inquiry. Deep ecology colours this canvas and provides the framework to bring the diversity of indigenous and traditional environmental literacies (ITELs) to life, for exploration and engagement with a diverse set of participants through the research workshops designed for this inquiry. Consequently, deep ecology enables and informs the design of this study to allow for: deep reflections on human-nature relationality through exploring ITELs and the plurality within; challenge and push arbitrary disciplinary boundaries; engage with each other’s cultures and “tribes”; and problem solve together with/in community to generate insightful data, specifically as it relates to reflecting on and developing personal ecosophies within the contemporary context of the environmental crisis.

I conclude this section on deep ecology by sharing an invitation by Naess that he extended to his audience during one of his lectures in Oslo. Close to the end of the lecture, he leaves the podium, approaches a potted plant to his left, takes off a leaf, and brings it back to the microphone. He holds the leaf up so his audience can see it and gazing at them sincerely

comments, “You can spend a lifetime contemplating this. It is enough. Thank you” (Naess and Rothenberg, 1989, p. 1).

3.4 Islamic Environmentalism

Naess’ invitation of deep reflection and contemplation above forms some of the core practice of the third theoretical space that contributes to the lens of this research inquiry: Islamic environmentalism (IE). IE intertwines with the theoretical spaces of deep ecology and ecopedagogy to inform the decolonial and pluriversal lens of this study, its methodology, and data generation methods. IE derives from the deep and rich wisdom tradition of the orthodox Islamic faith as it has spanned the last 1400 years. Nature within the Islamic tradition is not considered a separate entity – the existence of human and non-human life is intertwined with that of all creation on earth and the cosmos beyond. “Environmentalism” is intrinsic to the philosophy and teachings of the faith, as opposed to being a separate discipline (Gade, 2019), much like the rest of indigenous and traditional environmental literacies (ITELs) explored within the research workshops designed for this inquiry. I, therefore, use the term Islamic environmentalism to denote environmental philosophies and literacies as they are derived from the interdisciplinary teachings of the faith.

It is important to highlight that the Islamic tradition consists of centuries of scholarship and possesses an incredible breadth and depth of knowledge and knowledge generating tools related to all aspects of human life and being, spanning a diversity of subjects for intellectual exploration and practical application. This includes the interpretation of texts and scholarship around human relationalities with the wider natural, created world (Nasr, 1996; Gade, 2019). The purpose of this section, consequently, is to briefly introduce the basic philosophies and practices of the faith tradition and draw out aspects of these as they relate to the context of this research inquiry and contribute to the development of the intertwined theoretical framework for the study. Therefore, instead of a deep dive, I will attempt to highlight key terms and concepts related to the context of this inquiry and the intersections between ecopedagogy, deep ecology, and IE that bridge this ancient wisdom tradition with modern educational and environmental theory.

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The environment as it constitutes the earth, humans, and non-human life and life forms on earth and the cosmos beyond, is a core concern within Islamic philosophy and teaching. This is evident through the fundamental practices of the faith including the five daily prayers that take place in accordance with the arc of the sun in the sky, with clock timings for prayers varying across world regions throughout the year as the earth orbits and goes through the solstices and equinoxes. Similarly, the annual fasting month of Ramadan, as with other months within the Islamic Hijri calendar commences with the sighting of the new moon, a communal activity within the tradition. The wider natural world itself is considered to be a curriculum, with nature and the rhythms within considered to be the pedagogy that is to be contemplated, reflected on, and engaged with (Nasr, 1987a). The great outdoors are perceived to be the experiential teaching ground for humanity, from the first story of Cain and Abel where Cain learns remorse from a crow to contemporary learning in the wilderness that enables us to draw insights into our experience of life on earth. Nature as we perceive it is considered to be alive and animate, in consistent prayer, *dhikr* (remembrance), and glorification of its Creator. Hence the consistent encouragement within the Islamic tradition to reflect on and contemplate *within* nature, as a way of engaging in collective *dhikr* (remembrance) *with* the natural world, to bring us back to ourselves, our breath and our bodies, and connect us to the Divine Essence present within all of creation (Nasr, 1987a, 1997; Nasr *et al.*, 2015; Gade, 2019).

The *Quran* urges reflection on the rhythms of the natural world, the alternating cycles of day and night, the movements of the stars, the sun, and the moon highlighting that, “...*in it (the natural world) are signs for people who reflect*” (*Quran*, 2025, *Surah Ra'ad/The Thunder: Ayah 03*). The cyclical rhythms of the natural world are also reflected in the cyclical narration or chiasmic, concentric constructions in the *Quranic* text which is non-linear (Farrin, 2014). Stories often circle back and resurface in different chapters, exactly like we would narrate stories from our lives, weaving them into one another, building layers of meaning and understanding. These aspects of reflection, contemplation, and storytelling inform some of the data generation methods used to facilitate participants’ engagement with ITELs within the research inquiry.

The philosophy and practice of the Islamic faith is derived from two key texts: the text of the *Quran* considered to be the word of Allah, and the *Sunnah* which is the oral tradition of

Islam foregrounding the life of the Prophet Muhammad ﷺ² with chains of narration that can be traced directly back to him. Both are primarily oral texts: Muslims believe that the *Quran* was revealed to the Prophet ﷺ orally over a period of 23 years through the angel Jibreel (Gabriel) and learned by heart by the early Muslims till it was preserved in writing. The word *Quran* itself means “recitation” – the Islamic faith has a rich tradition of the sciences of *Quran* recitation based on varying tonal frequencies which are also used as healing practices. The *Quran* constitutes the primary text of Islam retaining the same words since the inception of the faith, uniting people across cultures, communities, and geographies with scholarly consensus on interpretations related to major themes, practices, and prohibitions (Nasr, 1987b). Differences in interpretation for issues and concerns outside of these are accepted and encouraged as part of ongoing debate, dialogue, and faith-based practice to represent the diversity of peoples, tribes, and communities that have practiced the faith across geographies and time.

Both unity and diversity, therefore, are reflected within Islamic philosophy and practice within orthodox Islam, and within smaller sects of the faith deriving their practice from the same text of the *Quran*. This concept of unity and diversity (see also previous section on *Deep Ecology*) informs the data generation methods and is also reflected within the findings of this inquiry. The secondary texts of the *Sunnah*, the oral tradition of Islam which has been materialised in writing, consists of a large body and numerous volumes of work by a number of scholars past and present as they relate to the teachings, life, and practice of the Prophet Muhammad ﷺ (Lings, 2006), with two of them considered to have the most strongest and authentic chains of narration, namely *Sahih Muslim* and *Sahih Bukhari*. IE as it is conceptualised for present day practice and as a response to the environmental crisis is derived from these core texts of the *Quran* and the *Sunnah* (Nasr, 1996; Quadir, 2013; Gade, 2019).

Before discussing IE terms and concepts in the context of this research inquiry, I detail some important considerations to introduce the reader to the basic philosophies and practice of the faith. Individuals who adhere to the basic tenets of the Islamic faith are known as *Muslims*, which in Arabic translates to someone who is in submission to Divine command and will, as opposed to their ego or *nafs*, similarly termed by Naess in the

² Arabic calligraphy conventionally used after the prophet’s name which translates to “peace be upon him”, representing Muslims’ love, respect, and connection to him.

previous section, and as evidenced across many spiritual traditions. Muslims believe in the oneness of the Creator, Who is referred to by at least a 100 names including the most widely used ones, *Ar-Rahman* (the most compassionate) and *Ar-Raheem* (the most merciful), but primarily known as Allah (Al-Ghazzali, 1992), similar to Elohim or Eloha in Judaism. The *Quran* uses the Arabic masculine pronoun *huwa* to refer to Allah, because the word Allah is *grammatically* masculine, however, Muslims do not believe in a gendered, male or female Creator. Allah is divinely transcendent and beyond human thought and comprehension which we have been created with (Nasr *et al.*, 2015). Throughout this section and within the chapters of analysis, therefore, I will be using the terms the Creator, the Source, and the Divine to refer to Allah, instead of the conventionally translated English “He”.

Similarly, when a translation is provided from a *Quranic ayah* (verse) within a *surah* (chapter of the *Quran*), the closest words to reflect the context are used. Where “We” is used in the English translation, it is a linguistic convention to denote the sovereignty and greatness of Allah, not plurality. Muslims, unequivocally, believe in *One Creator*, from Whom emanates the *plurality of creation*: diverse species, humans, life forms, and so on. This is a core belief that serves to unite the diversity of creation through its origination from the same Creator.

Muslims also believe in angels, the day of judgement, and the books and prophets sent to humankind, including *Isa* (Jesus) and *Musa* (Moses) (may peace be upon them), as gifts of mercy and guidance from Allah. The Islamic tradition mentions a total of 125,000 messengers sent to humankind – many scholars are of the opinion that the underlying common themes and understandings of life on earth and human-nature relationality within ancient wisdom traditions, that include religious, spiritual, and indigenous traditions, is due to this knowledge originating from the same Source and communicated with humankind through the series of messengers or prophets (Nasr, 1997). Islamic onto-epistemology, therefore, is in conversation with these traditions as they have contributed to understanding the complexity of our human condition.

Historically, Islam has embraced and elevated the diversity of cultural expression while maintaining its core principles. This is evident through Islamic art, architecture, literature, and storytelling from Mughal, Ottoman, and Andalusian architecture to traditional

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Moroccan art and Persian literature, West African griots' storytelling of the Prophet's ﷺ life, and evolving contemporary cultural expressions of the faith as they span the globe (Morgan, 2007; Ware, 2014; Frishkopf and Spinetti, 2018; Darke, 2020). The Islamic tradition, therefore, has a local and universal dimension and a rich diversity of expression, however, always in submission to Divine Unity or *tawhid* (see below). The traditional Islamic civilisation was also characterised by the pursuit of knowledge or *ilm*, which shaped both Muslim culture and intellectual life. Both knowledge of the manifest and esoteric world, including physical rituals of worship and spiritual wellbeing as evidenced through the orthodox Sufi tradition of Islam (Chittick, 1989; Arberry, 2013), were considered to be fundamental pursuits. *Ilm* was, therefore, sought and generated to inform *amal* or action, in the ultimate pursuit of deepening one's understanding of Divine Reality through greater understanding of oneself and the nature of life on earth (Murata and Chittick, 2006; Rosenthal, 2006). This is evident through many traditional prayers that seek ease in integrating and translating our knowledge into action, to benefit ourselves and our communities in this world, and our souls in the next life.

The concept of *ilm* or seeking knowledge/education is all-encompassing and includes knowledge of the wider natural world(s) and our human selves as part of these worlds. From an IE perspective, the grandness of the natural world is reflective of the grandness of the Creator or Divine Reality. Therefore, the core texts of the Islamic faith urge and encourage the reader and/or listener to deeply reflect, contemplate, and explore the grandeur and intricacies of the created world, for a deeper understanding of ourselves and our relationality with everything that exists around us (Nasr, 1987a; Gade, 2019). *Ilm* is not restricted to reading and writing and can take many shapes and forms, resulting in a magnitude of literacies through learning and lived experiences. The pursuit of *ilm* or knowledge/education is intertwined with a deep sense of social justice, the social within IE relates to ourselves, other humans, non-human life and creation, and rights and responsibilities related to these. This involves the responsibility to avoid harm, in relation to ourselves and to the rest of creation, and includes obligations to avoid waste and overconsumption, treat non-human life with kindness and care, and treat the earth as a sacred trust with deep respect for it as the very source of our sustenance. These rights and responsibilities are detailed both within the key texts of the *Quran* and the *Sunnah*, and strongly foreground human relationality with the rest of the created world and the cosmos beyond (Gade, 2023).

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Consequently, within the Islamic tradition, what we understand as education, pedagogies, and literacies are inherently reflective of the pursuit of knowledge with the ultimate goal of seeking a deeper relationship with the Creator through merciful, just, and ethical engagement with the creation, which includes the wider natural world. This is not sought for in isolation, but through gaining a deeper understanding of ourselves *in relation* with others, the wider community of beings on earth, the natural world, and the cosmos beyond (Chittick, 1989; Murata and Chittick, 2006). The “environment”, therefore, is intrinsically intertwined with our existence, a source of “public pedagogy”, and a sacred trust to be treated with respect and reverence as a source of our sustenance and connection to each other, and a connection to the Divine Essence present within all of us. Many of these literacies, however, much like indigenous wisdom traditions have been categorically marginalised or suppressed through Euro-Western (neo)colonisation in the lands of traditional Islamic scholarship. Almost all nations with Muslim majority populations have been (neo)colonised both materially *and* intellectually through the hegemony of universalised, Euro-Western onto-epistemologies. Therefore, even though Islamic scholarship retains its strong presence in the places of its inception, much like other ITELs it remains outside of mainstream formal and non-formal educational spaces as the majority of these are based on Euro-Western models of education (Nasr, 1997; Zaman and Memon, 2016).

Both (neo)colonisation and cultural imperialism (Said, 1994a, 2003) continue to marginalise onto-epistemologies distinct from Euro-Western ways of thinking and being through epistemic hegemony and universality. Said’s (1997) work *Covering Islam* makes excellent evidence based contentions of how Euro-Western media portrays the rest of the world, specifically traditionally Muslim majority nations, aimed at creating harmful stereotypes and division that sustain modern imperialism, and lead to further marginalisation of the diversity of onto-epistemologies and ways of thinking and being. The theoretical space of IE and its contribution to the theoretical lens of this research inquiry, therefore, is an act of resistance and epistemic decolonisation that opposes Euro-Western intellectual hegemony and creates the space for the revival of historically marginalised knowledge systems, philosophies, and literacies.

As previously indicated within this section, I will briefly introduce and discuss below some relevant terms and concepts from Islamic philosophy and practice in the context of this

research inquiry and wider academic discussions around human-nature relationality, in the context of the environmental crisis. These terms and concepts are presented in Arabic, as they are found within the texts of the *Quran* and the *Sunnah* and elaborated upon through centuries of scholarship. Semitic languages including Arabic derive their words from a root system – every word can generally be traced to a three or four letter root word from which different words and meanings are derived. One word, therefore, can evoke a world of meaning as it relates to other words deriving from the same root.

Additionally, due to the linguistic possibilities and dialects of the language, a single word can have several and often related meanings depending on its contextual application (Jones, 2011). Therefore, the corresponding meanings shared for the terms below aren't translations, but interpretations that draw from scholarly works (Nasr, 1987a, 1987b, 1996, 1997; Chittick, 1989; Murata and Chittick, 2006; Upton, 2008, 2011; Nasr *et al.*, 2015; Gade, 2019, 2023) that elucidate how these concepts are thought about, lived, and experienced within the Islamic tradition. This use of translanguaging not only honours deep connections to my faith tradition and my mother tongue that shares vocabulary with Arabic but also allows for the original meanings and emotive experience of the words to be retained, in addition to disrupting the domination of the English language within mainstream avenues of academic scholarship. The terms and concepts below are also used within the findings and analysis chapters with footnotes to guide the reader and explain the specific contexts they are used in.

khalifah - literally translated as successor, leader, caretaker, steward. The concept denotes the responsibility of guarding and protecting something that has been entrusted to a person which they will have to account for. The word is literally used as a prefix to a name to denote leadership, but the essence of it is based in principles of stewardship. In Islamic theology, Adam (peace be upon him) as the first human, is considered to be the first *khalifah* or steward of the earth. Within IE, the term denotes stewardship of the earth as a sacred trust that will be passed on to next generations. *Khulafah* (plural) or we as human stewards are, therefore, expected to "...tread lightly/humbly on the earth" (*Quran*, 2025, *Surah Al-Furqan/The Criterion: Ayah 63*).

fitrah – literally translated as creation, this concept denotes the primordial nature of the human, our shared natural disposition when we enter this world, which is characteristically

pure and good, and functions as our internal compass (in contrast to the Christian theological concept of humans being born in original sin). Engagement in destructive practices or behaviours, whether environmental or otherwise, is understood to be dependent on the degree of human alienation from the *fitrah*.

mizaan – translated as the balance, scales, measure, weight. The concept is used to denote the delicate balance of the ecosystem and the balance within creation – in our bodies, at subatomic levels, in the earth’s atmosphere that enables us to inhabit it and so on. “As for the earth, We spread it out and placed upon it firm mountains, and caused everything to grow there in perfect balance” (*Quran*, 2025, *Surah Al-Hijr/The Stone Valley, Ayah 19*). It is also used to refer to the “Divine Scales” and ideals of justice, in the context of this thesis, socio-environmental justice.

amaanah – something that is entrusted to be cared for, this applies to all kinds of trusts in the form of human kin, children, financial trusts, positions of responsibility, and the wider earth we inhabit. All forms of sustenance are generally considered to be a trust. The three letter root of the word *a-m-n* generates similar words with meanings of security, peace, and trustworthiness. The word *amaanah*, therefore, carries these connotations. In the context of IE, the earth and the wider natural world are an *amaanah* that has been entrusted to humankind to be cared for with trustworthiness and through stewardship.

tawhid – the central tenet of Islam denoting the oneness of Allah as the Creator of everything that exists. Volumes of philosophy have been written to interpret and explain this concept of monotheism, of oneness, and indivisible unity. It constitutes the first half of the *shahada* or the Islamic declaration of faith. The *shahada* or “witnessing” is used to signify that a person entering into the Islamic faith witnesses the oneness of the Creator. Tawhid also represents the concept of Divine Unity and the intertwined nature or oneness of creation.

wahdat-al-wujood – literally translates to the unity of being or oneness of existence and denotes the principle of unity within diversity. In the Islamic tradition, Allah is understood to possess ultimate existence or *wujood*. It is interesting to note that the Arabic word *wijdan* derives from the same three root letters of *w-j-d*, as does *wujood*. The root conveys meanings of discovery, ecstasy, and existence, implying meanings of being ecstatic at

discovery – the discovery of our true selves, the joys of discovering the natural world, the beauty of existence and the ultimate discovery of Divine Reality experienced through the oneness of being.

qalb – the heart, which is considered to be the centre of human spirituality in the Islamic tradition. The root also has meanings of turning and/or returning signifying the physical movement of the heart and the metaphorical “change of heart”. The heart is understood to hold memory, emotion, and a powerful guiding force such that if the heart is guided and inclined towards good, the rest of the body and spirit will inevitably strive to follow, no matter how difficult it may be to choose healthier thoughts and actions. In the context of the environmental crisis, this applies to the often difficult striving and activism required within our capitalist, imperialist, consumerist socio-economic structures.

ruh – the immortal, essential self or life force that animates the human body. Within the Islamic tradition, it is believed that Allah created Adam (may peace be upon him), the first human, by blowing this life force or spirit into him as an act of life giving love.

nafs – part of the human self or identity that is often characterised as the lower self or ego with fluctuating states. The three main states are described as:

- the **nafs-al-ammarah** (the self that inclines to evil, oppression of oneself or other, the uninhibited lower self). As a guiding example: excessive human consumerist inclinations and actions.
- the **nafs-al-lawwama** (the self that battles its lower desires or inclinations). As a guiding example: human restraining of consumerist tendencies.
- the **nafs-al-mutma'innah** (the self at rest, in a state of contentment). As a guiding example: the human self that is devoid of or with minimal consumerist tendencies.

The third stage of the **nafs** is thought to be rarely achieved except through years of spiritual mastery (similar to deep meditative work within Buddhism). This is because the human is always in a state of **jihad-bin-nafs**.

jihad-bin-nafs: literally translated to the struggle of the self. This is understood to be the ultimate struggle of the human being as opposed to non-human creation that does not

possess the intellectual capabilities to be engaged in it. *Jihad-bin-nafs* is the most rewarded struggle within the Islamic tradition because of the consistent effort required to be engaged with it, which results in the mastery of the *nafs* or the self (see also Naess' version of *Self-Realisation* in the *Deep Ecology* section).

niyyah – translated to intention. Intentions carry deep significance in the Islamic tradition such that they are rewarded as soon as they arise or are cognitively made with presence of heart, irrespective of the commencement of actions relating to these intentions. A *niyyah*, therefore, is a powerful force and the seed of all action, such that all actions are valued, appreciated, and rewarded based on their intentions – “The (value of) an action depends on the intention behind it” (Sunnah, 2025, *Sahih Muslim* Book 33, *Hadith* 222).

tafakkur – the act of meditative thinking and reflection as it relates to our existence and the existence of life, life forms, and the wider natural world and cosmos. Literally means to reflect on or give thought to something. *Tafakkur* and *tadabbur* are often used together, with *tadabbur* often implying deeper contemplation.

tadabbur – the term implies deep contemplation especially as it relates to thinking and realising the consequences of our actions, whether beneficial or not, and their impact on ourselves, our human relations, and the wider natural world around us. The root letters also imply meanings of “going back to the root” of things or foundational reasons. In the context of this thesis, this implies deep contemplation on the foundational issues leading to the environmental crisis.

muraqabah – can be translated to watching or observing. It is an act of meditation or meditative state where a person observes their internal state. Within the Islamic tradition *muraqabah* is often a meditation on one's existence in the constant presence of the Creator to find peace, rest, and guidance. The ultimate goal within the orthodox *Sufi* tradition (spiritual tradition of Islam) is to seek transcendent union with Allah.

muhaasabah – literally translates to accounting for one's self and its actions. The root letters of *ha-sa-ba* have meanings of measuring and thinking, implying thought and self-accountability.

ayah – literally translates to a sign or evidence. Each verse in the *Quran* is referred to as an *ayah*, signifying it as evidence of the existence of the Creator, a sign and a literacy that points to the knowledge of what it contains. Within IE, every part of the natural world and creation is considered to be an *ayah* or evidence of the Creator/Source that it originates from.

surah – denotes a chapter of the Quran.

kitab-al-manzoor – translates to the book that can be seen, pictured, perceived. Denotes the natural world and the cosmos. The created world is understood to be an open book to be read, seen, understood, and studied as a pedagogy to derive literacies from, for a greater understanding of ourselves and the wider natural world.

kitab-al-mastoor – translates to the book that is recorded or written. *Mastoor* has meanings of being inscribed or written, and the root letters of *sa-ta-ra* generate words which translate to stories. *Kitab-al-mastoor* is used to refer to the primary text of the Islamic tradition, the *Quran*, which is referred to by many names and contains stories of the prophets. *Kitab-al-mastoor* is often juxtaposed with *kitab-al-manzoor* to denote the collective “curriculum” for humankind, the written text and stories within the *Quran* and the tangible, observable texts of the wider natural world and the cosmos.

3.5 An Intertwined Theoretical Framework

The sections above discussed the three theoretical spaces that come together to form the intertwined decolonial and pluriversal theoretical framework used for this research inquiry. The theoretical space of Islamic environmentalism (IE) is part of the Islamic tradition which has a long and rich history of dialogue with other knowledge traditions, most notably through translations of ancient Greek works of science, medicine, and philosophy into Arabic. This was followed by centuries of philosophical and scientific advancement resulting in works later translated into Latin and transmitted to European centres of learning (D’Ancona, 2022). Traditional Islamic scholarship, therefore, was dynamic, generative, and deeply engaged with the events and academic developments of the time, using Islamic onto-epistemologies to develop a diversity of academic fields ranging from algebra, architecture, and astronomy to medicine, optics, and chemistry (Alkhateeb, 2017).

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The intertwined lens of this research inquiry is inspired by this dynamic nature of traditional Islamic scholarship and, therefore, bridges philosophical, theoretical, and academic traditions from across the world and across time, highlighting the interconnections that exist within these spaces, reflective of our shared humanity and knowledge generation (Keeler, 2019). The lens of the inquiry enables the creation of critical, radical, spaces of learning (in the form of research workshops designed for the study) crucially needed to address the multiple socio-environmental crises we face on earth (Moloney, 2025), through intercultural communication and dialogue. The creation of these spaces is key to pave current and future paths for ethical, equitable, academic, and practice based collaborations with respectful boundaries and disagreements where needed.

The following conceptual map visualises the intertwined theoretical framework for this study designed using a decolonial and pluriversal approach. The map guides the reader through key areas of the theoretical terrain, elucidating the framework's application to the research questions and its use for subsequent analysis of research data. Some of the key intersections between the three theoretical spaces are: socio-environmental justice; deep human relationality with other life and life forms; advocacy for more than material perceptions of the natural world; and critical evaluation and introspection of the factors leading to the imbalance (environmental crisis).

Table 1 A conceptual map of the theoretical framework

Decolonial and Pluriversal Approach		
<p>Decoloniality foregrounds resistance to colonial, Euro-Western, understandings of humans and nature as separate entities, and purely material, extractivist, perceptions of the natural world. The concept of the Pluriverse emphasises human diversity and plural ways of thinking and being as strengths that enrich our lives on earth. The intertwined theoretical framework is informed by this decolonial and pluriversal approach, emphasising deep human-nature relationality.</p>		
Ecopedagogy	Deep Ecology	Islamic Environmentalism
<p>>> Derives from critical pedagogy (Freire) as an antidote to anthropocentric understandings of the natural world.</p> <p>>> Emphasises socio-environmental justice taking into account economic, political, and social factors.</p> <p>>> Advocates for emancipatory, participatory, teaching and learning practices for sustainable and regenerative futures, including the integration of traditional ecological knowledge (TEK) in contemporary sustainability education (Kahn).</p>	<p>>> Distinguishes between shallow and deep ecology, where deep refers to addressing the foundational issues responsible for the environmental crisis within both philosophy and practice (Naess).</p> <p>>> Emphasises the intrinsic value of nature and plurality of thinking and being.</p> <p>>> Increasing identification with other living beings and life forms increases our Self-Realisation, enabling us to develop our personal ecosophies.</p>	<p>>> Considers nature to be alive and animate (similar to various other ITTELs), and the earth as an <i>amaanah</i> (a sacred trust), entrusted to humans for stewardship.</p> <p>>> Contemplation/reflection in nature is considered to be a teaching and learning experience and is strongly recommended to develop a greater understanding of life (Nasr).</p> <p>>> The concept of the <i>mizaan</i>, emphasises socio-environmental justice, the delicate balance of ecosystems, and the balance within us, where imbalances within one lead to imbalances in the other.</p>

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The three theoretical spaces intertwine and strengthen each other, constructing a robust theoretical framework to design the research workshops for this inquiry and as a lens to “read” the data that emerged. The critical evaluation of socio-political factors and emancipatory praxis of ecopedagogy advocate for plural knowledges and socio-environmental justice, aligning with the decolonial and pluriversal approach of the inquiry. Ecopedagogy creates a solid foundation for teaching and learning within the research workshops to actively enable a diversity of knowledges, both within ITELs and those that participants bring to the workshop spaces, to be explored, acknowledged, and put into practice.

Both deep ecology and Islamic environmentalism (IE) further strengthen this foundation, adding layers of depth and meaning for the creation of a direly needed critical, radical practice of sustainability education for contemporary contexts. Deep ecology contributes to ecopedagogy’s emancipatory framework by enabling learners to think deeply and critically about existing socio-economic structures and power imbalances, and how these obstruct sustainable and regenerative futures. It enables deeper questioning to trace and articulate the foundational issues leading to the environmental crisis and offers frameworks for developing personal ecosophies for an increasing identification with other life forms on earth, and as an antidote to materialist, consumerist, and extractivist perceptions and practices. Similarly, Naess’ advocacy for the plurality of knowledges within the deep ecology movement followed by practical pathways to integrate a diversity of environmental literacies enables the creation of a shared vision for a sustainable and regenerative present and future.

Islamic Environmentalism (IE), as a faith based knowledge system and therefore an ITEL itself, offers another rich layer to the theoretical framework by foregrounding more than material connections to the natural world (also advocated within deep ecology and other ITELs). Its emphasis on perceiving the natural world as a living, breathing entity and a sacred trust foregrounds the concept of environmental stewardship and caretaking, both due to its inherent sacredness (similar to the inherent value of nature within deep ecology) and as a trust for future generations. IE’s themes of socio-environmental justice and resisting the consumerist desires of the ego intersect with similar themes within both ecopedagogy and deep ecology: holding the self and external power structures accountable for social and environmental imbalances and injustices.

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Using this richly layered, intertwined, and powerful theoretical framework, I explore and investigate the use of indigenous and traditional environmental literacies (ITELs) by foregrounding key principles and concepts from ecopedagogy, deep ecology, and Islamic environmentalism (IE). The methods used within the research design (see following chapter) encourage engagement with and a critical appraisal of the foundational issues responsible for the environmental crisis (deep ecology), socio-environmental justice (ecopedagogy and IE), and more than material perceptions of the natural world (IE). The theoretical framework is then used to read the multimodal research data, analysing how participants attempted to revive, apply, and celebrate ITELs within the workshop spaces and how these processes reflect the key concepts from the intertwined theoretical framework.

4. Research Inquiry: design and methods

This study questions the foundational lenses we use to view the natural world and explores the relationship between humans and the natural environment from the perspective of indigenous and traditional environmental literacies (ITELs), contributing to new possibilities for education for sustainability and regeneration. The methodology for this research inquiry, therefore, derives from a worldview that foregrounds holistic perceptions of human-nature relationality. Our globalised, colonised, and capitalist world makes it difficult for us to perceive and interact with nature through these lenses or even to speak of the environment from a material *and* spiritual perspective, making this a radical approach to education for sustainability and regeneration.

The majority of discourse around education for sustainability (EfS) looks at the environmental crisis as an isolated problem, either only as a material problem or a problem to be resolved through superficial measures such as changing public behaviour (Adams, 2016) or greenwashed strategies such as the race to net zero (Dickie *et al.*, 2022; Aronczyk, McCurdy and Russill, 2024; Spaniol *et al.*, 2024). This discourse fails to critically question the root causes of the crisis, challenge existing socio-economic structures based in capitalism, imperialism, and colonialism, or question governmental policies, education systems, and our lack of deep relationality with the earth. Adams (2016) highlights the increased recognition of the inadequacy of mainstream understandings of and interventions for the environmental crisis, specifically the reductive nature of these interventions to change *individual* behaviour in the face of a *collective* crisis. A large number of studies evidence the awareness and pro-environmental behaviour gap (Grimmer and Miles, 2017; Siegel, Cutter-Mackenzie-Knowles and Bellert, 2018; Wyss, Knoch and Berger, 2022; Do and Do, 2024; Hu *et al.*, 2025), including the power of social networks in decreasing it (Yang and Lin, 2025), revealing the superficial approach behind mainstream formal and non-formal EfS in its many forms. The premise being, that we as humans cannot possibly work and hope for sustainable and regenerative futures without developing deep, ethical relationships with the land and the natural world we inhabit and are *inextricably* intertwined with.

The methodological approach of this study, therefore, foregrounds and argues for holistic approaches to teaching and learning for sustainability that foreground our deep relationality with the natural world (Kimmerer, 2002, 2013), one that challenges and resists

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capitalist and extractivist power structures, cultural imperialism, indigenous epistemicide (Mignolo, 2009; Smith, 2012), and reductive, binary views of the human-nature relationship as propagated through imperial Euro-Western thought and globalised monoculture. Moreover, the approach of this inquiry encourages thought and reflection about the nature of life and creation on earth and beyond, including humans, and whether we can appreciate these as more than just materially categorised, scientifically defined entities that need saving. It encourages reflection for me as a writer and researcher as I attempt to navigate this study through my theoretical lens, and for my participants, facilitating rich, deep, and meaningful conversations and connections with each other and the natural world, creating new possibilities of working towards and inspiring sustainability and regeneration in their own lives, in their own ways.

Consequently, the methodology is developed to enable an active decolonisation of environmental literacies throughout the research process by facilitating participant engagement with and reflections on ITELs and deep, ethical relationships with the natural world. In simplified terms, this could have been classified as a qualitative study recognising that the data generated is qualitative and analysed as such, and that reality and knowledge is constructed and interpreted through the research encounters and by myself as the researcher. However, I do not classify reality as either quantitative and objective, or qualitative and subjective, or concur with notions of a specific approach or method needed to understand specific realities to generate knowledge. There are objective truths that *can* be proven; for instance, we know that the sun produces heat, that all living beings ultimately die, that humans need food and water to survive. We eventually arrive at these same conclusions no matter what methods are utilised.

However, it begins to get ambiguous as we transition from objective to subjective territory, given similar conditions research methods may be replicated to arrive at the same conclusions, but a change in conditions and/or methods may shift what seems to be an objective truth to a subjective one. So, for instance, what may be an objective truth in the field of medicine for a sample of individuals in a clinical setting may fail to be true when applied to a population of millions. A drug or medical treatment effective for the clinical sample may be treated as an objective truth, but when this is applied to a population of millions where each individual has their own set of complex body chemistry affected by their unique emotional and mental states, the objectivity of the clinical results changes into a subjective truth.

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Reality therefore is complex; it is a fascinating mix of objective and subjective truths that can be arrived at through multiple ways of knowing and being and through multiple methods or none. Paul Feyerabend, who was a Professor of Philosophy and the Philosophy of Science at Berkeley and Zurich published a popular polemic titled “Against Method” (Feyerabend, 1993) that argues for an anarchic approach to science. He demonstrates how events and developments such as modern atomism including quantum theory, dispersion theory and the wave theory of light amongst others came about through scientists *breaking* methodological rules or deciding not to be bound by them. The classic double slit experiment within quantum theory demonstrates how electrons behave either like a particle or a wave determined simply by whether the experiment is being observed or not, essentially meaning that the reality of electrons changes when they are being observed (Bach *et al.*, 2013).

“Pluralism of theories and metaphysical views is not only important for methodology, it is also an essential part of a humanitarian outlook” (Feyerabend, 1993, p. 93). Feyerabend makes strong and convincing arguments about how discovery and progress has been achieved in the past through *not* following uniform procedures, contending that if scientific achievements can only be judged *after* the event, there is no way of ensuring success for a pre-established method. Intuition plays a very important but underrated role in the generation of knowledge; discoveries come about through trial and error and often when we are not aiming to specifically discover something – it wouldn’t be a *discovery* otherwise. This is not to say that research methods need not be followed, however, the argument is that not every research inquiry needs to mechanically adhere to pre-set methodological guidelines to arrive at its conclusions (St. Pierre, 2021a).

This research inquiry does not necessarily break any methodological rules, however, it does not follow conventional academic expectations of a linear process of first developing a theoretical framework or hypothesis which then informs the methodology and consequent methods. The research inquiry asks a very practical general question, to summarise – how can we revive, apply, and celebrate ITELs in the context of contemporary education for sustainability and regeneration? What made more sense to me when considering the research question then was to envision and experiment with ideas about how the actual research process and encounters with participants would answer it, instead of first choosing or articulating a worldview, paradigm, or theory to guide the process. What methods, I asked, would be the most suitable to allow for active

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participation and discussion as a collective but also as individuals? Having said that, I can now *academically* articulate that from the outset, my research inquiry was based in a methodology that derived from a decolonial and pluriversal lens and viewpoint as has been explored and detailed in the previous chapter. I use the term, academically, because most of my knowledge and life experience comes from multiple ways of knowing and being, much of it deriving from knowledge and wisdom traditions that are not a product of the establishment of modern Science and Euro-Western academia (Kahn, 2010; Oliveira, 2021).

This brand of scientific academic endeavour has only recently begun to acknowledge the reductionist, materialistic, and dualist Cartesian worldview underpinning much of modern research, and which through colonial epistemicide has presented itself as the standard, universal mode of “conducting research” (Mignolo, 2009, 2011; Smith, 2012; St.Pierre, 2021). In contrast, my onto-epistemological views of the world are rooted in pre-colonial knowledge traditions that encompass the material, spiritual, psychological, emotional, and various other aspects of existence and knowledge, and consequently knowledge generation. Additionally, these knowledge traditions including many indigenous, faith, and spiritual wisdom traditions are *intrinsically* interdisciplinary. For instance, traditional Chinese, Indian, and Greek medicine treat the whole body instead of treating a disease or organ in isolation with onto-epistemologies that encompass the whole person, or the “qualitative” and the “quantitative”. However, any knowledge tradition that was and is perceived to be incongruent with the modern, Euro-Western scientific endeavour is considered and categorised as the “other” (Said, 1994a, 2003), and therefore either labelled a myth, or treated as backwards and beneath mainstream, universalised Euro-Western ideals.

The methodology for this study, therefore, foregrounds historically marginalised knowledge systems and practices of knowledge generation as an act of revival, reclamation, and resistance. Consequently, even though I was not aware of the related academic terms when I began drafting the research proposal, I was already thinking of and designing a data generation process that was decolonial, and therefore pluriversal, based on my perspectives of viewing the world. The draft research design and methods were put together and in place before I started to academically term and write about my theoretical lens and explore academic theories and concepts that intersected with my worldview. In addition, the methods were greatly informed by my previous interest in and exploration of participatory research, ecopedagogy, and critical theory for my Masters’ dissertation, my

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very practical experiences of teaching at primary and secondary school for six years, and the need to pilot educational processes responding to the research questions that could be reiterated within different settings if successful. As someone interested in creative work and approaches to education, I have successfully used arts-based, tactile, and participatory approaches to teaching and learning and was excited about developing similar methods for this research project.

It is also important to highlight that I do not claim for the methodology used for this inquiry to be what St. Pierre calls a *stable* method of inquiry, or in other words, the best and only way to respond to the research questions (St. Pierre, 2021). The methods were developed in response to my research question, not through a dualist subject/object ontology requiring pre-established methods, but through an appreciation of our interconnected existence and deeper entanglements with each other, and the living, breathing, non-breathing, material world around us. In other words, my theoretical lens that rejects dualistic and purely materialist worldviews guided me to purposefully choose methods that would involve intentional interactions with the participants, spaces, and materials I had access to and had chosen for my research inquiry.

To reiterate, this is a research inquiry that addresses the foundational philosophical paradigms that shape our responses to the environmental crisis, thereby either perpetuating or mitigating it in the long term. The inquiry does not seek specific measurable outcomes or behaviour changes but looks at the soil and roots of the problem, so to speak, and attempts to critically address and shift mainstream perspectives on human-nature relationality through the data generation process. It was very important for me, therefore, to design a well-supported space where participants felt comfortable to engage in respectful, honest discussions and reflections and where they could be facilitated to express complicated thought processes and emotions. Consequently, the methodology gives paramount importance to methods where participants are enabled to express their responses through multiple modalities to prevent the limiting of expression and enable robust responses to the research questions.

For the purposes of the study, the research methodology can then be described as using a post-qualitative (Mazzei, 2021; St. Pierre, 2021a, 2021b; St. Pierre, 2021) and participatory approach including elements of arts-based inquiry, reflective discussions, group problem solving, embodied expression, and shared stories and conversation. More specifically, it

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contributes to the trajectory of post-qualitative inquiry by refusing prescribed methods and actively acknowledging the entanglement of the human and the non-human, the material and the non-material (Barad, 2007; St. Pierre, 2021a). Both concepts are foregrounded in the study with its exploration of human-nature relationships through ITELs that perceive reality as more than just physical, material life on earth, or humans and the natural world as two separate entities. Additionally, research methods within a post qualitative approach cannot be separated from its onto-epistemology or act as fixed prescriptions for specific research contexts, allowing for the methods to organically evolve from my onto-epistemology.

Like Feyerabend (1993) above, St. Pierre's (2021b) work on post qualitative inquiry creates space for the deconstruction of mainstream, conventional, humanist qualitative research practices within Euro-Western academia. Bringing together concepts from posthumanism, critical theory, poststructuralism and indigenous philosophies, post qualitative inquiry critically questions universalised ways of making meaning with a strong emphasis on deeply engaging with philosophy to “re-orient thought to experiment and create new forms of thought and life” (St. Pierre, 2021b, p. 163). From a post qualitative approach, meaning is made through the intertwining of theory and data in the “analytic process of thinking with theory” (Mazzei, 2021, p.198). This is seen as an ongoing “process methodology” (Mazzei, 2021, p. 198) and loosens what St. Pierre (2021b, p. 166) calls “the methodological project’s...increasing control of our thought”. Describing fixed, prescribed methodologies as a project that seeks to gain “control of our thought” validates the struggle I experienced during my Masters research seven years ago. I could not reconcile my worldview with a reductive Euro-Western ontology and epistemology intent on categorising reality as either quantitative or qualitative, and knowledge generation “methods” into quantitative, qualitative, or mixed methods. The post qualitative approach, therefore, provides me with the academic space and terms in the English language to express the complex, inter-relational, and rich nature of reality *as we experience it* and as it is explored within my research inquiry. It is an academic approach to knowledge generation that acknowledges and creates the crucially needed space for exploring holistic perceptions of reality, the nature of life, and in the context of this research inquiry, human-nature relationality.

Consequently, this post qualitative inquiry derives from my theoretical framework that intertwines ecopedagogy, deep ecology, and Islamic environmentalism to recognise,

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acknowledge, and respond to the complex, lived realities of colonialism and imperialism, and materialist, extractivist perceptions of the natural world. Further, the decolonial and pluriversal perspective of the inquiry informs the participatory and reflective nature of data generation methods that enable plural ways of thinking and being in the world. The onto-epistemological and theoretical lens of the study guides the exploration of ITELs in the context of teaching and learning for sustainability and regeneration within non-formal educational spaces, in the context of the environmental crisis. Specifically, the study asks the following general question:

Q. How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment and inform responses in the contemporary context of the environmental crisis?

The methodological approach allows for an array of data generation methods, however, I wanted to ensure that I utilise methods that not only responded to my research question but equally allowed multiple modes of expression for the participants involved. The research workshops used to generate data for the study were designed to facilitate activities and responses that fed into the general question of the study. To support this, the general research question was deconstructed into three specific sub-questions, detailed below, with one participatory research workshop designed to correspond and respond to each sub-question:

1. How can individuals be facilitated to **revive** ITELs and what does this process demonstrate?
2. How can individuals be facilitated to **apply** ITELs what does this process demonstrate?
3. How can individuals be facilitated to **celebrate** ITELs what does this process demonstrate?

The three themes of *revive*, *apply*, and *celebrate* emerged as I attempted to simplify the main research question into accessible components. The decolonial and pluriversal approach for the inquiry foregrounded ITELs, the wisdoms within, and their significance to the contemporary context of sustainability issues, essentially creating

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the need to *revive*, *apply*, and *celebrate* ITELs within the workshop space. Each research workshop was, therefore, designed to respond to one of the themes and corresponding questions with a focus on creating an awareness of and facilitating participant engagement with ITELs. The sections that follow detail the research sites and participant demographics, methods used for each theme and consequent research workshop, process of analysis, and ethical considerations for the study.

4.1 Research Sites and Participants

4.1.1 HEIs and Community Organisations

This study explores the use of indigenous and traditional environmental literacies (ITELs) both in the global majority or places that were/are (neo)colonised and suffered an erasure of indigenous and traditional knowledge systems, and the global minority or places with histories of colonising where indigenous and traditional knowledges were similarly suppressed or erased. Two sites, one from each geographical area were chosen for the research project; Scotland where I am based as a doctoral researcher, a place with histories of colonising, and Uganda, a place with a history of colonisation and where my supervisory team have links with Makerere University and local organisations due to our work with the Sustainable Futures Global Network (SFGN).

There are many avenues of non-formal education within these places where the research questions could have been explored, however, I chose research sites within Scotland and Uganda that I most wanted to investigate these questions at. Primarily, I wanted to situate my study within established places of education and learning, where Education for Sustainability (EfS) was already taking place whether formally or non-formally but where, as evidenced within the literature, individuals might not have interacted with ITELs through formal or non-formal teaching and learning. Higher education institutions (HEIs) and community organisations were two places of learning that I was most interested to investigate my questions at, predominantly because these were and are places where EfS for students and communities takes various shapes and forms, and where I could facilitate research workshops that explored ITELs to respond to contemporary sustainability challenges. It would have been ideal to facilitate the research workshops at an HEI and community organisation each in both Scotland and Uganda for comparison, however, the time frame of the study in conjunction with the Covid-19 pandemic and other logistical

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issues and costs did not allow for this. Consequently, as a research inquiry intending to explore new approaches to mainstream EfS through the creation of non-formal educational spaces, I decided to base the series of workshops at a community organisation in Scotland as I was already based here, and with students at a HEI in both Scotland and Uganda.

As a research student based at the University of Glasgow (UofG), it was a practical decision to choose the university as the HEI site in Scotland, not just because of access and familiarity with university departments and procedures for research, but also to explore how students at one of the top 100 HEIs in the world, specifically in the global minority, responded to an ITTEL focused approach to EfS. Additionally, having the university as one of the sites also acted as a natural extension of my MSc research work at the UofG, where I investigated university students' experiences of EfS whether this was formally through their university courses, or non-formally and informally through extra-curricular activities, and upbringing and life outside the university. The research workshops in Scotland, therefore, were facilitated at the UofG, both at the School of Education and the Advanced Research Centre.

For the HEI in Uganda, prior links to Makerere University made it the default choice for the workshops, however, the university required additional ethics clearance - after UofG clearance – estimated to take 6 to 8 months. After trying very hard to make this work in my second and third year after delays caused by the pandemic, it gradually became evident that it would not be practical to facilitate the fieldwork at Makerere University due to the length and nature of the process. I made the difficult but necessary decision to not continue with the original site. The decision also recognised the time required for visa applications and logistical issues, and additional time pressures that had affected the research project due to a suspension of studies on two separate occasions for health reasons.

As mentioned above, being a member of the SFGN, however, meant that I had connections with other SFGN members based within and outside of Africa. The SFGN is a social enterprise network that previously focused on central/southern Africa but now operates globally and is founded and co-directed by my primary supervisor Professor Mia Perry. It is a network of people interested in and working towards socio-environmental sustainability, specifically through developing ethical international partnerships, with members from a wide range of disciplines and backgrounds. The network includes members who are not only interested in socio-environmental sustainability, but more

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importantly originate from and were living in Uganda and other parts of central/southern Africa (places in the global majority where I intended to facilitate my research inquiry).

The SFGN community then replaced Makerere University as the research site with members originating from or residing in global majority countries. The SFGN also has a WhatsApp community chat that we use to stay in touch and share news and updates for and from the network. I had previously requested for members to share central/southern African ITELs from their upbringing, life, and work in preparation for my workshops at Makerere University. The request led to lively conversation and discussions foregrounding ITELs originating from central/southern African philosophies and knowledge systems. Following the decision to remove Makerere University as one of the research sites for the study, an abridged series of online research workshops was planned to be facilitated with members of the SFGN, replacing the series of in-person workshops that could not take place with university students in Uganda. However, further challenges with time zones and participant availability made the online workshops impossible to facilitate. Finally, due to the upcoming biennial SFGN symposium scheduled for April 2024 in Malawi, a condensed version of the three research workshops was facilitated in-person as part of the symposium programming and activities. The 5-day symposium took place at Ufulu Gardens (Figure 4), a convention centre in Lilongwe and the condensed research workshop was scheduled for the second day of the symposium. The symposium workshop was open to all members of the SFGN who were interested in participating – the majority of participants have central/southern African heritage, but the workshop also had a few SFGN members with German, Indian and other heritages. The arts-based inquiry during the SFGN workshop, however, used central/southern African art patterns and the map of the African continent (see next section).



Figure 4 A snapshot of Ufulu Gardens in Lilongwe. The decorated alphabet letters SFG represent the Sustainable Futures Global Network.

In parallel, as detailed previously, I wanted to explore ITELs through research workshops at community organisations, another established place of learning where individuals may not have attended university at all or may not be attending anymore, but were still part of a community with access to an educational setting. Being based in Glasgow, it was a practical decision to scope out the many community organisations here instead of searching for one through long distance in Uganda and then travelling there for research. My supervisory team also suggested community centres and organisations linked to crofting communities in Assynt and the Isle of Eigg in Scotland, however, these either had not been up and running after the pandemic or had low community attendance making it impossible to facilitate a productive series of workshops at the sites.

Consequently, after scoping a number of community organisations in Glasgow online, I shortlisted ones based on the “teaching and learning” of sustainability directly or indirectly through their activities. These were further shortlisted to three potential sites (Lambhill Stables, the Hidden Gardens, and the WCDT), based on evidence of active community participation through community outreach programs and events. After preliminary visits and discussions with the organisations involved, the Woodlands Community Development Trust (WCDT) was decided upon as the second research site for the study, primarily due to individuals from the community already participating in weekly events and activities organised by the Trust. This was a deciding factor because the community was used to

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regular events they participated in, and facilitating a series of workshops simply meant an additional events for the community, ensuring maximum participation.

The WCDT is a community organisation based in the West End of Glasgow with a community garden, an outdoor terrace for events, and a small community meeting room with large glass windows for indoor activities. Their website states that their events “promote community action and foster a sense of belonging”, in addition to inviting the Glasgow Seed Library to hold free workshops around “seed skills, community growing, and earth care” (Woodlands Community, 2024). The research workshops at the WCDT were facilitated both in their community garden and indoor community meeting room (Figure 5 and 6).



Figure 5 WCDT community garden (from the WCDT website).



Figure 6 WCDT indoor community meeting room (from the WCDT website).

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Following confirmation of the three research sites at various points during my study, a series of three research workshops was facilitated, first at the WCDT in July/August of 2022 and then at the UofG in November of 2022. Following these, a condensed version of the workshops was facilitated at the SFGN symposium in Lilongwe, Malawi in 2024, completing the data generation activities for the study.

4.1.2 Invitations to Adults 18 and Above

The details for the research sites above allude to the kind of participants the study intended to engage with. HEIs and community organisations usually cater to young adults and adults, the demographic that I wanted to explore my research questions with. The prompts for the research workshops require a considerable amount of reflection and discussion, specifically on subjects that might have been fairly new to explore and as such were suited to adult participation. Apart from the minimum age limit of 18, there were no other restrictions placed on participating – the study was open to all adults who were interested in participating at the HEI, the community organisation, and the SFGN symposium. The intention was to explore ITELs from around the world across these three sites and investigate how participants responded to ITELs in the contemporary context of the environmental crisis.

The original workshop design allowed for a maximum of 12 participants for the in-person workshops as anything above this number would have compromised the quality of connections, discussion, and collective reflection required to answer the research questions. However, due to the small indoor space available at the WCDT this number was reduced to a maximum of 10 participants. For the SFGN site, the three research workshops were condensed to a single 2-hour version which would take place as part of the activities of the biennial SFGN symposium. This was a walk-in workshop and it was expected that participation would not exceed 12-15 people.

Each of the invitations made to the 3 sites – the WCDT, the UofG, and the SFGN – ensured that participants were aware that they were being invited to a warm, friendly, conversational space where the research process was focused on reflection and discussion over tea, fruit, and snacks in a relaxed environment. Invitations to potential participants at the Woodlands Community Development Trust (WCDT) were made through the organisation's regular communication channels. I shared a flyer (see Appendix D) with the

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workshop details with the events manager at the organisation and this was shared through the WCDT Facebook and Instagram channels, their official website, and advertised on site as part of their activities for the summer program. I also attended two outdoor events organised by the WCDT, a summer festival event and a community library event where I was introduced to some of the attendees, shared details about my research workshops with people attending, and handed out the flyers as invitations.

Although the workshops were designed as a 3-part series for the same participants to attend all three days to allow for the content and discussion to build on themselves, I was advised at the WCDT to change this to a walk-in format to keep in congruence with their other events and to enable maximum participation. All participants would be welcome to drop in with a maximum of 10 individuals taking part in each workshop. The three workshops at the WCDT took place during July and August of 2022 and were scheduled for Saturdays to allow for community members who may be working during the week to join in. The first workshop took place on July 23rd, the second on August 13th, and the third on August 20th. The gap in between the workshops was due to consecutive Saturdays being unavailable due to various other programmed events. In hindsight, this may have been responsible for lower participant turnover for the second and third workshops, which could have been prevented if they were scheduled weekly to maintain momentum for the participants to return and continue with the workshop series. This feedback was useful in informing scheduling for the next iteration of workshops at the University of Glasgow (UofG).

For invitations to potential student participants at the UofG, I first sought permission from the Clerk of Senate to send out email invitations to undergraduate and postgraduate students throughout the schools at the university. The senate office advised me to seek permission from the Student Representative Council (SRC) for emailing the entirety of students in the university community through evaluating the benefits of the research workshops for potential participants. The SRC was happy to support this, and an invitation email was sent through the Clerk of Senate to all students across the four colleges and various schools within. Although only 12 participants were to participate in the research workshops, the email invitation to the student body at the university allowed for an appraisal of student responses to the workshop invitation and interest in conversations around indigenous and traditional environmental literacies.

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The email invitation included a link to a webpage where workshop details and instructions to participate were shared. Interested participants were advised to get in touch through my university email (providing they could reasonably confirm they could attend all three workshops) with a sentence about why they were interested in participating. A total of 156 email responses were received within 48 hours. Almost 90 of these sufficiently responded to why they wanted to participate but almost half of these interested participants were unable to participate in all three workshops, even though they requested if they could attend either one or two of them. The respondents who could not attend all three workshops but requested to be part of the process due to their interest in the research were invited to join Slack (an online platform), where they could share thoughts and/or reflections after workshop details and pictures were posted following each workshop. Respondents who could attend all three workshops but exceeded the maximum capacity of 12 participants were also invited to join the Slack online space. Although some of these participants accepted the invitation to join Slack, understandably, they did not share any responses to the brief recaps of workshop activities shared online.

Respondents who could participate in the whole workshop series were shortlisted based on their responses ensuring that the final group of participants represented a diversity of students from different disciplines. Considering the volume of emails we receive as students, most of them being deleted or left unread if not directly related to our work and studies, the number and quality of responses suggest a strong interest in indigenous and traditional perspectives around sustainability. I received a few emails where people mentioned how they really wished to attend if they did not already have prior commitments elsewhere, some shared their interest in or work with Celtic history and traditions, while others simply wrote back to appreciate the intent of facilitating workshops of this nature.

A total of 12 participants were invited from the shortlist based on their interest and commitment to participate in workshops of this nature as evidenced from their responses. I tried to ensure a mix of participants from across the schools and colleges to allow for a diverse group of participants. The diversity of the group was an important factor as I intended to create spaces for engagement with ITELs and explore the range of responses that participants from different disciplines across the university could bring. The 3 workshops at the University of Glasgow were scheduled for three consecutive Wednesdays on the 2nd, 9th and 16th of November of 2022, given that there appeared to be generally fewer classes for students on Wednesdays compared to other days of the week. The weekly

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scheduling meant that participants would have enough time to reflect on the workshop process during the week and find it easier to return on the same day and time for the consecutive workshops. The following table details the research sites, participant demographics, and the timeline of data generation for this study.

Table 2 Research sites, participant demographics, and data generation timeline.

		<i>Research Sites</i>	<i>Details</i>	<i>Participant Demographics</i>	<i>Data Generation Timeline</i>
1.		Woodlands Community Development Trust (WCDT), Scotland.	A community development organisation located in the West End of Glasgow.	Community members aged 18 and above.	July and August 2022.
2.		University of Glasgow (UofG), Scotland.	A higher education institution in the city of Glasgow, established more than 500 years ago.	Undergraduate, postgraduate, and postgraduate research students aged 18 and above.	November 2022.
3.		Sustainable Futures Global Network (SFGN) Symposium, Malawi.	A social enterprise network and community of people interested in and working towards sustainable futures through ethical international partnerships.	SFGN community members aged 18 and above.	April 2024.

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Invitations to participants from the SFGN were first made through the SFGN WhatsApp chat itself followed by emailing some of the members I either knew personally or had worked with before. Vanessa Duclos, manager for the SFGN, with whom I'd worked with closely before also helped connect me to local SFGN hub administrators in Botswana, Nigeria, Eswatini, Uganda and Malawi – they generously helped share the invitation with further members of the network who would be interested in participating. Participants who intended to attend the research workshop at the upcoming SFGN symposium in Malawi responded back in the affirmative. During the symposium in Malawi, which took place during April 2024, the research workshop was advertised as part of the symposium programming and open for all SFGN members (attending the symposium) to drop in on the day.

4.1.3 Gestures of Gratitude as Incentives

A gift voucher of GBP 15 for Roots, Fruits, and Flowers (RFF), a local health and organic foods store based in Glasgow, was provided to each participant for each drop-in workshop at the WCDT as a gesture of gratitude for their time and contributions to the research. In addition, each participant was also provided a small pack of organic seeds to plant in the shared WCDT community garden.

For the workshops at UofG, a similar gift voucher to RFF amounting to GBP 50 was provided to each of the 12 participants at end of the third and last workshop, as an acknowledgment of their warm and heartfelt contributions to the study.

No material incentive was provided for SFGN participants, however, participation contributions were collectively appreciated and celebrated as part of knowledge exchange activities for the community during the symposium.

4.2 Research Workshops and Methods

The decolonial and pluriversal lens of the study guides the post-qualitative and participatory methodological approach used for the research and data generation process. Participatory and creative methodologies have been used extensively within emancipatory research projects through utilising holistic and integrated approaches that enable participants to engage with deeper meaning-making processes (Kara, 2020). This

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effectively creates space within the research process for theory and practice to interweave (Leavy, 2021). Using these approaches, methods that would help generate a robust set of responses to each of the three questions and resulting themes were foregrounded.

I initially drew up a list of semi-structured questions for an intended focus group discussion and feedback at the end of the workshops, however, these questions were organically answered through the creative and reflective design of the workshop series. Through this research design, participant responses shifted from what would have been purely conversational (as expected within a standard focus group) to engaged and expressive - the “answers to my questions” were transformed into participants doing, being, reflecting, writing, drawing, joyful conversation, humour, and connection. Essentially, the creative and reflective design and methods for the workshops were paramount in generating a high quality of responses that cannot possibly be quantified for their value and engagement.

Each research workshop focused on one of the three specific questions and resultant themes. The themes organically resulted from the three specific research questions for the study - the workshops, therefore, were designed to *revive*, *apply*, and *celebrate* indigenous, faith, and/or cultural environmental literacies across the three research sites. When designing the workshops, I drew up a draft set of intended inquiries for each theme which guided the range of chosen methods for the workshops. The table (Table 2) below details the research questions, resulting themes, and intents of inquiry for each workshop in the series.

Table 3 Research questions, workshop themes, and intents of inquiry.

<i>Themes</i>	<i>Research Questions</i>	<i>Intent of Inquiry for Participants</i>
Revive	How can individuals be facilitated to <i>revive</i> ITELs and what is demonstrated through this process?	<ul style="list-style-type: none"> - to reflect on the wisdom of our ancestors, connect with ITELs and their related philosophies - to reflect on participants' relationality with each other and wider the natural world - to explore the concept of interconnectedness through creative art-making processes - to reflect on deep ethical relationships with the lands we inhabit that encompass the material and the spiritual - to engage in conversations around cultural imperialism and (neo)colonised environmental literacies - to appreciate the concepts of the natural world as a trust (<i>amaanah</i>) and our roles as stewards of the earth (<i>khalifah</i>) - to express ourselves through art, reflective conversations, and writing

Apply	How can individuals be facilitated to <i>apply</i> ITELs and what is demonstrated through this process?	<ul style="list-style-type: none"> - to identify a community-based sustainability issue and address it collectively - to use an ITEL approach to problem solve for identified sustainability issues - to facilitate participants to engage in conversations beyond sustainability and towards regeneration - to engage in discussions about resources and barriers to implementing ITELs and overcoming these barriers
Celebrate	How can individuals be facilitated to <i>celebrate</i> ITELs and what is demonstrated through this process?	<ul style="list-style-type: none"> - to attempt a celebration of ITELs in the present moment and contemporary context of the environmental crisis - to facilitate embodied expression in response to ITELs, as a non-verbal modality, for participants to communicate their responses - sharing of artefacts representing participants' personal connections with the natural world - making Celtic knots to take home as reminders of our interconnectedness - sharing workshop reflections and participants' feedback of the workshop experience

The intention for the workshop design was to create spaces where participants could engage in deep reflections around human-nature relationships through plural ways of knowing and being. This was facilitated through an introduction to and engagement with

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ITELs through the methods chosen for the research workshops, enabling participants to use these perspectives to reflect on their relationships with the natural world. The introduction to ITELs was facilitated through slide decks that highlighted some key indigenous and traditional environmental literacies (ITELs) from across geographies and time, and which foregrounded material and spiritual relationships with the natural world. The slide decks (see Appendix F) were used as prompts for reflective discussions and highlighted some of the common principles and practices around human-nature relationality. These principles and practices included but were not limited to: the concept of community as it represents the greater community of beings on earth; deep consciousness of and care for the earth; understandings related to the cyclical nature of life on earth; the perception of nature as sacred, and the deeper material and spiritual connections between human and non-human life and forms on earth and beyond. The ITELs introduced within the slide decks were chosen with an awareness of and to reflect these common principles and practices. They were intended to enable crucial discussions on these subjects and more than material connections with the natural world in the context of the wider challenges posed by the environmental crisis.

When designing the workshops, I intended for the workshop activities and processes to enable engagement with the heart and spirit - connecting us through our shared experiences, enabling us to respond with resilience to the environmental crisis and its challenges, but with a sense of compassion for ourselves and others. The research workshops were designed to build upon each other, to inspire hope and confidence in taking action, and encourage belief in the possibility of a regenerative future when it is co-created within communities big or small, at macro and micro levels, with an appreciation that every little intention and action truly matters.

These intentions interweave with the decolonial and pluriversal theoretical framework for the study and inform the range of methods used for the research workshops. Participants were facilitated to create warm and friendly spaces where conversations could be easily generated and flow naturally. Across the sites, these co-created workshop spaces enabled the research process and methods, encouraging reflections, conversations, problem-solving, and expressions of personal connections with the natural world.

The data generation process can be understood and illustrated through a metaphorical visualisation of water sources from diverse origins coming together to form rivers and seas,

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which then finally flow into the ocean, the largest body of water on earth. A diverse set of people from different cultures, heritages, and backgrounds stream together possessing their own set of learned, explored, and embodied philosophies and literacies bringing them as valuable offerings to be shared within the workshop spaces. These streams of knowledges interact with the multiple rivers of methods, flowing and combining to create the three seas of *revive*, *apply* and *celebrate*. The seas combine and eventually flow into the pluriversal data ocean, holding all of these sources of water or literacies together, and which is felt, experienced, inferred, or analysed within the next chapters using the theoretical lens of the study.

The decolonial approach may be further understood through the flow of rip currents. A rip current is defined as “a strong usually narrow surface current flowing outward from a shore that results from the return flow of waves and wind-driven water” (Webster, 2025). Rip currents may also be understood as localised currents of water, which in the context of the study, evoke local acts of resistance against colonised, extractivist perspectives around human-nature relationships, and a “return flow of waves and wind-driven water” or movement towards the greater ocean, away from shallow perspectives, representing deeper (see Deep Ecology section within the next chapter), holistic, pluriversal perspectives and literacies around human-nature relationality. Water as a life-giving natural source also serves as a metaphor for the revival of indigenous and traditional environmental literacies (ITELs) through collective resistance and action. It is fluid and malleable, but possesses the power to erode solid rock, and is extremely powerful in its collective form as evidenced through the formation of massive, powerful waves. The attempt to *revive*, *apply*, and *celebrate* ITELs may then be understood as a contribution to the growing collective resistance against colonial, imperial, extractivist thinking and practices as these relate to human-human and human-nature relationalities.

In the sections that follow, I explain and elaborate on the methods used for the three themed research workshops of *revive*, *apply*, and *celebrate*, first for the initial two sites, the Woodlands Community Development Trust (WCDT) and the University of Glasgow (UofG) in Scotland, followed by details of the condensed workshop for the third site of the Sustainable Futures Global Network (SFGN) symposium in Malawi.

4.2.1 Meditative Practice for Openings and Closings

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Each workshop commenced with short meditations to help ground participants in the present moment and serve as openings for the research activities. There is no dearth of empirical literature detailing the innumerable benefits of mindfulness practices and meditation. Meditation even if practiced for a brief period of time has been evidenced to increase hope (Munoz *et al.*, 2016), reduce anxiety levels, and prevent mind wandering (Xu *et al.*, 2017) helping the mind focus on the present here and now. Being present in the workshop space to connect with each other and reflect on ITELs and human-nature relationalities was a core part of the workshops - the opening meditations provided a calm and inviting threshold to step into this space.

Mindfulness meditation with university students who are at high risk of anxiety within contemporary contexts has also been shown to significantly reduce anxiety levels (Bamber and Morpeth, 2019), which was crucial for the research workshops in order to mitigate any feelings of solastalgia that could have risen for the participants. The meditations served as gentle openings and invitations for participants to bring attention and awareness to the present moment, for greater participant focus, allowing them to connect with themselves and with each other. The practice helped set our intentions for the work we were going to engage in within the shared spaces, creating a sense of calm and grounded awareness which was imperative for us to connect with each other.

The opening meditations were followed by warm-up activities that enabled participants to ease into the workshop space and initiate conversations through engagement with each other and/or with the subject matter of the workshop. These involved getting to know each other, greeting each participant with their native greeting, writing about participants' favourite aspects of/in the natural world, and asking environmentally related questions that were responded to by a neighbouring participant in the circle. The details of these activities and workshop prompts can be found in Appendix E (On-the-day workshop plans).

As a closing activity to summarise the participatory workshop activities and discussions, each workshop concluded with participants being invited to take a few moments to breathe and check in with themselves, and/or speak briefly about what that they were taking away from the shared time and workshop spaces. This allowed them to reflect on their experiences of being in the teaching and learning spaces we had co-created. The openings and closings served to scaffold the workshop activities for participants, facilitating greater

presence of heart and mind to allow for deeper engagement with the subject of the workshops.

4.2.2 At the WCDT and UofG in Scotland

The workshops in Scotland, as detailed above, were facilitated at established places of learning; a community organisation, at the Woodlands Community Development Trust (WCDT), and a higher education institution, at the University of Glasgow (UofG). The arts-based inquiry within the workshops used, what are commonly perceived as, Celtic patterns for data generation. The Celts were one of the ancient peoples inhabiting Western and Central Europe including the land now known as Scotland, with a rich history and perspectives on human-nature relationships (Powell, 1983; Maier, 2003; Cunliffe, 2018). Celtic art and culture is still alive in Scotland, visible through Celtic inspired art, jewellery, design, and symbolism, however, people resident here or visiting may or may not readily draw understandings from it about the natural world and our relationships with it. As the focus of the *revive* workshops was to reconnect and engage with ITELs from around the world and the places we were situated in, it felt pertinent to highlight ITELs from the Celtic tradition and to use Celtic patterns for the arts-based inquiry. The patterns captured the essence of the workshops to reflect on the interconnectedness between human and non-human beings and forms within the natural world and encouraged reflections on the various meanings and interpretations attributed to the patterns over time.

4.2.2.1 Revive – Workshop 1

a. Reflective Discussions

The focus of the first workshop was to *revive* ITELs within the collective space. This was achieved through discussions prompted by sharing a range of ITELs from across geographies and time with underlying connections and similarities. This included text and visuals through a slide deck with prompts in between for participants to reflect on the information and share their own thoughts, ideas, and impressions. The prompts were open ended allowing participants the liberty to share whatever came up for them. This organically led to discussions where individuals responded to the prompts and to each other, carrying the conversations forward. The slide deck for the introduction to ITELs (see Appendix F) included but was not limited to: similarities across ITELs that relate to

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human-nature relationality; art and symbolism from ancient cultures relating to the natural world; the significance of the circle and the earth's rhythms; sacred geometry; fractals as they show up within life on earth and beyond; cymatics (sacred geometry and patterns within sound waves when they are made visible); and a brief overview of Celtic patterns and knots representing the various meanings of interconnectedness, oneness, and infinity as they have been interpreted throughout the ages.

Reflective discussions and responses have been prompted within established qualitative methods through in-depth interviews (IDIs) with individuals, and focus group discussions (FGDs) with groups to elicit participant understandings, views, and perceptions around the subject matters under discussion (Liamputtong, 2020). Reflective discussion sessions were utilised specifically within the *revive* workshop, not as a substitute for a FGD, but as a prompt to elicit conversational responses to the ITELs being introduced. Instead of a direct question, participants were prompted to reflect on and discuss their responses within the group. This participatory approach allowed the workshop participants to take the lead and guide conversations, with my role as facilitator to step in only to redirect conversation when it deviated from the intended research inquiry. Reflection, as discussed within the previous chapter, is also an integral part of the Islamic tradition with an active encouragement to reflect on the deeper meanings of life on earth, specifically through reflecting on the very existence of the natural world and the rhythms within. The practices of *tafakkur* (reflection) and *tadabbur* (deep contemplation) are strongly recommended for the development of *muraaqabah* (self-awareness) and *muhaasaba* (self-accountability).

Similar practices of reflection and meditation can be evidenced across a range of indigenous and traditional practices and spiritual traditions recommended for personal and spiritual growth and refinement. Contemplative practice has also been evidenced to have profound implications for learning and has been perceived as a “quiet revolution” taking place within HEIs through “integrating somatic, emotional, and mental experience”, enhancing “emotional wellbeing, and creativity”, fostering skills for “self-awareness, tolerating intellectual and emotional ambiguity, embracing diversity, civic discourse, and collaborative action” (Litfin, 2020, p. 57), all crucial for the exploration of ITELs with diverse participants within workshop spaces that intended to *revive*, *apply*, and *celebrate* these literacies.

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The reflective discussion sessions were used as a method to explore participants' thoughts, reflections, and openness to ITELs specifically in the context of the environmental crisis. Participants were prompted to share their thoughts and reflections that came up for them while the slide deck for the introduction to ITELs was being shared. They were also encouraged to respond to and/or comment on their peers' thoughts and reflections. The method was used to allow for and enable rich dialogue and discussion between the diversity of participants, which is then analysed for participant openness towards and engagement with ITELs. At the end of the introduction to ITELs, participants were also prompted to share thoughts and reflections on why ITELs were not part of mainstream discussions on sustainability. The prompt was used to allow reflections on some of the reasons behind the lack of ITEL visibility within contemporary, mainstream sustainability narratives and organically led to discussions around colonialism, imperialism, capitalism, and their impacts on mainstream perceptions of ITELs.

b. The Garden Walk. The Park Circle that Didn't Happen

At the WCDT, the reflective discussion session was followed by a walk in the community garden. The group of participants was invited to take small note pads and pens/pencils, and take a leisurely walk around the garden. They were prompted to note down any reflections they had or anything else that came up for them while engaging with what they observed in the community garden space. The activity served to situate people in an outdoor area with the soil and plants, after talking *about nature* in an enclosed space. The objective was to facilitate connections with the soil, earth, and nature we had around us in the moment and write, draw, or share thoughts after the ITEL focused reflective discussion session. It started raining while we were in the community garden and we had some light conversation under umbrellas about the kinds of plants around us, the process of growing plants in the community garden, and the connections people were making to these plants after the discussions we had just engaged in.

A similar activity was planned for the *revive* workshop at UofG, to sit in a circle in Kelvingrove Park (which could be viewed outside the window of the room we were in) and write or share thoughts and impressions after the reflective discussion session. The weather, however, turned out to be especially stormy and windy during the time window where the park circle was supposed to be facilitated. Consequently, instead of heading out

we had a tea break and continued with the rich reflective discussions in response to the ITTEL focused slide deck.

c. Arts-based Creative Inquiry

The reflective discussions (and garden walk at the WCDT) were followed by an arts-based inquiry where participants had to draw/paint in a Celtic pattern responding to the question – “what connects the human and non-human in nature?”. The arts-based inquiry is a significant part of the *revive* workshops and the *revive* sections of the SFGN iteration (see next section). Arts-based inquiry is an established practice within qualitative and post-qualitative approaches to research, foregrounding participatory methods that allow for an articulation of the invisible (Kara *et al.*, 2021) and how individuals experience and make sense of the world (Mannay, 2015). The arts as a medium can convey profound meaning and depth of experience that is often difficult to translate into words or spoken language. Both at the WCDT and the UofG, participants were facilitated to engage with arts-based creative practice and either share reflections about the practice or respond to the research prompts through the medium. The inquiry elicited participant responses through visual methods (Pauwels and Mannay, 2020) that were able to represent incredible depth and richness of meaning, crucial to expressing material *and* spiritual relationalities with the natural world, which would otherwise have been impossible to articulate clearly through language only.

At the WCDT, the arts-based inquiry was an individual activity where participants were guided to first draw the interconnected Celtic patterns and then paint, draw and/or write within them. Water colours, felt tip pens, oil pastels, and colouring pencils were used for the artwork including options to use coloured paper and magazines for collaging if the participants wished to use these. The focus was on the drawing of the Celtic patterns and allow for reflections and meanings that emerged for participants through drawing the intertwined strands as they represented the interconnectedness of life and creation on earth and beyond. Participants were free to choose the pattern they wanted to work on, reflecting and sharing their thoughts about the process through ongoing conversations as they continued to draw, paint, and/or write into the patterns within the group.

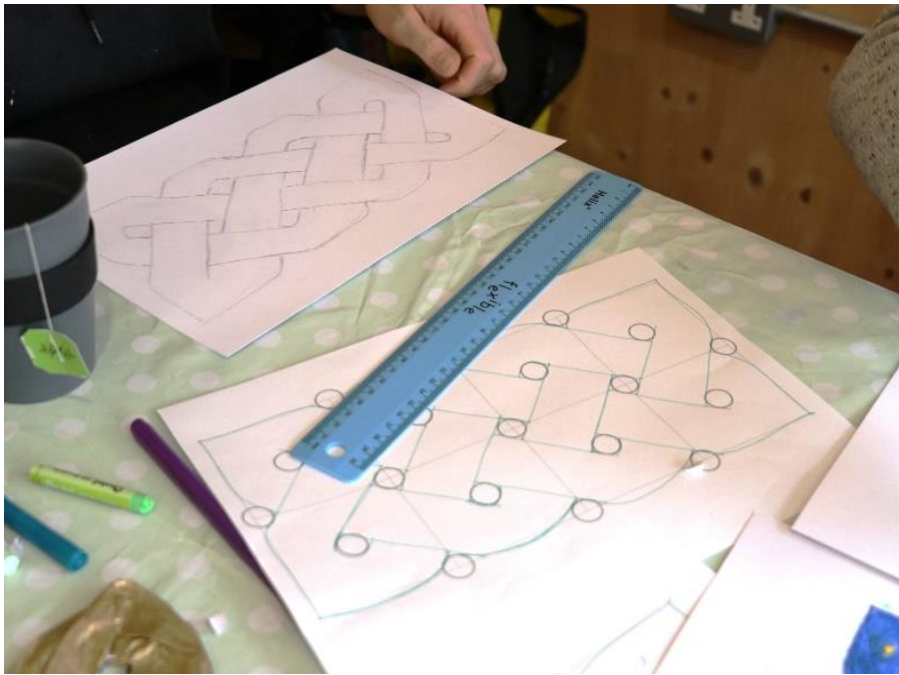


Figure 7 WCDT: Drawing intertwined Celtic patterns.

At the UofG, this was a collective activity where a 6-strand Celtic pattern was pre-printed onto organic cotton canvas and each strand was divided into two, making 12 sections for the 12 participants to paint in and respond to the question prompt (Figure 9 and 10). Non-toxic, washable, poster paint was chosen as the safest and most sustainable medium available. Participants painted their responses onto the intertwined knots on the Celtic pattern, their hands working on it collectively amidst lively conversation and discussion, creating a collective artefact together with and in community. Around half of the participants who were ready to paint their responses worked on the canvas first, while the other half were engaged in conversation to decide on their response and representation through their chosen strand on the Celtic knot. As participants completed their work on the canvas, they either stayed around the art table to continue with ongoing conversations or others replaced them to paint into their chosen strands. Each participant shared brief thoughts on what they were painting in addition to making short notes about what their artwork represented. The strands and corresponding notes were numbered and named to keep track of participant responses for subsequent analysis.

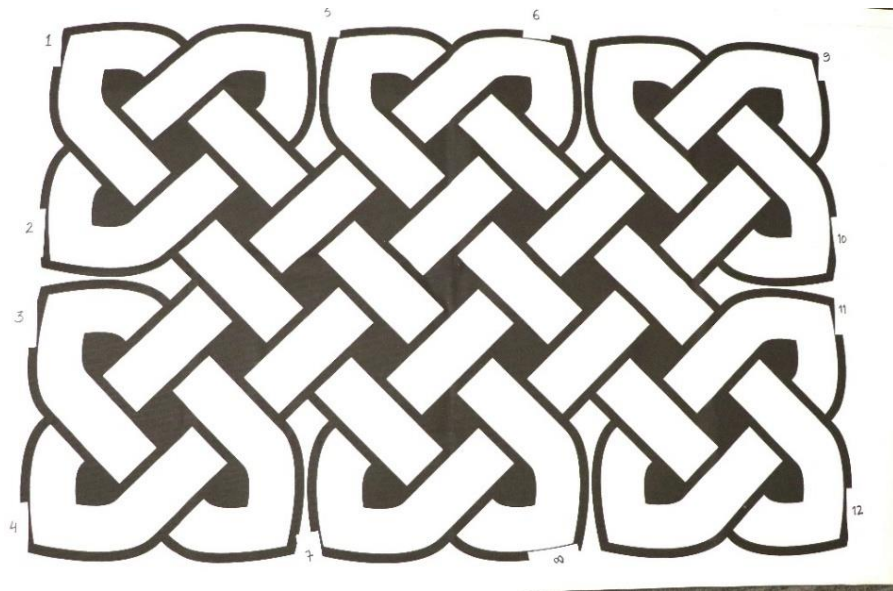


Figure 8 UofG: Celtic knot with 12 numbered strands



Figure 9 UofG: Celtic knot on canvas ready to be worked on.

The question prompt also served to open space for participants to express what they had absorbed from the reflections and discussions through art and the power of visuals (Sullivan, 2008; Leavy, 2021). What was the participants' version of what connected us all in nature? How could they express this through art and explain what came up for them in that moment? What conversations did this lead to while working side by side on paper/canvas with others? These questions informed the observations that I was engaged in as a researcher, simultaneously facilitating the arts-based inquiry and ongoing conversations through the activity. The aim of the inquiry was to explore the facilitation of

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reviving ITELs in the short period of time and shared spaces we were in, and investigate what was demonstrated through this process. In essence, we attempted to create an enclosed circle of sorts, a receptacle in time and space, where individual and collective participation in the arts-based inquiry led to an exploration and revival of ITELs in the contemporary context of the environmental crisis, where otherwise most of these literacies have been marginalised in favour of reductive, extractivist interpretations of the natural world.

4.2.2.2 Apply – Workshop 2

The *apply* workshops were designed to facilitate the application of ITELs to contemporary sustainability issues. As detailed previously, it is imperative to note that participants were not required to choose specific indigenous or traditional literacies to apply them for problem solving. Rather, they were prompted to use the underlying common principles that we had reflected on and discussed within the *revive* workshops, including but not limited to concepts of community, deep environmental consciousness and care, hope, resilience, cyclical understandings of life on earth, the interconnectedness of life forms, holistic perceptions of the human-nature relationship and so on. Participants therefore drew from our previous reflections and discussions, but also from prior personal knowledge and awareness around ITELs that reflected these principles.

Many indigenous traditions prioritise community and communal problem solving specifically in times of crisis. This is evident through practices traditional communities engaged in when they experienced, for instance, lack of rain or drought in pre-modern agricultural societies heavily dependent on rain for food and well-being, both for themselves and their livestock. Communal gatherings to address this often involve song and dance to invoke nature, deities, or spirits to bring forth rain and, therefore, relief and sustenance to the affected community. A similar practice is evidenced within the Islamic tradition (an ITEL itself), however, the focus is on communal prayer specifically for rain or other challenges the community may be facing. The intention behind both practices seems to be similar – encouraging the coming together of people affected by a crisis where they understand each other's struggle, and find relief from psychological, emotional, and physical distress through collective action, validation of each other's struggles, and feeling supported in times of crisis.

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The *apply* workshops, therefore, built on the *revive* workshops and used methods that allowed participants to come together in community as they reflected on and addressed sustainability challenges through an ITEL approach, in the context of the environmental crisis. As the workshops at the WCDT were walk-in for community members, they were not attended by the same participants every week. Some participants attended all three workshops in the series, however, for those who had not been to the *revive* workshop, a recap of the workshop and a brief introduction to ITELs was shared so participants could draw from these and use an ITEL approach for the Ketso problem solving.

A brief recap was also shared at the UofG iteration where the same participants attended all three workshops, including a reflective discussion around shallow and deep ecology and its implications for problem solving for contemporary sustainability challenges. At the WCDT, four participants worked in a single group and problem solved for a regenerative and sustainable community, choosing four different aspects or challenges within the community to work on. At the UofG, 11 participants (1 could not attend due to being unwell) formed two groups, with each group choosing to address a sustainability challenge they had decided to work on within the group. At both sites, the WCDT and the UofG, participants were facilitated to respond to their chosen sustainability issues through ongoing dialogue and the use of Ketso charts as detailed below.

a. Problem Solving with Ketso

Ketso is a visual mind mapping tool developed to be utilised for problem-solving with communities. The name literally means “action” in Sesotho language used in Lesotho, a country surrounded by South Africa (Ketso, 2024). Ketso has been successfully used as a knowledge and data generation tool within a wide range of settings including educational spaces and community building using participatory methods (Bates, 2016; Wengel, McIntosh and Cockburn-Wootten, 2019). As a visual toolkit, Ketso allows for information and ideas to be written down and displayed including the connections between them. Knowledge is visually shared, read, and develops in real time with each added “leaf” or idea from a participant. Every participant is empowered to make their contribution, enabling active dialogue, collaboration, and a participatory approach to teaching, learning and research.

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The Ketso kit includes a large felt chart that is used as a base for mapping ideas over the course of a discussion or problem solving activity (Figure 13). It comes with a set of tools including various coloured “leaves” that represent the different stages of the problem-solving process. The kit including the leaves is reusable and the markers use washable ink, allowing it to be reused indefinitely. The leaves can be attached and removed from the felt base to link and show connections as they emerge.



Figure 10 UofG: Participants working on a Ketso felt chart with reusable "leaves".

The process begins with identifying the problem the group is going to address or work on. This is followed by a series of steps identifying and noting down: what is already in place or is going well on the brown leaves that represent the soil; new ideas on green leaves that represent new shoots or growth; challenges on grey leaves representing clouds and rain; solutions on green leaves again representing new growth after the rain; and finally the goals or next steps on yellow leaves representing the sun that drives new growth (Figure 14) (Ketso, 2024).



Figure 11 Ketso - leaf colours representing the steps (from the Ketso website).

This process may be repeated several times as needed, to arrive at specific goals or solutions for an identified challenge(s) the community is facing. At the WCDDT and UofG, however, the process was facilitated once as the aim of the inquiry was simply to engage participants in exploring, discussing, and applying an ITTEL approach to problem solving instead of arriving at specific solutions that they needed to implement.

4.2.2.3 Celebrate – Workshop 3

The *celebrate* workshops were designed to facilitate participants to celebrate ITTELs within the workshop space and allow for closing reflections for participants and feedback for the series of workshops. At the WCDDT, this was facilitated through a Sharing Circle and a Celtic knot making activity, and at the UofG through a Sharing Circle, embodied expression and responses to ITTELs, and writing and sharing farewell postcards.

a. Sharing Circles

The Sharing Circles were the primary method used to facilitate participants to celebrate ITTELs within the workshop space. Reflections, discussions, and sharing stories within a group arranged in a circle allows participants to face each other for meaningful connection

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and better communication. There is no dearth of literature related to the practice of using circles within schools, universities and other educational settings for a myriad of purposes including teaching and learning, poetry and collaborative work (Ahmadian, Maftoon and Birjandi, 2021; Athans, 2021; Cho and Chen, 2023).

Participants at both the WCDT and UofG were requested to bring artefacts that represented their relationship with the natural world to share within the Sharing Circle. The artefacts, however, needed to have a connection with the participants' own or another indigenous, faith, and/or cultural tradition that resonated with them. These artefacts could be photos, poems, stories, anecdotes, art, memories, song, clothing, or anything else from their experiences or upbringing that connected them to the natural world, with musical instruments being encouraged. Participants were facilitated to share these artefacts within the circle as a way of celebrating their personal connections to the natural world through ITELs and allowing for an acknowledgement and honouring of each other's (chosen) traditions. Both at the WCDT and the UofG, the Sharing Circle signified the importance of the circle within ancient traditions across the world and allowed for the artefacts to be treated as offerings for others to engage with and derive meaning from.

b. Celtic Knots

At the WCDT, the Sharing Circle was followed by a Celtic knot weaving activity. Participants were guided to make Celtic knots by weaving together multi-coloured strands to facilitate reflections on the intertwining pattern and its possible meanings as a celebration of Celtic culture in Scotland. As an arts practice, this allowed them to work with their hands and appreciate how the cords came together to form repeating patterns representing interconnectedness, while being in conversation with each other. The knots participants attempted to make were taken home as keepsakes and instructions were shared for them to access later if they wished to continue with the weaving activity after the workshop. As a creative method, this generated data through participant conversations and reflections while simultaneously connecting participants with the place-based indigenous literacy of knot making, effectively celebrating it in the process.

c. Embodied Expression and Closing Questions

At the UofG, in addition to the Sharing Circle, embodied expressions were utilised as a method to elicit participant responses towards ITELs. Words and language as a medium often leave a void when it comes to fully expressing thoughts, emotions, and impressions. As a closing activity for the 12-person cohort that attended the three workshops, participants were facilitated to embody their responses to ITELs as they had engaged with them within the workshop space. The embodied expressions were used to articulate and elucidate participants' thoughts and feelings beyond what could be expressed with words and language, allowing for creative, sensory, and somatic expression (Perry and Medina, 2011).

Physical embodiment and performance can be intimidating and uncomfortable for many students within HEIs especially if they are used to conventional desk based classroom structures for teaching and learning. After the initial meditation that helped ground participants within the workshop space, participants were prompted to take a few moments to reflect on their feelings, reactions, and receptivity towards ITELs. Following this, to enable them to embody their responses to ITELs, a chair was placed in the centre of the room to physically represent the ITELs we had engaged with throughout the workshop series. Participants were then facilitated to express their responses and reactions to the physicality of the chair and the meanings it represented for them. I walked around the room embodying examples of varying responses in relation to the chair - facing towards, with my back towards it, pushing it away, embracing it, observing or questioning it and so on. Participants were then guided to experiment with embodying their own responses, and similar to image theatre (Boal, 1994), holding or "freezing" themselves in the position or act that represented their response most accurately.

Using embodied expressions as a method helped visualise for the participants and for myself their individual and collective disposition to ITELs as expressed through their bodies, in addition to words, adding another layer of expression and method of eliciting participant responses to my research question. As participants settled into and held their embodied expressions, they were invited to observe each other's embodied responses, followed by further explaining their embodied articulation through words and language. As we came to the end of the series of workshops, still sitting in a circle, participants were asked to respond to a follow up "closing question" to elicit their experience of being within

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the workshop spaces we had co-created and any feedback they wished to share. This allowed for a closure of the workshop space and participant feedback for the next iteration of workshops within and outside the research project.

d. Farewell Postcards

At the UofG, the final activity for the third workshop involved the writing of postcards that were written by each participant for their peers and placed on a table. These were then randomly taken by another participant to find a message of farewell from one of their peers. Each postcard had images of species from the natural world from around Britain printed on one side (Figure 15). Participants were first asked to pick the postcard with the print of the species they liked. Only after they had chosen their postcard, it was shared that it would be for another participant to take away, as a gesture of offering what they liked to another human being.

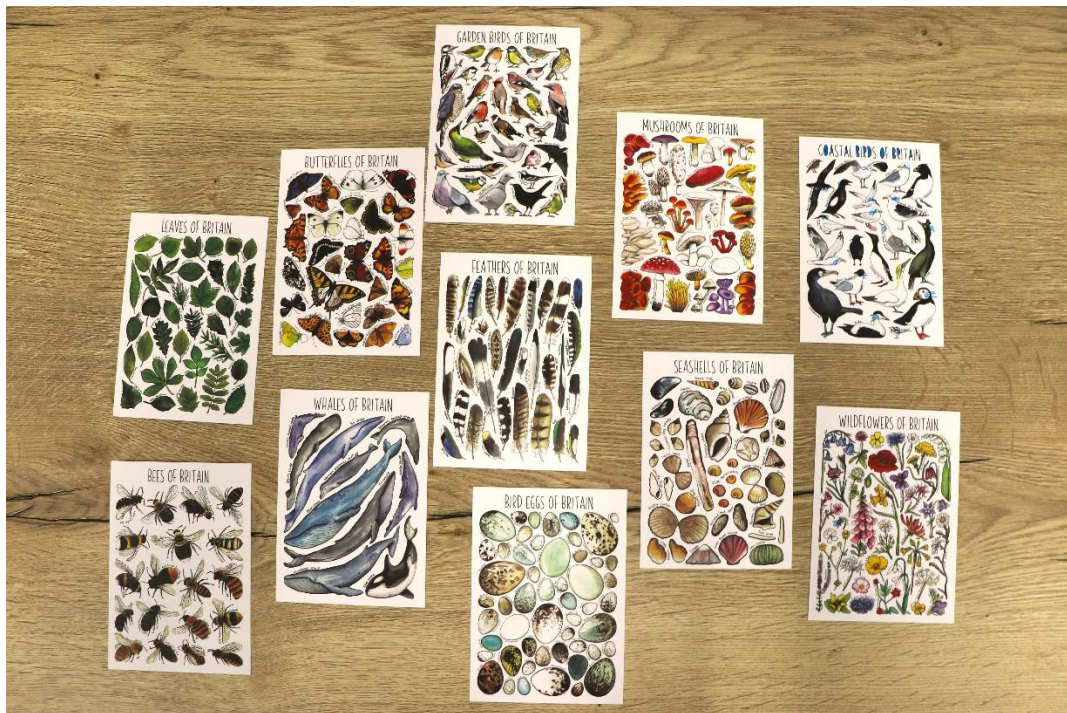


Figure 12 UofG: Farewell postcards.

The prompt was to write a message from their hearts to the people they had shared time and space with every week. The filled postcards were once again laid out on the table, with everyone picking a postcard of their choice (except for the one they had themselves written) to find a message addressed to them by one of their peers in the group. The postcards allowed each individual to reflect on their connections with each other and the

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teaching and learning that had taken place within the co-created workshop spaces, providing insights into participants' experiences of the workshops. The method was also chosen for its effectiveness as a medium to share farewell messages, a keepsake from the time we had spent together, and a reminder of what the collective discussions and work had inspired within each participant, in the hope that it could ignite possibilities for an ITEL inspired design, idea, solution or revival in the spaces they inhabited in the days to come.

4.2.3 At the SFGN Symposium in Malawi

The African part of the fieldwork with members of the Sustainable Futures Global Network (SFGN) during the symposium in Malawi was an adaptation of the workshops facilitated in Scotland, and essentially an adaptation of the workshops that would have taken place with university students in Uganda, as originally planned. Instead of three separate workshops, each specific question and resultant theme was addressed through a condensed two-hour workshop during the symposium. This condensed workshop had a focus on wider central/southern African ITELs, and tribal patterns were used for the arts-based inquiry reflecting the culture and literacies of the place. As with previous workshops, a conversational, relaxed, and warm atmosphere was maintained throughout the workshop, allowing participants to feel comfortable to share from their life experiences, knowledges, and literacies.

Similar to the series of workshops in Scotland, we initiated this iteration of the workshop with a grounding meditation and closed with sharing takeaways from our time spent together. A shorter version of the slide deck used in the original workshops was utilised to facilitate initial reflections and discussions around ITELs in an attempt to *revive* them within the workshop space. This was followed by a prompt to reflect on ideas, solutions, and/or practices that would allow practices within the biennial symposium to be more sustainable and regenerative. Participants formed two groups and discussed ideas for “problem solving” through conversation, writing these down on sticky notes, in an attempt to *apply* an ITEL approach to problem solving. The notes were read by both groups with participants sharing their thoughts about the written ideas through ongoing dialogue and conversation.

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Following this, a Sharing Circle similar to the previous two sites was facilitated for participants to share their stories of connection to the natural world through their own or another indigenous, faith, and/or cultural tradition. As this was a walk-in workshop, participants had not been previously requested to bring artefacts for the Sharing Circle. Therefore, the artefacts they shared were stories, anecdotes, memories, quotes from scripture, and family traditions that they had reflected on within the workshop space and decided to share as representations of their connections to the natural world through ITELs. This constituted the *celebrate* section of the condensed workshop and was followed by the arts-based inquiry as the concluding activity. As with previous workshops, participants were prompted to paint their responses to “what connects the human and non-human in nature?”, however, for the SFGN iteration this was on pre-printed A4 sized tribal African patterns or a map of the African continent. As participants painted and expressed themselves through their art, they were prompted to describe their art through brief written descriptions, and verbally share a single word representing what they were taking away from the workshop activities and space we had shared together.

The methods within the research workshops were utilised to respond to each of the three specific questions of the study, which in turn responded to the main question for the research inquiry. The sections above detailed the chosen methods for each of the workshops and their intended outputs that contributed to the data generated for this study. The sections that follow present brief vignettes of the workshops spaces, followed by details of the process of analysis for data generated from across the three research sites, and finally the ethical considerations taken into account before, during, and after the research process.

4.3 Vignettes

This section introduces the reader to the workshop spaces through a series of brief vignettes of the spaces co-created across the three research sites. The workshops were designed to be spaces of participatory, creative, and reflective activity that enabled us to learn from and with each other’s cultures, traditions, literacies, and lived experiences. As such, for me as the researcher and facilitator who was often also a participant in the activities, the spaces reflect a sense of warmth, connection, and openness which has been imperative to the conversations we were able to have within them.

4.3.1 The Community Garden and Meeting Room at the WCDT

The Woodlands Community Development Trust (WCDT), as detailed earlier within this chapter, has a community garden and meeting room on its premises. The workshops at the WCDT mainly took place inside the community meeting room. Participants, who were community members, in the first of these three workshops arrived straight after a woodland walk with their facilitators who also participated in the workshop activities.

As soon as people started arriving, we began setting up the tables, the projector, tea and snacks, with mugs and a kettle from the small, attached, kitchenette all the while continuing with their conversations from the woodland walk. The atmosphere already had a community feel to it; it was conversational, open yet respectful, light yet conducive to reflection and serious discussion. We spent some time in the community garden, reflecting on some of the workshop prompts, a few of us with warm drinks under umbrellas to keep us dry from the light rain. The surrounding plants and flowers made for a calming, reflective, atmosphere and fed into discussions on more than material connections with the natural world.



Figure 13 Inside the community meeting room at the WCDT.

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Across the workshops, community members (who were all from England or Scotland with the exception of one from Australia) came from a diversity of backgrounds and experiences. In contrast to the student participants at the university, this was a comparatively older group of people. The reflective and participatory activities over tea and snacks created warm, conversational, spaces scaffolding discussions of resistance and difficult feelings that naturally arose when addressing the environmental crisis. Participants laughed at messing up their Celtic knot-making and shared memories and stories from their childhood creating a sense of simply being present and engaged with the conversations and activities. The settled demeanour of the community members and the quietness of the surrounding area created a calm and relaxing atmosphere where we could share our reflections at length, and which enabled meaningful connections with each other.

Although I entered these co-created spaces, especially the first workshop, with anxious feelings about how the activities would pan out and “completing” them on time, I always left with gratitude for a heart full of stories, reflections, and emotions shared within our circles of conversation.

4.3.2 Within Concrete and Glass at the UofG

The workshops at the University of Glasgow (UofG) took place within two buildings, the first one in a moderately sized classroom in the School of Education (SoE), and the other two in a slightly smaller, partially glass walled room in the Advanced Research Centre (ARC) which looks out on a pedestrian lane and an under repair Victorian era building. The participants were a diverse set of students studying a range of subjects across the university (chemistry, law, community development, sustainability, human rights etc.) and from a range of cultures (German, Indian, Italian, Mexican, English, Scottish, Bulgarian, Polish, Cypriot). The same participants were invited to attend all three workshops leading to an increasing sense of camaraderie as the workshops progressed.

The first workshop in the series took place on a particularly stormy and windy day which prevented us from going out for the planned park circle activity in Kelvingrove Park, situated right next to the university building we were in. We were, however, content to stay inside the warm room and take an extended break halfway through the workshop getting to know each other better over hot tea and refreshments. We sat in a circle for the first half, gathered around tables for reflective discussions close to the projector screen. The

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discussions were imbued with a fieriness and agency reflected in the participants' frustrations with existing capitalist, extractivist socio-economic structures and slow process of change. They also enabled students to engage meaningfully with each other's experiences, thoughts, and cultures - by the time they began working together on the art canvas during the second half of the workshop, they were already in deep conversation about the workshop topics interwoven with current happenings in their student life.



Figure 14 After the Sharing Circle at the UofG.

The next two workshops at the ARC had an increasing sense of “flow”; conversations, ideas, humour, laughter, frustrations, stories, and emotions all seemed to naturally flow within the space and circles we sat in. This is reflected from participants' quotes (see Chapters 5, 6, and 7) that mention how important the conversations were for them and the “sense of community” they felt they had created. Addressing sustainability challenges and personal struggles with their peers created a sense of familiarity and understanding leading to a lively and active atmosphere with passionate ideas and discussions, however, always with an awareness and consideration of other's views. We huddled in circles around the physical artefacts shared by participants within the Sharing Circle, hanging on to their stories and anecdotes, “wowing” their artwork, asking more about a participant's trip to Sri Lanka where she first began considering spiritual connections and so on. The postcard writing, one of the last activities within the third workshop, was an especially affective moment. With local instrumental folk music playing in the background, noisy conversation

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and humour, participants sat and stood across the space, moving around to look for coloured pens they wanted to use or chat with others and see what they had been writing, immersed in the moment. As the last workshop drew to a close, we hugged and said our goodbyes, thanking each other for the brief but impactful time we had the opportunity to spend together.

4.3.3 Ufulu Gardens in Lilongwe

The condensed workshop in Malawi took place within a large conference room in Ufulu Gardens on a warm, sunny day in Lilongwe. Participants were all members of the Sustainable Futures Global Network (SFGN) like myself; most of us had worked or conversed with at least a few others in the room (in person or remotely) prior to the 5-day symposium during which the workshop was facilitated. The prior familiarity and engagement in activities of the previous day meant that we all had a sense of comfort within the workshop space. This was an intergenerational group with SFGN members having travelled to Lilongwe from South Africa, India, Uganda, Germany, Kenya, Eswatini, and Nigeria.



Figure 15 During the arts-based inquiry at the SFGN.

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We sat again in a circle with participants sharing, stories, memories, and deep connections with the natural world before getting up and moving around the room for group work. The atmosphere was informal and conversational, and everyone was really happy to meet other members and collectively convene in person for the symposium for the first time after the pandemic. Despite the time pressure due to the scheduling of events, the atmosphere was relaxed. Everyone took their time to elaborate on stories and traditions from their culture which were received with interest and engagement - we were getting lost in the stories, prolonging our discussions. This celebratory feeling of meeting each other in person was amplified when a participant started playing local music during the arts-based inquiry towards the end of the workshop, with some of the participants standing and painting while moving to the music. These moments of connection and sharing within the SFGN workshop were crucial to generating insights into intergenerational dialogue and action for co-creating sustainable and regenerative presents and futures.

4.4 Analysis

The analysis of data generated from this research inquiry is guided by the decolonial and pluriversal theoretical lens of the study. The theoretical spaces of ecopedagogy, deep ecology, and Islamic environmentalism intertwine to form the lens through which I “see” the data to make meaning, experience connections and constellations as they emerge, and use the process of analysis to respond to the research questions of this inquiry. As detailed within the above sections, a range of methods was used to generate multimodal data across the three research sites including art, dialogue, conversations, embodied expressions, artefacts, reflective discussions, and Ketso charts. The following table (Table 3) details the data generated from across the research sites and key occurrences or “happenings” that the data is analysed for.

Table 4 Types of data generated and subsequent analysis.

<i>Methods</i>	<i>Data Generated</i>	<i>Analysed for...</i>
<i>Meditative practice</i>	<ul style="list-style-type: none"> - Participant observation - Photos 	Participant openness to the practice.
<i>Warm up activities</i>	<ul style="list-style-type: none"> - Participants' written reflections and questions - Participant dialogue (audio recording) 	Participants' engagement with the prompts, openness to and engagement with ITELs.
<i>Reflective discussions</i>	<ul style="list-style-type: none"> - Participant reflections and discussion (audio recording) - Photos 	Participant openness to and engagement with ITELs, reviving ITELs.
<i>Garden walk</i>	<ul style="list-style-type: none"> - Participant reflections and conversation (audio recording) 	Participant openness to and engagement with ITELs, reviving ITELs.
<i>Arts-based inquiry</i>	<ul style="list-style-type: none"> - Artwork and art canvas + written notes - Participant dialogue (audio recording) - Photos 	Participant engagement with ITELs and deeper material and spiritual aspects of human-nature relationalities, reviving ITELs.
<i>Problem-solving with Ketso/written notes from SFGN</i>	<ul style="list-style-type: none"> - Ketso charts - Participant responses and dialogue (audio recording) 	Participants' attempt to use an ITEL approach to problem solving.

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	<ul style="list-style-type: none"> - Photos 	
<i>Sharing Circle</i>	<ul style="list-style-type: none"> - Participant artefacts - Participant dialogue (audio recording) - Photos 	Participants' connections with the natural world and their chosen ITELs, celebrating ITELs.
<i>Celtic knots</i>	<ul style="list-style-type: none"> - Participant dialogue (audio recording) - Photos 	Participant engagement with ITELs and the process of knot making, reviving ITELs.
<i>Embodied expression</i>	<ul style="list-style-type: none"> - Participant responses through embodiment - Participant dialogue (audio recording) - Photos 	Participant openness to and engagement with ITELs, reviving/celebrating ITELs.
<i>Farewell postcards, closing questions</i>	<ul style="list-style-type: none"> - Participant writing - Photos 	Participant engagement with and feedback for the workshop, takeaways, engagement with ITELs.
<i>All of the above</i>	<ul style="list-style-type: none"> - Participant observation - Field notes 	All of the above.

The process of analysis commenced organically while I was first discussing the workshops with the event manager at the WCDT, with the first responses to my workshop invitation from students at the UofG, and while facilitating the workshops at the WCDT, UofG, and

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the SGFN symposium. As the researcher, I was immersed within the data from the outset of initial conversations leading to the research workshops and research encounters with my participants. The analysis was, is, and continues to be an ever-evolving, ongoing process of thought, meaning making, and “philosophising” through the theoretical paradigm designed for the study. I was already thinking with theory when I was in the “field” (Jackson and Mazzei, 2023), simultaneously engaged with the analysis of the pluriversal data ocean (see section 4.2 *Research Workshops and Methods*) as it was emerging, expanding, and moving fluidly into different shapes and forms, and as it was fed by the seas of reviving, applying, and celebrating ITELs from across the research sites.

This ongoing analysis continues while I type these words, signifying the limitless connections, constellations, insights, and intertwined meanings that keep emerging after the research project is “complete”, like ongoing, endless wave formations in the ocean. However, for the purposes of this thesis, I will highlight three recognised methods of analysis; a combination of collaging, writing, and reading texts with theory (Barad, 2014; Murris and Bozalek, 2019) that was utilised to derive findings and respond to the research questions for the inquiry. The analysis, however, is not limited to these methods per se, due to the ongoing meaning making process where insights and connections between data emerged at times when I was out for a walk, reading an article, talking to a friend about the importance of community or simply going about my day. Richardson and Pierre (2008) recognise these instances and processes of meaning making including feelings, dreams, and somatic responses that feed into the process of analysis and eventually become the words that make up the data and subsequent analysis. These processes are organic, natural, and ongoing for humans as we move through our days and life itself feeling, thinking, and understanding our experiences through layers of insight and meaning that build upon each other over time, and similarly lend themselves to any analytical research process we might be engaged in.

Consequently, as a researcher immersed within the data generated from my study, the analysis resulted from both consciously chosen methods and subconsciously processed information and iterative meaning making, even when I was not actively engaged with the data in the present moment (St. Pierre and Jackson, 2014). So, although this section presents a discussion around the “systematic” consideration of data for the reader to follow through and make sense of the generated data and findings, my observations above highlight the very *unsystematic*, fluid, entangled, intertwined, imperfect, and messy



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process that reflects the lived reality and experience of inferring meaning from a set of pluriversal data (Outhwaite, P. Turner and Law, 2007). I, therefore, present an explanation of the methods used for the analysis knowing and making transparent the reality that it captures at best snapshots of moments and stretches of time within the wider entangled and complex meaning making process.

4.4.1 Collating Data into Streams

Data generated were first collated as streams (see Table 4 below) coming together to inform and respond to the research questions for this inquiry. These streams of data flowed from the range of methods from across the three research sites and were separated into three folders containing the audio files, observations and field notes, and photos from each site. The audio files were transcribed using Descript software and manually edited for clarity removing and correcting typos and transcription mistakes. Participant names were used within the transcripts, but these have been removed for the reporting of findings from the study.

Table 5 Data streams and analysis.

<i>Data from Research Sites</i>	WCDT (3 themed workshops)	UofG (3 themed workshops)	SFGN (1 condensed workshop)
	<div>  <i>Separated into</i>  </div>		
<i>Workshop Themes</i>	Revive	Apply	Celebrate
<i>Multimodal Data</i>	<ul style="list-style-type: none"> Printed transcripts Photos Artwork + written notes Participants' written responses Field notes/observation 	<ul style="list-style-type: none"> Printed transcripts Photos Ketso charts Participants' written responses Field notes/observation 	<ul style="list-style-type: none"> Printed transcripts Photos Artefacts (verbal + material) Postcards Field notes/observation
<i>Analysis Methods</i>	Collaging, writing, reading (<i>including "reading" of multimodal data and thinking with theory</i>)		
<i>Analysed for significance to...</i>	<ul style="list-style-type: none"> research questions. teaching and learning of environmental literacies. theoretical lens of the inquiry. 		

Using the table above, data from the three research sites was separated based on each workshop theme of *revive*, *apply*, and *celebrate*. Subsequently, the data from each themed workshop was read and analysed together with data from the corresponding workshop (or workshop section) at the other sites: data from the *revive* workshops (and the *revive* section

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at the SFGN symposium) was pooled together and analysed collectively. The data from each of the three workshop themes, therefore, feeds into the three seas of *revive*, *apply*, and *celebrate*. Each theme or “sea” of data was analysed collectively and forms the three findings and analysis chapters that follow this chapter.

This does not mean that ITELs were revived, applied, and celebrated strictly within the confines of each corresponding workshop, rather there were instances and elements of reviving, applying, and celebrating indigenous and traditional environmental literacies (ITELs) across the three research workshops (or workshop sections at the SFGN). The distinction is only made for purposes of guiding the reader through the process of analysis and representing data through a clear, linear format for the thesis. The process of analysis and writing, however, was iterative, cyclical, and entangled with thought, emotion, memory, and the very human experience of meaning making.

After collating data into three themes corresponding with the three workshops at the WCDT, UofG, and workshop sections at the SFGN symposium, data from each theme was analysed for its significance to the research questions, the teaching and learning of environmental literacies, and the theoretical paradigm of the study.

4.4.2 Collaging, Writing, and Reading

As detailed above, the three mediums of collaging, writing, and reading (Augustine, 2014) were used as practices and processes to navigate the pluriversal data ocean, simultaneously making meaning through the theoretical lens of the study. As the researcher, I immersed myself into the always shifting and flowing waters of this fluid set of data, and the three themes or seas of *revive*, *apply*, and *celebrate* - deeply interacting, fully experiencing, and making meaning through them. This meaning making involved reading and re-reading sections of the transcripts, using my lens to simultaneously “see” photos of the workshop activities, postcards, artefacts from the Sharing Circle, Ketso charts and the embodiment exercise in addition to the participant artwork on canvas and paper. Reading and seeing data while thinking with my theoretical lens using diffractive reading (Barad, 2014) allowed for an emergence of layers of meaning, and rich constellations of thought intertwined and interweaving across the three workshop themes and research sites.

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As St. Pierre and Jackson (2014) note, it is difficult to *write* about or *explain* thinking with theory due to the impossible task of capturing complex intertwined, interconnected thought and metacognition (Moon, 2006), and translating it into language in a linear written format. Using Deleuze's (1987) concept of the rhizome that can branch out in unpredictable directions open to new links and emergence of assemblages, they also highlight the experimental and non-replicable nature of the analytical process which organically occurs "everywhere and all the time" (St. Pierre and Jackson, 2014, p. 717). Reading my data with theory this way, therefore, allowed both the data and the theory to be enriched by the other, intensifying connections and entanglements between myself, my data, and my theoretical lens leading to new insights and meaning making through experiencing what MacLure (2013, p. 228) calls the "*wonder of data*". Data was read diffractively through the three theoretical spaces (ecopedagogy, deep ecology, and Islamic environmentalism), simultaneously, engaging with the different aspects and insights that each of these three spaces highlighted and the patterns of difference that opened up new understandings and connections (Barad, 2014).

The dataset that I was reading using my theoretical lens included: text in the form of transcripts, participant artwork and writings on canvas and paper, my observations, and photos of the rest of the workshop activities. As detailed above, the complete dataset was first collated in separate folders for each research site, followed by separating and collating data from each research workshop theme, from each of the three research sites. Therefore, when analysing and making meaning from the *revive* workshops, I was collectively reading transcripts, participant artwork and writings, my observations, and photos from both the *revive* workshops at the WCDT and UofG, and the *revive* section of the SFGN workshop. The transcripts from *revive* were printed and collected together. The artworks from the *revive* workshops/section and participants' written descriptions were similarly collated and displayed together for the "reading" of data. And a selection of photos from *revive* were collaged together with participant's written responses to the workshop activities.

The collaging allowed for a rich visualisation of data, aiding the process of analysis by juxtaposing visual and handwritten data with participants' artworks and workshop transcripts, thereby forming an assemblage arising from the different streams of data from the *revive* workshops. Collaging may be used in many different ways as a method of analysis and meaning making (Holbrook and Pourchier, 2014; Yuen, 2016), especially for

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multimodal data generated through a range of methods. For the process of my analysis, I used collaging as a means to display multimodal data together, essentially creating a collage or forming assemblages, for each of the three themes of *revive*, *apply*, and *celebrate*, allowing for an integrated, intertwined experience of inference and meaning making. Participant photos selected from the *revive* workshops, therefore, were displayed together, as were participant writings from the workshops. The photos were selected to represent the tone of the workshop, participant engagement, and visualise the process of the workshop *after* it had taken place (see figures below).

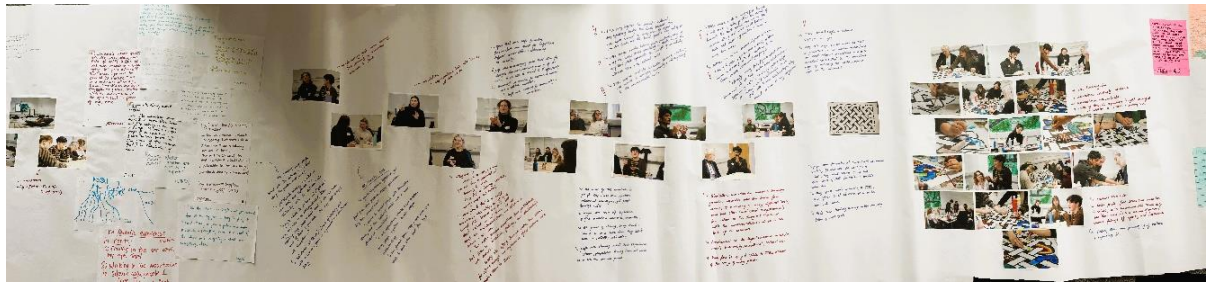


Figure 16 An extended collage.

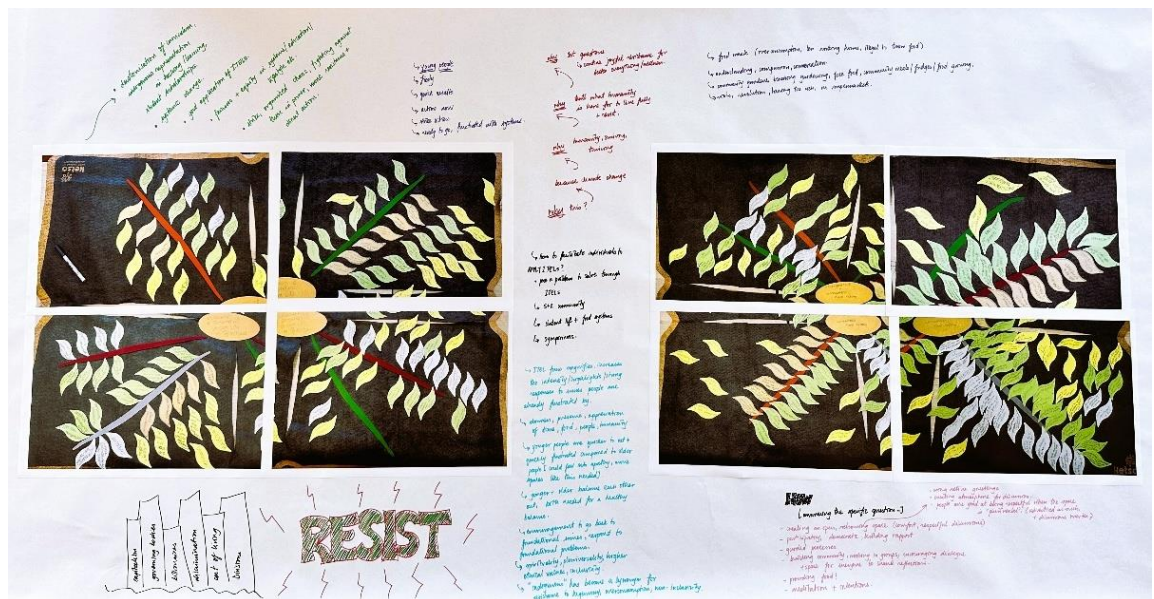


Figure 17 A collage made from photos of Ketso charts.

[illegible]

These collages were explored, read, and analysed together with the participant artwork and audio transcriptions from the *revive* workshops. All the elements of this multimodal dataset interacted with each other informing my process of meaning making, or as Holbrook and Pouchier (2014, p. 754) note, the “interplay (between these) becomes our thinking”. Using collaging as a method of analysis, therefore, provided me with “an exposure” (Springgay, 2008. p. 160) of meaning, enabling crucial insights and pathways into further inquiry instead of fixed answers to my research questions, because as Holbrook and Pouchier (2014) importantly highlight, “collages are exposures and not answers, they are always one of many—multiple and ongoing as long as we continue to inquire” (p. 761). Consequently, as I “read” through my multimodal data, I continued to highlight, scribble, and actively inquire diary entries/observations, quotes and occurrences within the transcripts, and ideas and insights from the visual data, based on their significance to the research questions, teaching and learning of environmental literacies, and the theoretical spaces that make up the lens of this research inquiry. The process was repeated for data generated from the *apply* and *celebrate* workshops (and workshops sections) across the research sites.

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embodiment exercise, Sharing Circle artefacts, farewell postcards, Ketso charts, and Celtic knot making, including selected photos that captured the physical space, tone, and process of the workshops. The reading of multimodal data, including transcripts, collages, and artwork from across the research sites was done through thinking with theory, using diffractive reading to draw insights through the lenses of ecopedagogy, deep ecology, and Islamic environmentalism (IE) (Jackson and Mazzei, 2023). These readings took place parallel to writing my way through the emerging insights, connections, and constellations to articulate the findings evolving from the process (Augustine, 2014). The writing involved highlighting and scribbling down insights, observations of significance, writing notes across collages to make connections, conceptual maps, writing in the margins of transcripts, writing comments on the digital transcripts on the Descript software, and writing and updating draft summaries of each themed research workshop in the form of lists and paragraphs (St Pierre and Adams, 2015; Douglas-Jones, 2021; Richard and Helen, 2021).

As I made my way through these pluriversal, multimodal, fluid waters of data, I was not only reading, writing, and analysing for how ITELs were revived, applied, and celebrated within the workshop spaces, but also for what was demonstrated in the process of facilitating the workshop activities. Through this work of analysis, I collated written summaries of each research workshop from across the research sites under the three themes of *revive*, *apply*, and *celebrate*, highlighting significant quotes, occurrences, and happenings. Connections and constellations as they emerged between the three themes were also highlighted and written down. Findings with similarities and connections that emerged through the process of collaging, writing, and reading were grouped together, and read and analysed with and through theory.

This work fed into the writing and re-writing of drafts for the findings chapters, continuing with writing as a method of analysis until the final drafts were complete. As Mia (one half of my supervisory team) likes to remind me, “...*you find your way through the data with your writing*”. Writing not only helped me draw crucial insights and connections leading me to the ongoing findings from my research inquiry, but also facilitated me to understand and discover how best to articulate and represent my findings in written format (St Pierre and Adams, 2015; Richard and Helen, 2021). The three chapters of *revive*, *apply*, and *celebrate* that follow this chapter explore and discuss these findings in the context of teaching and learning for sustainability through the theoretical lens of the research inquiry.

4.5 A note on facilitating, researching, and analysing the workshops

As the researcher, I am both the facilitator and analyser of the research workshops which were co-created spaces of data and knowledge generation. This section presents a reflexive discussion about my dual role as facilitator and researcher. Across the three sites, the research participants were individuals who had varying degrees of interest in environmental sustainability, community, and indigenous and traditional environmental literacies (ITELs). This can be evidenced through participants' dialogue, artefacts, and artwork - although these were responses to the prompts designed for the workshops, many of these data sources reflect a striking affinity towards and knowledge of various ITELs (see upcoming chapters).

My intention for the workshops was to co-create spaces where we could get to know each other's cultures and traditions and the environmental literacies embedded within. I attempted to facilitate spaces of open, respectful conversation and exploration to make this possible. The art materials and Ketso charts were used as canvases of expression through art and writing to articulate participants' responses through different modalities, making it easier to express complex and/or conflicting thoughts and emotions. Throughout the data generation, I was specifically interested in participant's interactions with the ITELs presented within the workshops (through the processes of reviving, applying, and celebrating) and those that they shared from their own lives and cultures. My investigation, therefore, was focused on participant engagement with and the impact of using ITELs for sustainability education within a participatory, creative, space without the rigid structures of a formal curriculum.

Consequently, I wanted the atmosphere to be informal and conversational and attempted to facilitate this through offerings of tea, fruit, and snacks and a welcoming, open, and friendly demeanour throughout the research spaces. Participants were also sent basic guidelines for respectful interaction and disagreements within a multicultural space (through email) prior to the workshops. Across the sites, I ensured that the research participants felt comfortable to share dissonances with any of the ITELs or with anything that came up within the reflective discussions and group work, however, with consideration for the other person's experiences. This was part of the research design, specifically within prompts for reflective discussions which were designed to elicit

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thoughts, ideas, and comments on ITELs, participants were explicitly asked to share their resonances and dissonances.

Facilitating the co-creation of research spaces this way seems to have allowed for more honest participant responses, moments of connection, and validation from peers (see Chapters 6 and 7). It also served to flatten possible power hierarchies that could have risen in a more conservative researcher-researched dynamic. For instance, most participants at the WCDT were unaware that I was based as a researcher at a university, they perceived me simply as another individual facilitating a workshop for the WCDT community through their regular programming. Similarly, I was another student among the student participants at the UofG; the workshop invitation explicitly stated that we were going to be learning with and from each other. Even though I was perceived as the researcher facilitating the various activities, I ensured that the student participants (including one other PhD student) voiced their opinions by explicitly stating and making space for discussions to share our perspectives even when they were incongruent with others'. We also seemed to be in collective solidarity as students who wanted change and greater socio-environmental sustainability in our lives, but who were often negatively impacted by the power structures surrounding us whether it was the university, the politics of fossil fuel/plastic use, the normalisation of food waste etc. At the SFGN workshop iteration, likewise, I was a member of the organisation like each of my research participants and the research workshop, much like the rest of the events during the symposium, was facilitated to be a place of mutual learning and discussion.

These dynamics actively enabled circles of discussion and dialogue even when there were dissonances that arose to certain particularities that were discussed, brought up, or shared (see also *A note on openness and dissonance* in Chapter 7: *Celebrate*). Discomfort and negotiation was shaped by the nature of the space: dissonances with Christianity, with ITELs, with aspects of deep ecology or with others' comments or thoughts were processed through dialogue and understanding to communicate multiple perspectives or disagree respectfully. The embodiment exercise, similarly, reveals both an openness to ITELs and for some a reluctance to deeper engagement with and their use in everyday life (see *Embodied expression: articulating responses to ITELs* in Chapter 7: *Celebrate*).

The workshops were designed to enable multi-modal expression; visual, emotional, verbal, written, and somatic/embodied expression was encouraged and facilitated within different

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activities even though verbal expression formed the greater part of activities and discussions. This ensured each participant could express themselves through multiple modalities and could possibly be one of the reasons why a number of them could clearly communicate spiritual connections with the natural world. Non-verbal modes of expression were almost always accompanied by verbal dialogue: participants talking about and writing brief descriptions of their artwork or verbally articulating their embodiment added another layer of meaning to their responses. Similarly, I discussed the various meanings attached to Celtic patterns and the reasons for using these within our arts-based inquiry, which was to reflect on the intertwined and interconnected nature of life on earth. The tribal art patterns and map of the African continent for the arts-based inquiry in Malawi represented both tradition and culture originating from the wider African continent and was explicitly communicated with the workshop participants.

Across the research sites and throughout the workshops, I was aware of my role in holding the space together and guiding ongoing conversations and activities. As the facilitator, I only stepped in to redirect conversations when they veered off topic and to conclude sessions to move on to the next activity. I also intervened to point out, for instance, positive developments in the context of sustainability within group discussions, specifically at the UofG iteration, when student participants would begin to feel frustrated during the Ketso problem solving or express dismay at issues such as continued food waste or (neo)colonial power structures. During the embodiment exercise, for example, I guided participation through various embodied stances of both openness and resistance to ITELs and let participants take ample time to figure out their embodied responses to hold them in place to be recorded through photos. I was, therefore, both guiding the flow of activities and making space for participants to fill in the gaps of my research inquiry with responses originating from *their* knowledges, literacies, and experiences. I influenced the nature of the space, discussions, and interactions by foregrounding an exploration of ITELs, the core focus of my research inquiry, through the various methods used (Sharing Circles, reflective discussions, writing postcards etc.). However, through these intentionally designed methods, I opened up spaces of deliberate reflection, dialogue, and conversation where we could listen to each other. This is evident from a participant quote (see in Chapter 7: *Celebrate*), where during a discussion a participant shares, “*This is what we were saying, it just feels like everyone actually wants to listen here.*” This sentiment was not a coincidence; it was a byproduct of the decolonial and pluriversal approaches used to design

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the research encounters and which created a strong ethical ground for the interpretation of research data.

Most research encounters within qualitative studies are both framed and analysed by the researcher, with exceptions such as ethnography that may rely on observations only. Traditional qualitative studies have often also been critiqued for extraction of data from research subjects and using interpretive and analytic methods and processes separate from the theoretical underpinnings of the work (Mazzei, 2021; St.Pierre, 2021). I attempted, therefore, to design and implement a novel theoretical framework with a postqualitative approach for a decolonial, pluriversal and, consequently, strong ethical framework for the design, responsible data generation, and interpretation of this research inquiry. The analysis and interpretation are, therefore, not separate from the data generation and constitute an ongoing process of meaning making that extends far beyond the completion of this PhD thesis. My personal experiences and values (as discussed in Chapter 1: *Introduction*) played a vital role in choosing and designing the theoretical framework which guides and underpins the design and analysis of the research encounters within this inquiry. Due to my experiences and intellectual interests, I am deeply invested in decolonial and pluriversal approaches and have a strong interest in material and spiritual connections with the natural world and how cultures across the world create, express, and nurture these connections. These interests have clearly guided both the nature of this inquiry (centring the diversity of cultures and investigating the environmental literacies embedded within), the data generation (decolonial, pluriversal, creative methods), and the ongoing process of analysis (embodied, relational, centring participant expression).

Relationality has been core to both the theoretical framework and subject matter of this thesis: being deeply engaged in relational ways of thinking and being as a researcher, data analysis becomes a conscious, ethical decision. When I am analysing data consciously and/or subconsciously, it is an embodied and relational process grounded in an emancipatory, deeply ethical framework (see next section below) and relational to my participants, my community of practice (supervisors, mentors, and colleagues), and scholarly work that underpins the importance of foregrounding participant voice and a robust theoretical framework (Leavy, 2021; St. Pierre, 2021a). My dual roles of facilitator and researcher, therefore, responsibly and ethically interweave throughout the workshop spaces and contribute to the layered nature of meaning making in this participatory and creative research inquiry.

4.6 Ethical Considerations

The ethical considerations for this inquiry draw from Deleuze's concept of immanent ethics (Jun and Smith, 2011; Lorraine, 2012) and Barad's ethico-onto-epistemology (Barad, 2007), where ethics is an ongoing, contextual, inter-relational, entangled process and is inseparable from the onto-epistemology of knowledge generation. Encompassing these is an Islamic ethics of care or *ikhlaaq* within the research encounters of the study that emphasises deep care, concern and just encounters with all of creation, human and non-human (Nasr *et al.*, 2015; Gade, 2019, 2023).

Immanent ethics, primarily associated with the work of Gilles Deleuze and Félix Guattari (Goodchild, 1996; Jun and Smith, 2011) foregrounds a practice of ethics that goes beyond fixed ethical codes and foregrounds a practical, contextual understanding of ethics that responds to ethical concerns as they arise. Within the research inquiry, ethical decisions are made not only when submitting ethical applications to an ethics committee, but engaged with as an ongoing process before, throughout, and after the data generation process based on the unique circumstances, dynamics, and relationships that arise within each research encounter.

Expanding this concept of ethics further, Barad's notion of ethico-onto-epistemology (Barad, 2014), as evident from the hyphenated use of the term, is rooted in an integrated concept of ethics where the ethical concerns for a research inquiry cannot be considered separately from its onto-epistemology. The entanglement of the human and the non-human rejects the idea of an isolated ethics, prioritising ethical responsibility from the onset of conceptualising the research inquiry, such that knowledge generation itself becomes an ethical endeavour.

These concepts of ethics are contained within the concept and practice of *ikhlaaq*, an Islamic ethics of care for the *khalq* or creation itself, that foregrounds accountability, deep consciousness and care, and justice within all our encounters with human and non-human life and forms, on earth and beyond. Every interaction with creation foregrounds an awareness and consciousness of its *haqq* or rights, requiring serious accountability. *Ikhlaaq* signifies a consistent encouragement to embody kindness, compassion, and stewardship in our encounters with who/what has been entrusted to us; relationships with people, the earth, material possessions that sustain our life on earth, and so on (Nasr *et al.*, 2015).

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The encompassing practice of this ethical practice is evident from the onto-epistemology, the theoretical lens and the methods used for the research inquiry that foreground decolonial, pluriversal, and participatory approaches to data generation. Throughout the inquiry, I practiced an ongoing ethics of consciousness and care to the best of my human abilities, responding to any ethical concerns that arose during the research encounters. As with standard ethical procedures, permissions were sought from appropriate channels, including the University of Glasgow social sciences ethics committee, before contacting participants (see the *Invitation to Adults 18 and Above* section within this chapter). Written and verbal consent was obtained from participants across the research sites, in addition to consent for audio recording, photos, and video recording. Where photos and video were not consented to, these were omitted from the documenting process.

During the data generation activities, all possible care was taken to ensure the physical, emotional, and psychological well-being of the participants. This meant addressing instances of solastalgia if they arose, the occurrence of which was mitigated through the workshop design where concerns were addressed either before they arose through meditative practice and/or creating a supportive workshop environment for addressing such issues. Additionally, the workshops were consciously designed to be an inclusive place for all who had wished to participate. Workshop guidelines and basic etiquette of tolerance and respecting differing views and opinions were emailed in advance to the research participants, in addition to maintaining a safe and friendly space for everyone involved.

Inferencing: insights and meaning making with ecopedagogy, deep ecology, and Islamic environmentalism.

Inferencing: insights and meaning making with ecopedagogy, deep ecology, and Islamic environmentalism

This part of the thesis will explore and discuss findings from across the three research sites of the Woodlands Community Development Trust (WCDT), the University of Glasgow (UofG), and the Sustainable Futures Global network (SFGN) symposium, under three separate chapters titled *revive*, *apply*, and *celebrate*. As the titles suggest, the three chapters will respond to RQ1, RQ2, and RQ3 respectively. The findings will focus on the three action verbs, exploring how participants revived, applied, and celebrated indigenous and traditional environmental literacies (ITELs) within the research workshops across the three research sites. This does not mean that each of these themes were or could be confined to each specifically themed workshop; conversations, ideas, and expressions flowed freely through our activities and reflective discussions. And like the intertwined Celtic knots and tribal patterns used for the arts-based inquiry, there were naturally elements of reviving, applying, and celebrating within all three workshops, intertwined and repetitive, forming a rich tapestry of visuals, stories, artwork, and ideas.

The division of chapters therefore is only to aid clear presentation and understanding of the data and subsequent findings in written format. Making meaning of and “analysing” data is of course not a linear step by step process (St. Pierre, 2021a; St.Pierre, 2021b). We already see data with our lenses throughout the data generation process, feeling and reacting to the environment and participant responses, developing our understanding in real time. The iterative meaning making process involves incredibly rich, complex, constellations of thought and sensory memory during and after the data generation process. The chapters that follow, therefore, are interspersed with visuals and diagrams that attempt to depict the research spaces and non-linear process of meaning making by seeing data through the pluriversal theoretical space of ecopedagogy, deep ecology and Islamic environmentalism (IE). These three distinct but intertwined frameworks guide the onto-epistemological approach and subsequent understandings of the data and findings generated from this inquiry.

The findings, therefore, may be understood simultaneously through the three lenses of ecopedagogy, deep ecology, and IE, however, for reasons of conciseness and clarity, within

Inferencing: insights and meaning making with ecopedagogy, deep ecology, and Islamic environmentalism.

the chapters that follow, I have highlighted aspects of these frameworks that seemed most significant to the context and findings. Some additional layers of inquiry were also developed after the initial WCDT workshops. As a result, the chapters that follow have lengthier discussions deriving from the UofG series. The findings from the different sections of revive, apply, and celebrate from the single 2-hour SFGN workshop have also been detailed within corresponding chapters of the same name.

Translanguaging has been used throughout the following chapters when analysing findings from an IE lens (see also Chapter 3: *Theorising for Education for Sustainability and Regeneration*). The use of Arabic aligns with the decolonial and pluriversal approach of the study, allows for the lens to stay true to the language of the core texts (also used for meaning making in the Islamic tradition), and provides a wider context for the findings to be envisioned in. Arabic words are interweaved throughout the analysis with as close of a translation as possible, including footnotes providing brief descriptions of the contexts the words are used in.

It is also important to highlight that the findings demonstrate participants' engagement with some core ITEL *principles*; as participants were not prompted or restricted to using a specific ITEL literacy, their responses reflect core principles that emerge across a range of indigenous and traditional environmental literacies (ITELs). Some of these common ITEL principles considered important by the participants and that emerged across the three research workshops are the concepts and practice of interconnectedness, environmental consciousness and care, community, hope, resilience, and resistance in the context of contemporary sustainability issues and the environmental crisis.

5. Re·vive

Regain or restore to life, consciousness, or strength.

This chapter will explore and discuss findings that emerged from the facilitation of reviving indigenous and traditional environmental literacies (ITELs) across the three research sites and responds to RQ1 – how can individuals be facilitated to revive ITELs and what does this process demonstrate? It draws on data sources from the *revive* workshops at the Woodlands Community Development Trust (WCDDT) and the University of Glasgow (UoG), and the *revive* section of the condensed workshop at the Sustainable Futures Global Network (SFGN) symposium in Malawi. The data sources include audio transcripts, participants’ written responses, photos, artwork, and observations from reflective discussions, arts-based inquiry, opening meditations/activities and closing thoughts, and the garden walk at WCDDT (see also Tables 3 and 4 in Chapter 4: *Research Inquiry: design and methods*). An in-depth analysis of these data sources using the intertwined theoretical lens of ecopedagogy, deep ecology, and Islamic environmentalism (IE) reveals strong participant engagement with various aspects of ITELs, anti-colonial perspectives, human-nature interconnectedness, and spiritual connections to the natural world which contributed to “reviving” ITELs within the workshop spaces.

The analytic process of thinking with theory highlighted different facets of the dataset which contributed to the themes above. The intertwined theoretical framework, constituted of the three theoretical spaces (ecopedagogy, deep ecology, and Islamic environmentalism), interweaved with the raw data and each theoretical space served to simultaneously highlight different aspects of data through diffractive reading (Barad, 2014; Mazzei, 2021), allowing for a richer, complex understanding of how participants attempted to *revive* ITELs. The wider terrain of the intertwined theoretical lens together with my embodied and experiential understanding of the concepts within enabled me to see, read, and interpret data through these concepts. Ecopedagogy drew attention to participants’ resistance and critique of existing power structures, (neo)coloniality, and epistemic imperialism, deep ecology highlighted dialogue that reflected human-nature connections and critiques of performative sustainability (which Naess likens to shallow ecology), and IE aided my understandings of participants’ expressions of more than material connections with the natural world and to observe and capture moments of unity through diversity.

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The findings from these readings suggest that both the arts-based inquiry and reflective discussion sessions were key to reviving ITELs, enabling participants to experience a sense of unity through diversity and appreciate holistic conceptions of human-nature relationality. They also demonstrate that the reflective discussion sessions enabled critical, radical dialogue around colonialism, imperialism, and performative sustainability and evidenced participant appreciation of reviving ITELs, specifically within spaces of higher education. Participants' personal reflections further supported them to articulate deep connections with the natural world and set strong foundations for reviving ITELs. In the following sections, I explore and illustrate these findings, in particular the connecting power of ITELs, through an analysis of participant artwork, reflective discussions, and participant's personal reflections.

5.1 Exhibiting the art

This first section exhibits the complete set of artworks from the *revive* workshops from across the three sites. While interpreting this modality of generated data, I have taken into consideration participants' own descriptions of what they chose to portray through writing a word or sentence(s) and/or telling me about it, my observations, photos, and audio and video recordings from the workshops. Participants fully engaged with the arts-based inquiry across the three sites and often stayed back at the end of the workshop to complete what they were painting, suggesting that the activity was a source of creative expression and gratification resulting in a wide range of expressive ideas, thoughts, and emotions.

5.1.1 The WCDT Exhibit

This first set of artworks (Figure 19) presents drawings from the first site of the WCDT workshops that were later considered as pilots for subsequent workshop iterations. The Celtic patterns here were hand drawn by participants on pre-printed sheets with guided points to aid the formation of the pattern. The intention was to allow participants to appreciate the intertwining pattern and its relevance to the interconnectedness between human and non-human life. Participants were given a choice of materials to fill in the pattern: water paints, oil pastels, collaging paper, markers, pencils, and tissue paper. Reflections on the interweaving nature of the patterns were shared during the activity. Participants appreciated the skills required to draw the interweaving pattern, remarking on

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its meditative effects, and engaging in conversation around the origin of the patterns (see also Chapter 7: *Celebrate*), reviving indigenous ways of knowing and being in the process.



Figure 19 WCDT: Drawing the intertwining Celtic patterns. Participants were given four intertwining patterns to choose from and guided through the steps of making the pattern.

5.1.2 The UofG Exhibit

The second exhibit (Figure 20) displays the collective artwork on canvas from the second site of the UofG workshops. The arts-based inquiry enabled participants to express complex emotions and feelings through their art. Working simultaneously on the canvas also provided collective validation and support for participant's feelings, in addition to a visual representation of the interconnected nature of their artistic expression and thought.

The arts-based inquiry, in addition to the reflective discussions, was key to reviving ITELs within the workshop space (see next section of this chapter). Within this section, I discuss participant's description of their own artwork with a brief analysis and overview of the complete artwork on canvas. The Celtic pattern on canvas was divided into a total of 12 strands for the 12 workshop participants. The blank strand (Strand 5) represents a participant who was unable to attend the first workshop, and as such has been left blank to represent the infinite possibilities for expressing the interconnectedness between ideas, thoughts, ITELs, humans, and the natural world.

Strand 1 reflects the interconnection between trees and plants in a forest represented by a network of mycelium that runs beneath the forest floor. The participant was inspired by a documentary on mushrooms she had recently watched and chose to respond to the prompt by drawing and representing a mycelium network that brings individual plants in a forest together – a metaphor for the interconnections between human and non-human creation on earth and beyond. Strand 8 represents the continuous growth of human and non-human life as the common denominator that connects us all. Strand 2 portrays the participant's personal connection to and depiction of different bodies of water, representing how water connects us through its very quality of supporting life on earth and beyond. This may also be analysed as a metaphor for all bodies of water eventually flowing into one ocean, thereby, interconnecting water from different sources, springs, rivers, seas, rain and so on.

Strand 3 depicts the interconnection of spirit, pointing to the spirit that animates all life and life forms on earth. Strand 6 depicts another participant's rendition of a mycelium network evidencing how participants deeply engaged with the concept of interconnectedness across human and non-human life on earth, as portrayed through ITELs, and chose to represent these connections as they show up within the natural world itself. Strand 4 portrays life and energy (see next section of this chapter) as the elements that connect us all the way down to atomic particles. Strand 7 portrays a rainbow as the product of the seemingly disparate

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elements of the sun and rain coming together to form a beautiful phenomenon. The participant used her artwork as a metaphor for the coming together of people, knowledges, cultures, humanity and literacies for greater understanding and collaboration.

Strand 9 represents the participant's personal connection to the physical forms (trees) of the natural world and how these connect and bring people together. The participant wanted to portray how the natural world itself creates interconnections between human and non-human life. Strand 12 is the participant's symbolisation of the strong emotions we feel when conversing with other people in spaces focused on socio-environmental sustainability and regeneration. The participant wanted to express how these emotions, that often run very strong, still serve to bring us together and connect us. Strand 10 represents grey areas that overcome the stark black and white binaries of humans and nature and represents hope in realising our deeper relationalities with the natural world. And finally, Strand 11 portrays what the participant simply termed as "*tessellations*", which may be analysed as a metaphor for human and non-human beings and forms tessellating in infinite interconnected patterns or relationalities.

The collective canvas is a greater representation of the interconnected, interdisciplinary, pluriversal, and decolonial space, work, and ideas that we were able to engage with during the workshop in an attempt to revive indigenous and traditional environmental literacies. It demonstrates deep participant engagement with the principles of interconnectedness, as one of the core literacies evidenced across the range of ITELs, and as it has been portrayed through participant's understandings of the concept through their artwork on a correspondingly interconnected and intertwined pattern.

This core literacy was highlighted during the workshop activities to enable participants to reflect on deeper human-nature relationalities that surpass boundaries between humans and nature and contemplate on our intertwined relationship with the natural world. And as the canvas portrays, participants revived this literacy through reflections and artistic expression that encompassed both physical and spiritual interconnectedness, represented though everything from mycelium networks to our emotions, from our spirit to subatomic particles, water, and the phenomenon of the rainbow.



Figure 20 UofG: Participant's collective artwork on canvas, portraying an intertwined Celtic pattern and 12 numbered strands.

5.1.3 The SFGN Exhibit

The third set of artwork presents paintings and drawings from the third site of the SFGN symposium and showcases participant artwork on tribal patterns and the larger encompassing map of the African continent. Participants revived the concept of interconnectedness by painting their responses to the prompt for the arts-based inquiry representing; emotions of hope, geometrical patterns, playfulness within nature, and the numerous elements of the natural world that allow for a deeper appreciation of the interconnections between human and non-human life and creation on earth and beyond.



Figure 21 SFGN: Participant artwork on individual card sheets in response to the prompt, "what connects the human and non-human in nature?".

5.2 Arts-based inquiry and reflective discussions

Both the arts-based inquiry and reflective discussion sessions were key to reviving ITEs, allowing participants to experience a sense of unity through diversity and share reflections around holistic conceptions of human-nature relationality. The concept of unity through diversity (see Chapter 3: *Theorising for Education for Sustainability and Regeneration*) is evidenced across a range of indigenous, faith and cultural traditions, and signifies the common threads that bring us together as living beings sharing the same planet, emphasising that human-human and human-nature relationalities are enriched through plurality and diversity. The facilitation of these activities was enabled through opening meditations, personal reflections on participants' connections with the natural world, and foregrounding ITEs with their diversity, interdisciplinarity, and common threads of human-nature relationality.

5.2.1 Human-nature relationalities

During the reflective discussion session at UofG, a participant with an interest in Buddhism reflected on some of its core teachings around interconnectivity and interdependence. She elaborated on the depth of this interdependence and pointed to the potential of embodying this consciousness,

“...the interdependence between not just me and nature, but me and everyone else in this room and my ancestors and everything. And when you have that conscious awareness every day, you naturally become an environmentalist because you naturally care about those things.”

Another participant who had worked on a farm with sheep, feeding and shearing them, clipping their hooves and so on, shared how her experience had connected her deeply to not just the animals she was taking care of but also to the wider natural world. She had started *“thinking about it [the sheep] as a live thing, not just as this kind of object”*. She further expressed that *“a relationship with animals changes also your relationship with everything else in nature”*, which from an Islamic environmentalism (IE) and deep ecology perspective is an affirmation of shared existence, resulting in a natural inclination to preserve that existence. Both the above reflections point to the participants' understandings

of interconnectivity and interdependence as they had experienced it, whether through the teachings of Buddhism or caring for sheep on a farm resulting in deeper relationships with them, and by extension the wider natural world. In both instances, there was a felt experience and appreciation of deeper human-human and human-nature relationalities that surpassed time (interconnections with ancestors) and the physical separation of life forms (relationships with animals). The reflective discussions allowed for an exploration of these themes, effectively reviving ancient indigenous, faith, and/or cultural literacies as they related to the wider natural world.

The introduction to ITELs used to prompt reflective discussions also included the use and images of *mandalas* to depict the circular patterns and rhythms of life and death on earth (see also Chapter 4: *Research Inquiry: design and methods*). In response to these ITELs embedded within the practice of mandala making, a student participant (with Indian heritage) shared how some cultural traditions within India also involved making *rangoli* (a circular pattern similar to mandalas) through drawing a continuous line on the ground every day. This was wiped clean to be replaced with another pattern the next day, signifying that nothing is permanent and that the “...*the only constant is that it’s changing.*” This idea of impermanence evokes IE principles of the cyclical and impermanent nature of life and nature itself, emphasising the trajectories of life shared between humans and the wider natural environment: all physical life and forms of creation are impermanent and go through cycles of existence and non-existence contributing to the ever changing but constant presence of life on earth.

A participant with Mexican heritage similarly highlighted the ancient indigenous practice of building structures in accordance with the changing rhythms of nature. This was in response to the introduction to ITELs and contributed to the ongoing discussion around human-nature relationality. She cited Chichén Itzá (an archaeological site and ancient city built by the Maya people, in current day Mexico) and the pyramid with the feathered serpent (also known as the Temple of Kukulcan). She reflected on how the temple is thought to represent a solar calendar, where sunlight during the two (spring and autumn) equinoxes produces illusions of the serpent descending the pyramid, emphasising the integrated relationship ancient civilisations had with the seasons and their natural surroundings. These reflections not only served to connect participants to ITELs from places of their heritage but also revived indigenous and cultural literacies within the

workshop space, allowing us all to learn with each other, and make connections across the plurality and diversity of these wisdoms and traditions.



Figure 22: SFGN participants painting their responses.

A community participant at the SFGN shared how their faith allowed for an understanding of the utter dependence of humans on and the complete self-sufficiency of the natural world.

“And unlike us humans, we face challenges when our life is in trouble, we always run to nature to restore us. But nature does not run to us. Nature has the capacity to regenerate itself. [...] we have a lot of things that we need to learn from nature, nature can teach us, but unfortunately, we may not teach nature much, we can only manipulate it to get what we want. [...] And that connectivity stems for some of us who are Christians from the story of creation, because nature was put before us, God created nature first before He created man. And therefore, man was meant to depend on nature, but not, nature to depend on man. [...] That even if we may say our relationship is symbiotic in nature, but that symbiosis is not equal, because nature offers much more to us than we offer to it.”

This participant drew on literacies from his faith and expanded on them to create a deeper understanding of human-nature relationality that removes us from human-centric and ego-centric perceptions of our relationship with the natural world. The reflection is humbling to say the least, evoking again IE principles that urge us to “...*tread lightly on the earth*”³, in recognition of our indebtedness to and sheer dependence on the earth. The reflective discussion sessions and the ecopedagogical approach allowed participants across the sites to articulate deeper human-nature relationalities, effectively reviving ITELs in the process. Participants not only introduced themselves as the diverse people they were through their shared reflections but also connected with each other, relating to, and recognising others’ traditions and equally diverse ways of understanding deep human-nature relationalities. As an added layer, the ITEL focused reflections allowed participants to be introduced to other *peoples and tribes* across geographies and time, engaging with their philosophies and literacies, and reviving them within the shared workshop space. Participant responses shared below also evidence an appreciation, and revival, of the core ITEL concept of interconnectedness reflecting deeper human-human and human-nature relationalities.

During the reflective discussions after the WCDT community garden walk, a participant shared his thoughts on plant (and human) diversity and symbiosis,

“I was just really attracted to the diversity of the structures. This plant which maybe was like dill, yeah [...] it actually looked really fragile because it was so thin and, uh, so fine [...] obviously this plant feels safe enough to grow really, really tall, while it’s so delicate and fine. And it can cope with the wind, and whereas other shapes were so diverse, it was really beautiful to see. And that story you were sharing from the book, about how they work in symbiosis, umm...to nurture each other. Yeah. That’s exactly how we are going to nurture each other in the community as well.”

Another WCDT participant while reflecting on their garden walk noted,

³ “The true *abd* of the Most Compassionate (Allah) are those who tread lightly/humbly on the earth.” (Quran: Al-Furqan/The Criterion: 63). *Abd* in Arabic denotes the one who is in complete servitude and submission to Allah, a servitude that frees and empowers the human from serving anything else in the world, in this context capitalism, consumerism, greed and so on. The true *abd* then, in this context, are those who do not leave oppressive (carbon) footprints on the earth, because they tread lightly on it.

“I suppose it was just sort of taking me to the things that stand out to me about nature as, yep, having the quiet connection to it on your own but also where I’ve connected with other people over parts of that.”

Both reflections point towards human-human and human-nature interconnectedness, one where nature effectively teaches us about the symbiotic relationships we need and form to build communities, and the other where the very presence of the natural world becomes a source of connecting with others to form relationships and community. In both cases, participant reflections suggest that the natural environment effectively brings people together, whether through lessons on interdependence or offering itself as a place to connect with other humans. Participants also reflected on and expressed their thoughts around human-nature relationality through the arts-based inquiry, evidencing a desire for connecting with each other and the natural world across plurality and diversity. The following work on canvas (Figure 23) depicts a strand of the larger Celtic knot that participants collectively painted on and depicts this participant’s sentiments about human-nature relationships.

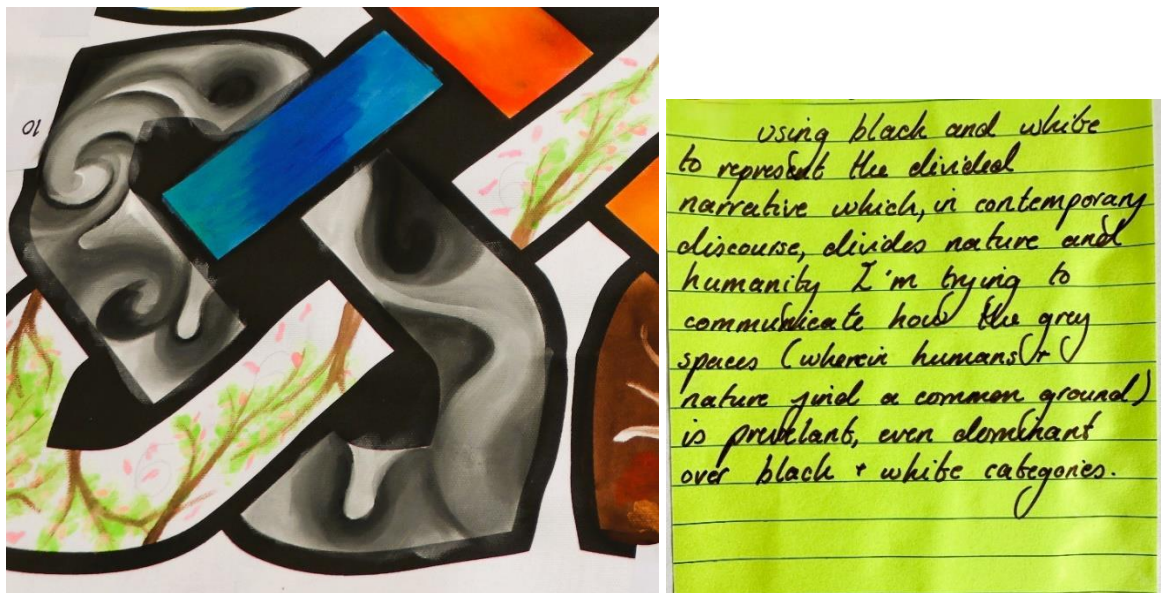


Figure 23 UofG: Black and grey art on Celtic strand (left). Participant's description (right) reads, “Using black and white to represent the divided narrative which in contemporary discourse divides nature and humanity. I'm trying to communicate how the grey spaces (wherein humans and nature find a common ground) is prevalent, even dominant over black + white categories.”

The artwork powerfully portrays the participant's thoughts in the context of contemporary sustainability discourse, where the “grey spaces” representing common ground between humans and the natural world prevail and dominate the separating black and white spaces, that represent humans on one end of the spectrum and nature on the other. Although these black and white spaces and ways of thinking and being exist, the participant painted her perception, belief, and possibly desire that human-nature co-existence and relationalities far exceed narratives that divide “*nature and humanity*.” Painting this onto an interconnected strand of the Celtic knot connected her thoughts and reflections with those of other participants who were simultaneously expressing further connections onto the interweaving strands, collectively reviving deeper human-nature relationalities and the ITELs embedded within.

5.2.2 Experiencing unity through diversity

Despite the apparent barriers that would usually be expected within a space comprised of individuals from different cultures, backgrounds and disciplines, magnified especially within a university environment at the UofG, participants across the three sites experienced and expressed understandings of the concept of unity through diversity. The concept is evidenced through a range of indigenous and faith traditions and reflects the idea that the vast ocean of human and non-human beings essentially originates from the same source, despite the diverse expressions our forms take in this world.

From an IE perspective, unity through diversity is understood to emanate from the concept of *tawhid* or the oneness of being that highlights the singularity of the Creator, from Whom emanates the (spiritual) Divine Essence of existence present within all of creation. This Divine Essence is manifested through an infinite diversity of life forms and creation on earth and beyond, united however through the Source they originate from. The chapter of *Al-Hujūrat* (Quran, 2025, *Surah* 49, *Ayah* 13), elucidates the reasons for this diversity, “*O humanity! We created you from a single pair into peoples and tribes so that you may (get to) know/recognise one another.*”⁴ Plurality of existence and ways of being in the Islamic

⁴ The Arabic used for get to know - لَتَعَارَفُوا - in this ayah (Quranic verse) comprises of the word *ta'aruf* which translates to “introductions”, similar to my native languages of Urdu and Sindhi. The ayah in Arabic can then have a range in meaning from simply knowing other peoples and tribes through introductions and making connections, to deeper understandings and relationships, made possible through recognising ourselves in the other.

tradition is understood as a given, despite our origin from the same Source, with an encouragement to know ourselves and each other; what is deemed important are the codes of conduct we embody when relating to others. The plurality and interdisciplinarity of knowledges and philosophies within ITELs allowed for numerous pathways into the subject area through an appreciation of a range of participants' personal interests and disciplines. This allowed participants to engage with ITELs introduced during the workshops, demonstrate a deep appreciation of one of the core ITEL literacies of unified and interconnected existence, and revive it through both artwork and reflective discussions. The following images (Figure 24) share a student participant's artwork and description in response to the prompt for the arts-based inquiry, reflecting an appreciation of both unity and diversity.

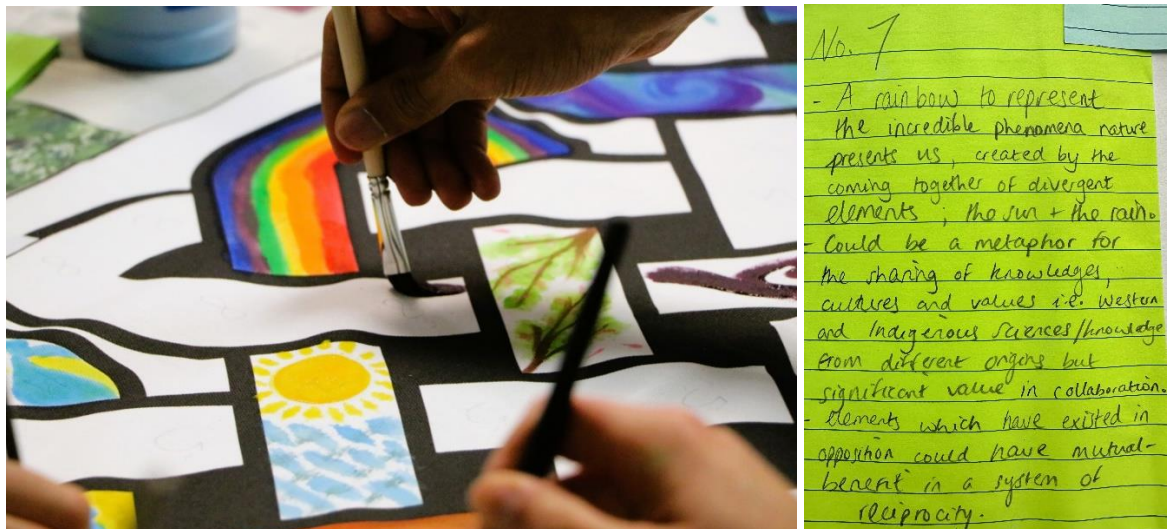


Figure 24 UofG: A rainbow painted on a strand of the Celtic pattern on canvas (left). Participant's description (right) reads, "A rainbow to represent the incredible phenomena nature presents us, created by the coming together of divergent elements, the sun + the rain. Could be a metaphor for the sharing of knowledges, cultures, and values i-e. Western and Indigenous Sciences/knowledge from different origins but significant value in collaboration. Elements which have existed in opposition could have mutual benefit in a system of reciprocity."

This participant had chosen to depict her response through painting a rainbow and sun on a strand of the larger intertwining Celtic knot. When discussing her artwork, she shared,

“This is the contrast of the sun and the rain that are kind of opposing elements, but they produce something beautiful when they are made to work together and maybe that could be something for incorporating indigenous knowledge into sustainability. So, it basically symbolises interconnection in a way. Yeah...or interdisciplinarity. Yeah, the kind of combining, contrasting elements or voices or knowledges, whatever it might be.”

Although the concept of unity through diversity was not directly shared through ITEL introductions, participant artwork and reflections evidence a strong appreciation of both diversity of thought and existence, and the similarities and interconnections that allow us to unite. This participant chose to reflect this unity and diversity by alluding to the contrasts and collaboration of elements that come together to form a rainbow, a widely appreciated phenomenon, and used this to envision a sharing of “*knowledges, cultures and values*”, where knowledge traditions that may have existed in opposition could mutually benefit each other through reciprocal sharing. The sun and rain depict these contrasting elements, and *without* losing their character, originality, and distinct characteristics, “collaborated” to form a beautiful spectacle in the sky for everyone to appreciate, alluding to equally beautiful possibilities of collaboration across pluriversal thought and being, without losing our originality and diversity. The participant’s analogy and metaphorical representation of her thoughts point to IE perspectives of nature being our greatest teacher, which allows us to draw learning and inspiration from the natural environment we are a part of and deeply intertwined with and immersed in, whether we actively realise it or not.

The swirls of different shades of blue within the artwork below (Figure 25) reflect another participant’s ideas and understanding of the theme of unity and interconnectedness as foregrounded within ITELs. In response to the prompt of “what connects us all in nature”, she chose to highlight the spiritual interconnectedness we share with humans and other life forms on this earth. The participant was aiming for a ‘*...flowy, spiritual kind of interconnectedness between the swirls...(an) interconnection of the spirit...that’s the best way I could think of doing it.*’

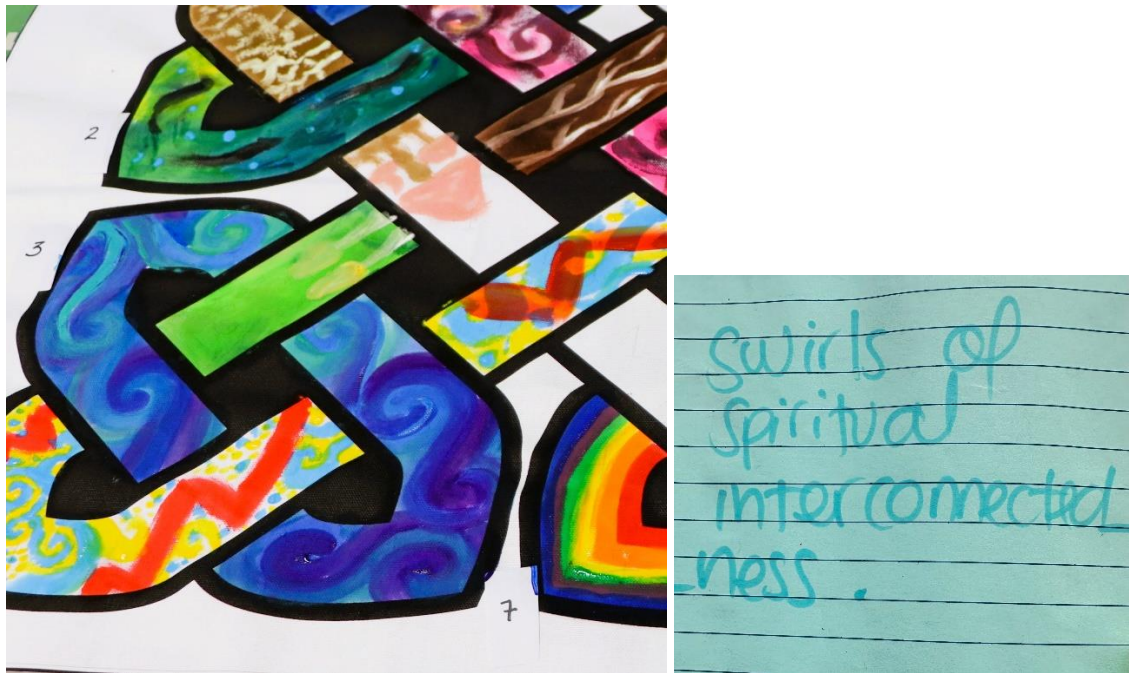


Figure 25 Dark and light blue swirls (lower left). Participant's description (right). The description reads “swirls of spiritual interconnectedness.”

Similarly, the strand of artwork below (Figure 26) displays another close representation of the IE understanding of unity through diversity. When discussing their art, the participant shared their thoughts on life and energy,

“I’m saying that’s what weaves between everything. In the sense that, we’re all...life is part of us all, we’re all being possessed by life. But also, energy in a more scientific way...there’s energy in atoms...I can’t go in depth about that. But then I also wanted to do faith, because the belief that we’re all interconnected by life and energy is an act of faith. And we can’t be certain about it. So, that’s my thinking.”

It is incredible that participants chose to portray such deep conceptions of the nature of life and existence, using both art and language to portray and communicate what they felt and understood were elements that interconnect us to other humans and life forms. According to this participant, both “life” and “energy” (which could also be understood through science as atomic particles and energetic connections) and their possession of us and our material forms serves to interconnect us. Additionally, the participant’s description suggests that we are also connected through our faith and belief in this “life + energy” linking us, even if this faith cannot be materially or empirically understood or proven.

From an IE perspective, this life and energy is understood and conceptualised as the *ruh*⁵, the life force that runs through us all and animates our material forms in this world.



Figure 26 Orange, yellow, light blue art on Celtic strand running diagonally (left). Participant's description (right). The description reads, “Life + energy. Faith.”

These participant reflections evidence how the interdisciplinary and pluriversal nature of the ITEL “curriculum” for the workshops prompted *tafakkur* (reflections) leading to *tadabbur* or deep contemplation, transcending material forms, disciplines, and academically constructed divides. The reflections demonstrate an appreciation of material and spiritual dimensions of human-nature relationality through participant artwork and dialogue. An ITEL focused ecopedagogical space and inquiry prompted holistic reflections on life and the natural world, reviving ancient literacies and enabling participants to overcome the material and spiritual divides prevalent in mainstream education, and EfS in particular, as shown in the literature.

The arts-based inquiry at the SFGN and resulting responses through participant art and dialogue portray similar sentiments as they relate to the unity and interconnections between humans and the natural world, despite their diversity and plurality. Whether this was portrayed through the underlying shapes or sacred geometry present within humans, life forms, and creation within nature, feelings of hope and unity, or an expression of how

⁵ Within the Islamic tradition, the *ruh* is understood to be the immortal, essential self that was blown into the first human being to be created from dust, Prophet Adam (عليه السلام), by Allah. It is understood as an act of life giving love from the Creator to the creation. The *ruh* possesses and animates the body until the time of its physical/material death. It is also translated to Divine Essence in English.

humans have “*distorted this order*” (Figure 27), participants actively attempted to portray their thoughts and reflections on what connects the human and non-human, including what may have disrupted these connections.



Figure 27 Artwork on African continent. Descriptions read; (left) *Nature shapes*, (centre) *Green Africa*, *Green - vegetation, life, hope*, *Yellow - African sun*, *White space - unity, connection, balance*, (right) *Nature just like all the creation was God's hand work, everything connects so well. However, humans selfishly have distorted this order.*

Art has already been evidenced to promote greater expression, creativity, and expansive thinking (Kara *et al.*, 2021), and using arts-based inquiry through an ITTEL focused participatory, pluriversal, and decolonial space allowed for an experience and expression of unity through diversity throughout participant responses, as evidenced within the artworks above. An appreciation of this unity through diversity was aptly verbalised by a UofG participant, who commented on how the workshop activities had allowed for a diverse but shared student experience,

“Just kind of the fact that everyone has come from [different backgrounds], but we’ve all come together to kind of have the same conversation almost, or we all have an interest in it. And even just the range of subject matter...and religion, and science, and environmental studies that we looked at, it’s, it’s really encouraging that there’s...when you kind of really go into it, it can be such a kind of, all encompassing...all of humanity...applied to everyone, and everyone can come together to share. Yeah, it’s such a shared experience.”

Participants also commented on the power of the environmental crisis to bring people from different disciplines and backgrounds together, due to their various interests in sustainability and regeneration. This was further elaborated on through participant reflections that highlighted not only the people that the crisis was bringing together, but also the shared philosophies and literacies that connected them to each other. A participant who identified as pagan with an interest in Buddhism, shared reflections on interconnectedness evidencing concepts of unity through diversity from her visit to the Cop 26 in Glasgow,

“I found it really funny, I was looking off to see some of the indigenous...people, I think it was from Canada. And finding that their spiritual practice is almost identical to other pagan rituals that I’ve seen, and I was like, whoa, so you’ve come from a whole different country and that knowledge has somehow survived, but we don’t actually know where the link is at all.”

The participant’s reflection points to the greater mysteries of life that connect us, that we may sometimes not be able to understand fully or empirically. These were, however, felt, perceived, and experienced by participants through reflection and deeper contemplation, effectively reviving ITELs and deeper ways of knowing and being in the process.

This section demonstrated that the arts-based inquiry and reflective discussions were key to reviving ITELs during the research workshops. Participants demonstrated strong engagement with prompts for the artwork, portraying deeper material and spiritual understandings of human and non-human life and existence on earth. Combined with participant dialogue during the reflective discussions that appreciated deeper human-nature relationalities, participants were enabled to actively revive indigenous and traditional environmental literacies through conversations, reflections, and deep contemplation.

5.3 Personal reflections: articulating deep connections to the natural world

The arts-based inquiry and reflective discussions for the *revive* workshops were preceded by participants reflecting on, writing, and sharing favourite aspects of and in the natural world, with the wider participant group. This supported the facilitation of reviving ITELs

and demonstrated that personal reflections aided participants in articulating deep connections with the natural world. Articulating these connections further enabled participant engagement with the reflective discussions and arts-based inquiry, through drawing attention and awareness to their own human-nature relationality.

Participants spoke fondly about their various connections to the natural world that included childhood memories, experiences of learning, connecting and relaxation, and feelings of care and respect for the powerful forces of nature. A WCDT participant's written response evidences the affection she felt for the natural world that surrounded her,

"I love how spongy moss is. I love to be in woodlands with all the tall trees that seem undisturbed. I love seeing my children discover flowers, leaves and acorns with so much excitement. I love the landscapes of the Highlands, waterfalls, being in a loch. I love discovering the history of plants and their spiritual or medicinal properties."

Participants across the research sites shared extensively from their childhood memories with family to current experiences of *"coastal walks with waves crashing"*, *"rustling of trees"*, *"small chirping birds"*, *"the smell of the rain"*, *"warmth, wind, sea, birds, grass, flowers, stones, forests, insects, life"* - experiences that were distinct but carried similar undertones and feelings that others in the group could relate to. It is interesting to note how the last comment, from an SFGN participant, expresses different aspects within nature and culminates with *"life"* itself, signifying how only the vastness of life could encompass the innumerable facets of nature they loved and appreciated, or possibly how all of *"life"* was an experience of nature for them. It also points to themes of interconnectivity, the sheer encompassing presence of the natural world, and the implications of this presence for understanding and experiencing life itself.

Making and articulating these personal connections enabled participants to become acutely aware of them and build a strong foundation for reviving, applying, and celebrating ITELs within current and consecutive workshops. Similarly, an EfS practice is at best ineffective without an appreciation, understanding, and development of strong human-nature relationalities. This is not simply an assertion based on ITELs or the theoretical lens for this thesis, however, if it is an accepted norm to invest in our relationships with people, why does this have to be any different for our relationship with the natural world, the

nurturing earth itself? These observations also point to the absence of ecological perspectives within standard educational and workplace policies that focus on relationship building with humans but lack the same intentions and actions for developing similar relationships with the natural world. Participants reflected freely and deeply on these relationships which were often reminiscent of warm feelings, connections with other people, and nostalgic memories. Some shared about childhood excursions in the forest, while others appreciated the sensory experience of being in nature, and the importance of feeling safe outdoors that allowed for these experiences. A participant at the WCDT, for instance, reflected on childhood memories with her grandmother,

“...getting back to the simple stuff, like picking apples with my gran. I suppose it just gives you, it’s the sense of safety. The sense of safety, the connection, that’s all I can think about is people need to feel safe in order to engage with nature, they’re just not going to do it otherwise, they can’t even see it”.

She then elaborated how she had walked through Kelvingrove park (in Glasgow) “*a million times*” but had seldom paid attention to her surroundings due to her mind being fixated on errands and responsibilities. This speaks to the rushed lives designed and promoted through capitalist worldviews. Overburdened with the everyday demands of contemporary life, the effects of this dysfunctional system make the practice of slowing down for reflection and contemplation, within or without a natural environment, feel out of place in our everyday lives. This makes it crucial for us to pause and reflect, specifically in the context of the environmental crisis, to develop what Naess calls our ecosophies or “personal philosophies of life” (p. 33, Naess, 2008). Participants also reflected on sensory experiences in nature sharing how being outside made them forget about the pressures of daily life. A participant at the UofG shared,

“Nature is beautiful and stunning, especially forests and rainbows. The warm summer, spring, wind in your hair makes you feel alive, and reminds you that life is not always about working 9 to 5 or doing laundry.”

This mirrors the reflections of the WCDT participant above, underscoring the importance of being present in the natural world to remind ourselves of life that exists beyond industrial productivity. Participants across the sites reflected on their favourite aspects in

and of nature: their dog Greta; the landscape – *“a groove in the slope or the colours of the sunset”*; the sheer scale from a pebble to mountain, from a ladybug to a whale, and the *“richness at every scale”*; leaving the Highlands as home and the nostalgia of missing its beauty; walking along the beach with the sound of the waves; bird watching and conversations with people in nature; picking firewood and wild fruits from the forest as a child; the smell of the rain; the colours of the flowers; walking and an *“...overall feeling of just being on a path”*; and many other instances of the same.

An SFGN participant shared that the first memory that came up for her when reflecting on favourite aspects of/in nature was

“...being at my mom’s home, sitting on a mat with a cousin under a tree, just lying down telling stories and laughing just listening to the leaves...colours from the flowers around the yard. It’s peaceful and warm”.

The thread of feeling peaceful and at home in nature, making connections with others while immersed within it, wove through multiple participant reflections. This suggests the immense power of the natural environment to bring people together, enabling us to develop strong relationalities with human and non-human life on earth. Participants took their time sharing personal reflections, suggesting that they enjoyed articulating their favourite aspects of/in nature. The reflections highlight immersive, sensory, and embodied experiences evidencing that humans experience the natural world in an embodied way, suggesting that nature permeates us, which would have not been possible if the natural environment was a mere phenomenon outside of us. Participant’s reflections also demonstrate some key deep ecology principles - the inherent worth of nature independent of humanity, the richness and diversity of life, and an appreciation of deep relationships with humans and non-human life forms beyond “short-term, narrow human interests” (p. 26, Naess, 2008).



Figure 28 UofG: Reading out participants' written reflections.

Another UofG participant further reflected on the effortless assimilation and continuation of apparent physical forms within nature,

“It [nature] is effortlessly beautiful. No artist has ever managed to compete with its perfection. There are no straight lines or right angles in nature. Opposes with the human desire to draw borders, to separate”.

This beautifully articulates the participant's perceptions of the natural world, highlighting destructive human inclinations to divide and conquer for material gains, reflected through the IE concept of *nafs al-ammarah*⁶, or the narrow human interests defined within deep ecology. Five thousand miles away, a year and a half later, a participant at the SFGN workshop continued this conversation on the absence of straight lines within nature,

“So, it's interesting on a macro level you know, there's no straight lines in nature from above everything. But once you get down to micro level, everything is geometry,

⁶ *Nafs al-ammarah*, translating to “the commanding soul”, is a term used to describe a part of the human soul that is understood to incline the human towards excess, greed, and materialistic desires. Without resisting these destructive desires, humans can end up being subjugated to its dictates and commands.

it's interesting how that doesn't translate on a surface level of our landscape, you have to kind of get down (to understand it)."

These reflections initially concur with the previous one but then delve deeper to highlight how underneath the seemingly non-mathematical design within the natural world lies a world of geometry waiting to be explored and marvelled at, pointing to the presence of sacred geometry as the proverbial order beneath the chaos. The above reflections seem to portray participants conversing with each other across time and space, consolidating the idea of the underlying interconnectedness of natural forms – the similarities in reflections produced by the ITEL inspired prompts transcended participant ages, backgrounds, and geographies highlighting, in addition to human-nature relationalities, an interconnection of ideas, values, and principles. As Naess (p. 93, Naess, 2008) notes, enabling a deepened perception of the realities of our existence within the natural world is "...more a question of community therapy than community science: healing our relations to the widest community, that of all living beings". Facilitating these reflections on human-nature relationality, therefore, allowed for a kind of community therapy where participants transcended reductive perceptions of the natural world and were facilitated to "heal" their relationships, through articulating their favourite aspects of/in the natural world and appreciating deeper human-nature relationalities.

This section discussed findings that emerged from the process of facilitating participants to revive ITELs. Personal reflections on participants favourite aspects of/in the natural world enabled an articulation of deep human-nature relationalities. This allowed for holistic understandings of the human-nature relationship and set strong foundations for the consequent arts-based inquiry and reflective discussion sessions.

5.4 Critical, radical, dialogue and participant response to reviving ITELs

The process of facilitating participants to revive ITELs also demonstrated that participants engaged in critical, radical dialogue and evidenced strong affirmative responses to reviving indigenous and traditional environmental literacies (ITELs). The reflective discussion sessions prompted participants to share reflections on ITELs (as they were being introduced within the workshop), including their thoughts on why these were not part of

mainstream sustainability narratives, policies, media etc. The resulting reflective discussions evidence critical, radical dialogue around colonialism, imperialism, and performative sustainability, and participant's support for reviving ITELs, specifically within spaces of higher education.

5.4.1 Colonialism, imperialism, and performative sustainability

The open and unstructured reflective discussions allowed for dynamic participant dialogue evidencing strong resistance to colonialism, imperialism, and performative sustainability, supporting the revival of ITELs in the process. The ecopedagogical approach for the workshop activities encouraged a critical, decolonial, and holistic appraisal of current sustainability narratives. Further, an ITEL focused ecopedagogy because of its inherent plurality, interdisciplinarity, and intersectionality highlighted reductionist paradigms around human-nature relationality and the crucial need for disrupting these within the context of sustainability issues.

A WCDT participant shared how he had recently read about and reflected on some writings and the interdisciplinarity of knowledges,

"I mean this is bizarre, amazingly bizarre, great, that what you went through with your slides was what was going through my mind about where all around the world is a symbolism of the sacred geometry that basically just get noted down as numbers. And...so it took us away from the natural to just being a language, learning like English language or whatever else. So, it takes us away from the root of it, that you've shown, that we can look at a flower and we would have been taught where all this comes from."

This participant's reflections pointed to the reductive paradigms and lack of interdisciplinarity within contemporary education systems, where learning languages and numbers did not have a direct connection to nature anymore, and where geometry was reduced to just "*numbers*", making us oblivious to its deep presence within the natural world. Others shared some of their frustrations with the marginalisation of ITELs through current socio-economic structures and norms, including at the CoP 26 (that had taken place in Glasgow the previous year). A participant noted,

“The mainstream cultural society is capitalist, driven by money and that’s what rules the world. Unless sustainability or indigenous ways of looking at it are not making money, you know, they are going to stay quiet, but that’s not making money.”

In agreement, another participant observed,

“Even at CoP [CoP 26] there weren't many indigenous voices present. They were all in the People’s Summit, they weren’t...it’s more like fringe programming. And actually, it was amazing that people still came...from all over the world. Their voices were not listened to.”

Capitalist and colonial perspectives that continue to marginalise indigenous and traditional ways of knowing and being through imperialist practices were a recurrent theme within participant responses (see Chapters 6: *Apply* and 7: *Celebrate*) during the workshops. The ecopedagogical approach that informed the workshops prompted critical, radical dialogue and evaluation of contemporary thought and behaviour in the wider context of the environmental crisis and its origins. Participants also consistently evidenced engagement with deep ecology principles, calling out performative sustainability, including questioning the intentions behind the use of the term itself. A WCDT participant from Scotland who had recently completed her Masters in Arts commented on the holistic perspectives reflected within ITELs, contrasting them with reductive narratives around contemporary notions of sustainability,

“And so you know, holistic perspectives are not...they challenge, they challenge us to look at something other than sustainability, which is maybe why they’re not part of the conversation at all. You know, sustainability is, I don’t know, I feel like it’s often a flawed concept to begin with. Flawed like, I think, we can keep going in the same way, but we have to use a different product. As opposed to why we’re using a product in the first place. It’s something completely different.”

Responding to her, another participant shared her views about a car conference she had attended through her work,

“And I was in the middle of all this, [where they are] saying the part where the future is electric. Okay, well, you’re really just telling us another...you know, another thing. And that’s your future now? Without you questioning, do we need a car? Yeah. Can we change that? You’re sort of falling into the capitalist machine, but just in a different way.”

The participant dialogue above evidences how the workshop prompts led to critical discussions around capitalist practices and performative sustainability, what Naess terms as “shallow ecology”; participants not only called out the “*capitalist machine*” driving these but also disrupted the status quo, voicing their indignation at being sold greenwashed products instead of questioning the product’s purpose and existence. The dialogue demonstrates participant’s appreciation of ITELs, in particular, their appreciation of how ITELs prompt us to critically evaluate our practices of consumption and enable us to tackle the foundational issues responsible for the crisis, in congruence with deep ecology principles. Student participants at the UofG similarly shared strong opinions around performative sustainability within the reflective discussions, calling out practices of “shallow ecology” that failed to appreciate deeper human-nature relationalities and account for socio-environmental injustices. A student participant who was doing a Masters



Figure 29 UofG: Reflective discussion sessions.

dissertation was working with an indigenous woman in Vancouver, Canada for her study. She shared her how the oneness of nature and humans was reflected within her participant's traditional family line, which was related to animals, nature, *and* the lands they had lived on for millennia. However, she found that being in Vancouver which was considered to be a “*supposedly green and sustainable city*” where...

“lots of claims are being made towards reconciliation”, she observed that it was “all at quite a performative level, I suppose, and that’s kind of the critique that I’m looking at. And...just that indigenous views are more valuable and deserve more than that, than performative claims of reconciliation and climate resilience.”

The conversation continued with two more participants joining in:

Participant 1: *“It’s one of my key frustrations with community development because at one point in my course I had to study sustainable development, and the seventh or ninth goal in that is...business growth! [with incredulity]. But then, so many scientists are calling for degrowth economics, but everyone ignores that and it’s...if that one goal of business growth is still prioritised, all the rest of the goals for human rights, animal rights, community building etc are gonna fall apart!”*

Participant 2: *“Yeah. So, it doesn’t make sense. The SDGs are the most ridiculous concept that the UN has introduced. We’re never going to be able to get a hold of the climate crisis if we’re still pushing for development. And what is it that fuels development? What is the raw material that you need to have development? And at what cost?! [passionately questioning]”.*

The dialogue above demonstrates why “sustainable development” and the SDGs receive significant academic and public criticism, which is also evident within the literature review for this study. Participants marked these terms and the narratives and practices surrounding these as acts of performative sustainability, or “shallow ecology” from a deep ecology perspective. The reflective discussion sessions, prompted by the introduction to ITELs, evoked strong feelings and emotions as they related to the hypocrisy evident within actions of performative sustainability, allowing space for these thoughts and emotions to find expression and build participant dynamics for the *apply* workshops. Participants were,

however, supportive of forms of development that were not environmentally destructive and instead focused on developing human-human relationalities citing community development as an example, where “*you’re developing bonds between people*” without viewing development within a framework of economic growth. A participant from the Highlands shared her frustrations with rewilding practices involving privileged rich people, critiquing “*this Danish landlord*” who...

“...owns one third of the whole of Highland”, sharing that, “it should be communities rewilding that in a way that’s compatible with their lifestyle. But instead, it’s this rich guy being like, oh, move out the way. I’m making this land really expensive and getting subsidies to plant trees [...] So, it’s having such a huge effect on the local bird and wildlife populations because the trees aren’t compatible with their patterns of existence.”

These reflections point to participants’ continued frustrations and resistance against imperialism and performative sustainability, and deep desire for reclaiming peoples’ relationships with and agency for their land. This participant, who called the Highlands home, was unable to attend the *celebrate* workshop due to being unwell, however, she still sent over her contribution for the Sharing Circle through email. Her offering was an excerpt from a poem by Norman MacCaig titled “[A Man in Assynt](#)” (see Appendix G) to communicate the participant’s frustration with the politics of ownership in, and love for, the Highlands.

Participant conversations weaved in and out of critical, radical discussions around colonialism, imperialism and performative sustainability highlighting their roles in exacerbating the crisis, including reductive perceptions of human-nature relationality and the power of Euro-Western science to “*legitimise itself*”. A law student in her development class, for instance, had realised how...

“...there was this idea that the only history is the Western countries’ history. And so, they impose their idea of development based on their experience without of course, taking into consideration that there are different contexts and different histories and cultures.”

Participants also reflected on the adaptability of capitalism and its ability to appropriate ideas and make them compatible to itself, they shared views on misogyny playing a role in suppressing plant medicine which had largely been perceived as a female practice, and critiqued materialistic worldviews for preventing spirituality and environmentalism from being taken seriously.

“So, your whole value as a human is your labour. [...] But it (capitalism) doesn’t see the human experience as the spiritual self, the natural self. And so, it’s a real fight as an eco-socialist to bring legitimacy to these spaces.”

It is evident that the ITEL focused reflective discussion sessions highlighted the egregious consequences of colonialism, imperialism, and capitalism as they have led to the environmental crisis. They enabled participants to appreciate and advocate for reviving *“the spiritual self”*, *“the natural self”*, indicating their desire for the revival of ITELs and the holistic conceptions of human-nature relationalities embedded within. Although this section highlights participant’s frustrations with current socio-economic structures and ways of being, participants were also hopeful about academics exploring and promoting ideas like the *“Gaia hypothesis and interlinked ecosystems”*, and significant efforts being made to *“retrieve all the lost (indigenous and traditional) knowledges”*.

5.4.2 Participant perspectives on reviving ITELs

The ITEL focused reflective discussions and participatory space evidenced strong participant support for reviving ITELs, reflecting their openness to the subject and desire for the creation of similar spaces. Participant’s thoughts at the end of the workshop reflect these sentiments including appreciation for the validation of ITELs, specifically within spaces of higher education. A UofG student participant, for instance, who was a climate activist could not attend one of the subsequent workshops due to attending a court hearing for protesting fossil fuels. However, during the *revive* workshop she shared that she shared how hopeful and happy she was that research like this was being funded by the university,

“The fact that you’re doing this research and can actually do this, is really cool. It’s cool that there’s funding for it but that this is a thing that can happen, and that

people show up and have so much to bring is really hopeful! So, yeah, I guess hope and happiness that other people are learning about such important stuff.”



Figure 30: UofG: Collective artwork on canvas. Students painting their responses into the Celtic knot.

Participants appreciated each other’s contributions to the conversation, the sense of community, and the need for creating similar spaces for dialogue and discussion. The open and relaxed nature of the reflective discussion sessions allowed for a deeper appreciation and absorption of pluriversal ideas, ontologies, and epistemologies.

“I think listening to everyone is so great. It was nice to be able to feel like everyone can contribute all the little thoughts in their head. That are really brilliant as well and it’s not like...rushed.”

A WCDT participant similarly commented on the need to be in conversation with others, noting the importance of the “...space to talk about things. Because, it’s true, people don’t really talk about it.” Another student participant commented on her experience of studying at a European university, contrasting what she had learnt with ITTEL perspectives that appreciated the deeper interconnections between humans and the natural world.

“I realise as a European, our philosophy and concepts are, like, me studying things, me separated from things. But there are various philosophies and traditions that are very different. Just this idea of...not just taking interest and protecting the environment as a different entity from it.”

She elaborated on ITEL principles that enabled us to perceive the natural world as part of us and vice versa, creating an intrinsic need and desire for environmental consciousness and care. Participants also commented on how the pluriversal and decolonial space allowed them to share from their life experiences without having to be defensive or reductive of their understandings of the world. A student from the Highlands noted,

“I think for me, [I’m] taking away the fact that I don’t always need to be so defensive when I’m talking about where I’m coming from and that there are people who...listen and are interested. Because my previous experience in university is very much like, people want to disregard anything that’s different, which you wouldn’t expect in an academic environment, but it is quite often the case. So, I think I’m automatically almost a little bit defensive, and meeting you all makes me feel, more comfortable with talking about my background.”

Another student agreed commenting,

“Yeah, I think just the validation of, because I completely agree...they were the first two things I was going to say, but the validation of kind of spiritual practice in an academic environment is not something I’ve come across before.”

Both these comments evidence the lack of pluriversal and decolonial spaces, specifically, within HEIs where participants do not feel fully comfortable discussing their indigenous roots or spiritual practices, which reduces opportunities for crucial conversations and dialogue in the context of the wider environmental crisis. The fact that students felt comfortable in a space that validated their onto-epistemologies and histories, evidences the strengths of ecopedagogical, decolonial, and pluriversal teaching and learning practices.

This section demonstrated that the facilitation of reviving ITELs led to critical, radical participant dialogue around colonialism, imperialism, and performative sustainability.

Participants shared strong opinions on these issues and their contribution to the environmental crisis, questioning the socio-economic structures that continue to enable them and further socio-environmental injustices and oppression. The ITEL focused prompts organically enabled these foundational issues to be highlighted within the reflective discussion sessions, enabling deep reflections and a critical exploration of contemporary sustainability narratives. Participants also shared their appreciation of co-creating spaces that made them feel comfortable to discuss their indigenous roots and spiritual practices, specifically within spaces of higher education.

5.5 Chapter Conclusion

This chapter explored and discussed findings related to the revival of ITELs across the three research sites. The findings demonstrate that the arts-based inquiry and reflective discussions enabled the creation of a pluriversal, decolonial, and participatory space that was vital to reviving ITELs, through both language and art. Participants demonstrated strong engagement with prompts for both activities and used the art canvas to express complex ideas, emotions, and material and spiritual perspectives on human-nature relationalities. The arts-based inquiry facilitated through collective group work on canvas, at the UofG, allowed for both creativity and conversation and enabled participants to appreciate their thoughts and artistic expressions in relation to others', allowing for an experience of interconnectedness and unity through diversity.

The theme of interconnectedness interweaved through both participant art and dialogue, evidencing participants' deep engagement with it. As one of the core literacies demonstrated across the range of ITELs, the concept of interconnectedness provided multiple entry points into engagement with and exploration of ITELs. Participants also appreciated the experience of unity through diversity, or the pluriversal spaces we co-created through the use of ITELs, that served to unite the diversity of participants bringing them together for a shared cause. This was specifically highlighted at the UofG, in the context of higher education, where it was the first time some of the participants had felt comfortable to share their indigenous/cultural roots and spiritual practices without feeling the need to defend themselves. This has strong implications for ecopedagogically oriented, decolonial and pluriversal spaces for teaching and learning, not only for environmental sustainability, but for education in general.

The findings within this chapter evidence that personal reflections on participants' favourite aspects of/in the natural world were key to creating collective awareness of and articulation of deep human-nature relationalities. In addition to enabling an awareness of holistic perceptions of human-nature relationality, the collective sharing of these reflections set foundations for strong group work for consequent workshop activities. The workshop facilitation also demonstrated that the process of reviving ITELs enabled critical, radical, dialogue and discussion around colonialism, imperialism, and performative sustainability through the reflective discussion sessions. Participants engaged in a critical exploration of contemporary sustainability narratives and questioned existing socio-economic models and practices contributing to the environmental crisis. The ITEL focused reflective discussions organically enabled these issues to be highlighted, pointing to the strong potential of using ITELs to develop pluriversal and decolonial literacies for environmental sustainability and regeneration.

The *revive* workshops were designed to facilitate reflection on some of the deeper aspects of human-nature relationships, as evidenced within ITELs, and elicit responses about participants' own experiences of/in nature. Through deep reflections, discussions, and artistic expression participants were able to appreciate the complex and intertwined nature of life on earth, advocating for it through critical dialogue around contemporary socio-economic structures. The workshops enabled participants to explore and unearth their existing personal connections and relationalities with human and non-human life and forms on earth, drawing awareness and attention to material and spiritual interconnectedness and relationalities, essentially reviving these aspects of historically marginalised, but powerful, knowledge systems and literacies in the context of the environmental crisis

6. Ap·ply

Make use of something for a particular purpose.

This chapter will explore and discuss findings that emerged from the application of indigenous and traditional environmental literacies (ITELs) across the three research sites and responds to RQ2 - how can individuals be facilitated to apply ITELs and what does this process demonstrate? The chapter draws on data sources from the *apply* workshops at the Woodlands Community Development Trust (WCDT) and the University of Glasgow (UofG), and the *apply* section of the condensed workshop at the Sustainable Futures Global Network (SFGN) symposium in Malawi. The data sources include audio transcripts, participants' written responses on Ketso charts and sticky notes (SFGN), photos, and observations from the participatory group problem-solving, participant discussions, opening meditations/activities, and closing thoughts (see also Tables 3 and 4 in Chapter 4: *Research Inquiry: design and methods*). An in-depth reading and analysis of these data sources using the intertwined theoretical lens of ecopedagogy, deep ecology, and Islamic environmentalism (IE) suggests that participants exhibited strong existing awareness of various aspects of ITELs and displayed even stronger resistance to capitalist, consumerist, socio-environmentally destructive practices through group work aimed at addressing contemporary sustainability challenges from an ITEL perspective.

These themes of resistance and existing awareness of ITELs emerged through close, intertwined, readings of theory and data (Mazzei, 2021) in addition to diffractive reading (Murris and Bozalek, 2019) that enabled multiple understandings of raw data through the three theoretical spaces of the intertwined theoretical framework. The overarching theme of resistance was highlighted repeatedly through the lenses of ecopedagogy, deep ecology and IE – resistance to oppressive socio-economic structures and to superficial solutions to sustainability issues is foregrounded within each of these three theoretical spaces. Similarly, both the concept of the pluriverse (Escobar, 2011) and ecopedagogy drew attention to participants' openness towards using a plurality of environmental literacies to address contemporary sustainability challenges.

The findings from these readings evidence that participatory, democratic, group problem solving that prioritised open, unstructured dialogue and communication was key to enabling a strong attempt to “apply” ITEL principles to contemporary sustainability issues. Participants were significantly aware of an ITEL focused approach to problem solving that prioritised addressing foundational issues over symptomatic and “shallow” solutions. Student participants exhibited fiery responses calling for urgency and direct action, while community members were comparatively moderate in their emotions and reflected long term vision. The group problem solving allowed for peer learning, greater understanding of each other, validation of frustrations, and feelings of hope and resilience. The findings also demonstrate that prompts to use an ITEL approach stimulated ideas around degrowth, strong resistance to and disruption of environmentally destructive norms, and a defiance of capitalist and materialistic perspectives. The sections that follow illustrate these findings, highlighting the power of collective resistance, through an exploration and analysis of group problem solving, participant dialogue, and Ketso responses.

6.1 Participatory, democratic, group problem-solving

Facilitating participants to “apply” indigenous and traditional environmental literacies (ITELs) through participatory, democratic, group work was key to enabling a strong attempt at using an ITEL approach to respond to sustainability issues. The findings also demonstrate that facilitating the problem-solving activities enabled peer learning, feelings of hope and resilience, a greater understanding of each other, and the validation of commonly experienced frustrations when responding to the crisis.

It is important to note that the application of ITELs simply meant that participants were prompted to use ITELs introduced within the *revive* workshops (and *revive* section of the SFGN workshop), and the resulting reflections and discussions to respond to their chosen sustainability issues. Participant responses indicate that they used an ITEL approach drawing on the workshop content and discussions, in addition to their existing awareness and knowledge of ITELs. Consequently, they did not choose specific traditions or literacies, rather they drew from the commonly shared ITEL *principles* of environmental consciousness and care, community, the interconnectedness of existence, hope and so on.

The participatory group work enabled participants to form their own groups and decide on the sustainability challenges they wanted to address. At the Woodlands Community Development Trust (WCDT), participants had only one group and chose to use Ketso to problem solve for a “sustainable and regenerative community” with four main areas they thought were important to address: transport, clothing, food, and entertainment. At the University of Glasgow (UofG), one group of students worked on Ketso for “sustainable and regenerative student life” and the other on “sustainable and regenerative food systems”. At the Sustainable Futures Global Network (SFGN) symposium, due to the shorter nature of the activity, participants responded to my prompt to problem solve for “sustainable and regenerative community symposiums”, forming two groups to generate responses. Participants across the three sites engaged deeply with the workshop prompts, evidencing strong attempts at using an ITTEL approach to problem solving, through the Ketso activity at WCDT and the UofG, and through conversations and written notes at the SFGN. This “problem solving” was performed together and not in isolation – frustrations, laughter, resistance, and inspiration were all intertwined contributing to participants’ enthusiasm and ongoing dialogue and discussion.



Figure 31 UofG: Student participants working on Ketso.

6.1.1 Applying ITELs

Participants at all three sites related to using an ITEL approach with similar visions and ideas across sites that reflect the holistic nature of ITELs to address sustainability issues, bringing into perspective the need for material, emotional, and spiritual relationality with the natural world for “problem solving”. Across sites, whether it was for making holiday activities more sustainable or infusing ITEL principles into community symposiums, participants advocated for solutions that prioritised slowness, tradition, and the importance of community.

Addressing sustainability challenges for holiday entertainment, a WCDT participant from Scotland reflected on developing holiday traditions with her kids as an important and environmentally sustainable activity, as opposed to buying new items of decoration every year. She explained,

“...we do the same thing, and now you’re a bit older, and you do it with me. We’re not creating something new, we’re just part of a tradition that’s a little bit magical because each person as they’ve become old enough to be included, can be included, and this kind of makes it special”.

Participants similarly advocated for solutions that allowed for a certain sense of slowness in time and in acquiring material things that allowed them to spend more time with their families and children, to repair or mend clothes, and to invest in sustainable and long lasting options for clothing and footwear. Consequently, under Ketso “challenges” they identified the scarcity of time and finances, and the capitalist societies that contributed to these, as some of the main barriers to their proposed solutions. Conversely, through ongoing dialogue and participation within the group, they also suggested further ideas to overcome their identified barriers. For instance, the participant above mentioned “*self-assurance*” as an important factor in deriving “*genuine pleasure*” from wearing the same clothes over a number of years without caring about “*...our body size*”. This was in realisation of the fact that she had become increasingly self-assured as she had grown older, underscoring ITEL principles of perceiving ourselves as more than just our physical bodies and integrating our learned wisdom into lived experience. Participants arrived at these ideas, solutions, and realisations through conversation, overcoming their identified

barriers, choosing areas they wanted to work on, and engaging with the problem-solving process together as a community of people with shared interests in the context of the environmental crisis.

Appreciating and embracing this slowness within proposed solutions was also evident at the SFGN workshop. The following is an excerpt from a conversation between two participants, working on “sustainable and regenerative symposiums” from an ITTEL perspective. Participant 1 had European heritage but now resided in Eswatini, while Participant 2 had German heritage.

Participant 1: *“... being outside, that’s a good one. I mean, I was going to say, you know, if you think about traditional cultures all around the world, there is an inherent thing around events and ceremony. Everywhere...that is about being aware, being mindful, being grateful but there is also a lot of creativity, there is a lot of movement, there is song there is dance and there is a whole lot of regenerative aspects of humanity, not so much regenerative or sustainable around like energy...”*

Participant 2: *“I think that's a very good one because what you don't want to do, and we're doing it here is we are using a very western structure, structures... because it's all fast fast fast, we have to slow down.”*

The above conversation was, ironically, taking place while I was talking to one of the symposium organisers informing us about the next event we needed to be at. We were clearly feeling pressurised with time during the symposium activities. It was evident that people were yearning for a slower pace, the importance of it compounded by the ITTEL perspectives the participants were trying to bring to their problem solving. Consequently, Participant 1 emphasised the...

“...regeneration of the self and of the community or the (SFGN) movement, which we can borrow from indigenous traditions around the world which involve different methods of structuring, different methods of holding space...”.

Participant discussions and written responses from the two groups also evidence ideas and solutions reflecting their desire for more play and community, including a presence of

“alpacas and goats”, in addition to the more usual concerns around *“reducing consumption”*, *“waste”* and our travel footprint. The participant dialogue above demonstrates how group problem solving and the unstructured conversations within enabled the continuation of ideas, adding more context and specificity, and the formulation of solutions that reflected participants’ personal desires for slowness. The participatory, democratic, group work enabled these conversations such that participants demonstrated strong attempts at applying ITTEL principles through, for instance, including the *“regenerative aspects of humanity”* (Participant 1 above) within ideas for regenerative and sustainable community symposiums. This holistic vision for symposiums also prioritised *“ceremony”* reflecting the importance of celebrating the act of being together, creative elements like song and dance, and emotional and spiritual aspects of humanity that in the participants’ views would contribute to the symposiums’ regenerative qualities. Regenerative practices for humanity itself were perceived as contributing to a regenerative and sustainable symposium. Further, Participant 2’s response to Participant 1 identifies both the challenge and the solution, the *“western structures”* that prioritise material productivity and an intentional practice of slowness as the antidote. This participatory problem solving continued to evolve, as did many others, to craft a wide range of ideas and solutions, including the delightful proposition of including animals as part of the symposium.

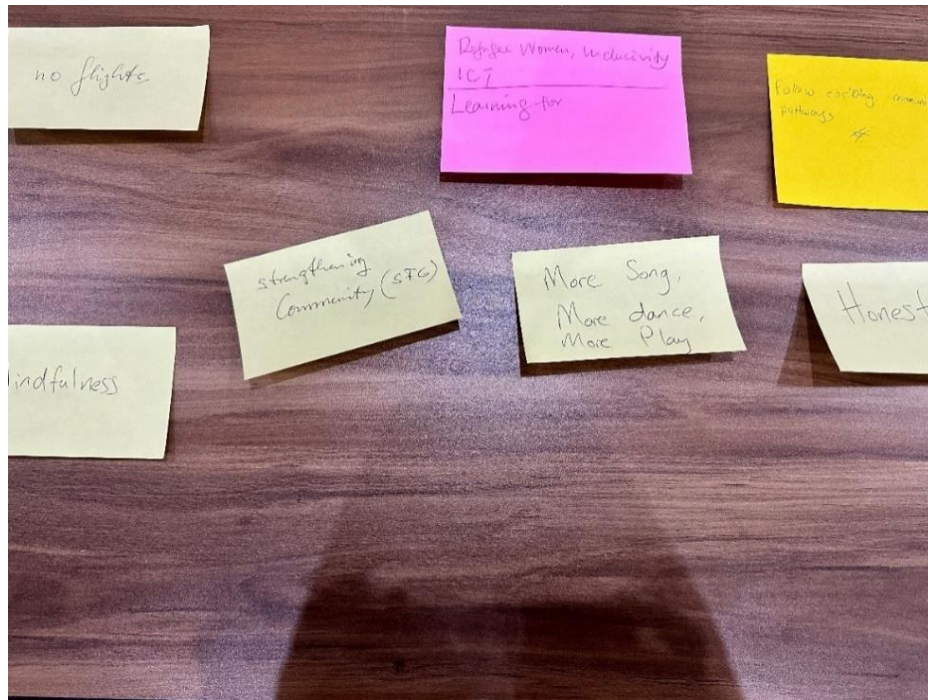


Figure 32 SFGN: A note reads, "More song, more dance, more play."

From an ITEL perspective, the sustainability and regeneration of the environment, the self and community are one and the same, reflecting the participants' sentiments above. This comes from the understanding that humans *are* nature (Upton, 2008), we are part of the natural environment, and regenerating one inevitably regenerates the other and all life within it. The participant responses above validate all three spaces that make up the theoretical framework of the study; an eco-pedagogical approach prioritising participatory, democratic group work resisting dominant and destructive social structures and narratives, problem solving with solutions reflective of the principles of deep ecology, and engaging with the encompassing nature of Islamic environmentalism (IE) which not only affirms the previous two theoretical spaces but inspires holistic material and spiritual reflections on the natural world.

Participant responses at the UofG similarly reflect strong attempts at using an ITEL approach to problem solving. For their chosen topics of regenerative and sustainable "student life" and "food systems", they strongly advocated for; *"teaching farming in schools"*, *"learning how to live with and in nature"*, *"making it illegal to waste food"*, freedom of movement including more *"walking"* paths around university, *"free transport"*, in addition to wider actions around redistributing excess wealth through *"taxing the rich"*, increasing funding for student benefits, and rewriting history to teach

and “*create a narrative that involves stories that have been silenced*”. In response to problem solving from an ITEL perspective and group conversations on creating space for indigenous and traditional literacies and cultures to be revived, a participant from the Highlands (in Scotland) voiced her frustrations with people visiting there from other places, littering, and being disrespectful of the land. “*Be very mindful that you’re, you’re in... a different culture. Yeah. And that you have a responsibility, and it’s not just there for you to consume.*” She expressed her disappointment at the lack of recognition by the Scottish and UK government of historical ethnic cleansing within the Highlands,

“...there’s no statement to ensure that teaching. And the fact that people thought it was a debatable issue rather than a solid fact. So, again, not just with my example, but with so many groups of people. The discrimination that’s within university and when the realities of their situation are not talked about in university, when it’s posed as something to debate.”

The participant’s experiences of feeling discriminated and relating that to “*other groups of people*” experiencing the same, speak to the systemic marginalisation and omission of indigenous and cultural histories and accounts within mainstream Euro-Western narratives and academia. The participatory group problem solving enabled these important conversations, facilitating critical thought and reflection, peer learning, and solutions that reflected both an attempt to use an ITEL approach and a desire for the integration of indigenous and traditional literacies within participants’ visions for a regenerative and sustainable “student life”.

Participant attempts at applying ITEL perspectives to contemporary sustainability challenges also demonstrate a strong desire for solutions that prioritise the concept and practice of community. They advocated for everything from communal eating and living to communal gardens for planting food. Some of their Ketso responses include: “*large scale free communal eating*”; “*building community gardens as part of urban planning*”; “*increased education on community food systems*”; “*education on urban food growth*”; “*love and care for those around you, share work*”; “*empowering local communities*”; and as a participant explained,

“...the idea of big communal eating...everyone being able to come and just get food, like these big...in the centre of town, or in different places, just big canteens.”

Inquiry through participatory, democratic, group problem solving enabled a snowballing effect such that if a participant shared a solution prioritising community (for regenerative and sustainable “food systems”), the rest of the group appreciating the importance of community, carried the solution further adding more practical ideas of their own. The timed nature of the different stages for the Ketso activity further enabled an effusive and engaged pouring out of ideas and solutions onto the Ketso charts.

As with all solutions, participants were also prompted to identify challenges and suggest long-term solutions and ideas to counteract these challenges. Both at the WCDT and UofG, pressures on time and money were identified as the two main barriers to implementing sustainable and regenerative solutions. Individuals needing to work long hours, with young kids, or needing access to food banks were perceived to be at an added disadvantage to implement changes towards more sustainable options like growing food. Solutions such as refill stations were considered to have been restricted to a small percentage of people, *“...all shops used to be like that in the old days. Yeah. And then now it’s seen as a luxury.”* The development of community, therefore, was perceived to be crucial as a long-term regenerative and sustainable solution to the challenges identified. A UofG participant, however, noted that the scarcity of communities where people could come together, to hold space and support each other, had made the idea of community an alien concept. She reflected,

“Because I am a community development student and I’m always thinking about communities...when I talk about this, I realise that I live in a, a little bubble. And when I train, I talk about this to people outside the community development sphere, then it’s... “what community?”, “why does that matter?” And I’m like, but it’s everythinng! [with love and exasperation]”.

Community is at the core of the majority of Islamic practice: the strong emphasis on praying in community for the five daily prayers, the communal aspects of fasting in the month of Ramadan, or the obligation to donate a percentage of finances to those in need within the community. The concept of community within IE (Islamic environmentalism)

expands to include the birds, ants, trees, and *every* other non-human being (see also Chapter 3: *Theorising for Education for Sustainability and Regeneration*) within the sphere of the greater community of beings on earth. The concept is, similarly, an integral part of many indigenous, faith, and cultural traditions from Buddhism to Native American teachings. As a core practice and literacy across the range of ITELs, it's not surprising that participants advocated so passionately for rebuilding a sense and practice of community; coming together in community seemed to feel instinctive to them and could be possibly why it was perceived to be an important factor across the three sites.

Some participants also remarked how they hadn't really "*thought about indigenous epistemology*" or didn't "*really know about indigenous solutions*", but then instinctively proposed a "solution" that reflected community, togetherness, and wellbeing, indicating that the need for these is a natural human instinct. Another participant at the UofG commented, "*I think we could use traditional and indigenous perspectives for everything*" through "*...just being worldly aware, nature aware*", suggesting that this participant also related using an ITEL approach to a greater awareness of the natural world. Consequently, participants advocated for slowness, community, tradition, and wellbeing because they perceived these to be crucial to resist the challenges of capitalism, colonialism, and materialism, all factors perceived to have contributed to the environmental crisis and the eradication/suppression of indigenous knowledge systems.

To summarise, participants demonstrated a strong attempt to apply ITEL principles through the group problem solving activities not only because they perceived them as such, but also because they were considered to be vital to social and environmental wellbeing. This indicates that ITELs were not perceived to be an alien philosophy, instead, the findings suggest that the ITEL principles participants advocated for were instinctive to them and rooted within them as basic human needs, without the need to associate them to specific indigenous, faith, or cultural traditions.

6.1.2 Peer learning, understanding the "other", hope, and resilience

The research workshops all commenced with introductory openings to enable participants to ease into the physical space and familiarise themselves with their peers. For the *apply*

workshop at the UofG, this involved us facing each other in a circle and greeting each person with their native greeting(s) and name. The exercise had a profound effect on the body language of the participants: their physical forms relaxed visibly, smiles were given and received, and they seemed to feel a connection with the words of their native greetings. With the whole circle greeting each person collectively in their native language, each participant had the opportunity to truly feel welcome with their name, language, traditions, histories and so on, creating a safe, open, and respectful space for participants to engage in (see also Chapter 7: *Celebrate*). This enabled both peer learning and a greater understanding of the “other”; witnessing each other’s similar reactions to words of greeting that sounded different but conveyed the same meaning and warmth created an experience of unity within diversity (see also Chapter 5: *Revive*). The comforting sense of familiarity that ensued was crucial for building a strong group dynamic for the later stages of the *apply* workshop. In total, we shared 13 greetings (Figure 33), with some participants sharing greetings from the multiple languages they spoke.



Figure 33 UofG: Salaam translated to “peace” in Arabic is foregrounded to emphasise a sense of peace and co-existence.⁷

⁷ Salaam is short for *As-salaam-alaykum*, translated to “peace be upon you”. It is the principle greeting in most Islamic cultures, and in Pakistan where I grew up. As facilitator for the workshops, I envisioned myself holding space for the diversity of people attending. Foregrounding the greeting here reflects my intentions of bringing people who care together in solidarity and peace, in the context of the wider environmental crisis and the challenges it imposes on us all.

In addition to enabling a strong group dynamic through the native greeting exercise, participants were also facilitated to ask and respond to questions in a group, before commencing with the Ketso activity. They came up with a wide range of questions including, *“how do whales generate sound?”*, *“how can we convince or encourage people who already view the environment through the lens of rationalisation to look at it in a spiritual way?”*, *“do you think we will prevent ecological collapse?”* and *“why do some people prefer fake plastic plants to real ones?”*. Because the activity was introduced as an invitation to be playful and curious, it encouraged light-hearted curiosity in addition to more serious questions. Participants responded to their neighbour’s questions in writing followed by an invitation to the whole group to comment or suggest more “solutions”. This encouraged greater participation, agency, curiosity, and its expression within the group, modelling the creation of a space where everyone’s input and responses to problem solving were valued and considered. It led to an understanding of different perspectives and opinions, allowing individuals with conflicting ideas or proposed “solutions” to be comfortable to share their views, ask questions, and increase their understanding of each other.

The audio for instance reveals a conversation between two students during the setup of the Ketso charts. The conversation continues from a question about animal rights where a participant (P1) wanted to know why they weren’t similar to human rights. The question was “answered” by her neighbouring student and commented on by another student (P2) with a human rights background, who shared examples of how conflating animal rights with human rights had often led to *“dehumanising”* people. P1 had kept thinking about these comments, she expressed her deep concern for animal rights and shared some readings with P2 that made her think that *“...specie-ism was just kind of like racism”*. She wanted to understand P2’s perspectives around separating human and animal rights, who in turn summarised that *“...animals don’t have the ability to create their own structures of rights, it would be a human structure for the rights of animals”*. And that in terms of rights and responsibilities *“animals can’t have responsibilities”*, creating the need for the separation of human and animal rights. After some continued conversation, P1 who had initially questioned why human and animal rights weren’t considered to be the same thanked P2, expressing that, *“I hundred percent agree”*, and that she had simply wanted to process and understand P2’s response through being in conversation with her.

This dialogue is an example of many similar instances over the course of the workshops where participants truly made the effort to understand each other's points of view. It was the democratic and participatory nature of the eco-pedagogical space that foregrounded pluriversal perspectives, decoloniality, and respect for each other's ideas that made it easier for participants to make the effort to understand each other better, so they could engage with the next steps of using an ITTEL approach to problem solve together. The modelling of the participatory space through this initial problem-solving exercise demonstrates that participants fully engaged with their peers' questions, using their agency and experiences to respond to them with understanding, positively impacting the mindset and temperament of the whole group.

The following question (Figure 34) for instance, reflects the participant's hesitance towards being hopeful in the context of human-nature relationships, however, her peer's response beautifully recognises and foregrounds human agency, nature, and "*human-nature reciprocity*" as part of the solution, emphasising the very existence of humans and the natural world as reasons for hope. The response also goes on to elaborate spirituality and connectedness as potential solutions to overcoming the materialist and capitalist socio-economic structures that have greatly impacted holistic human relationships with nature.

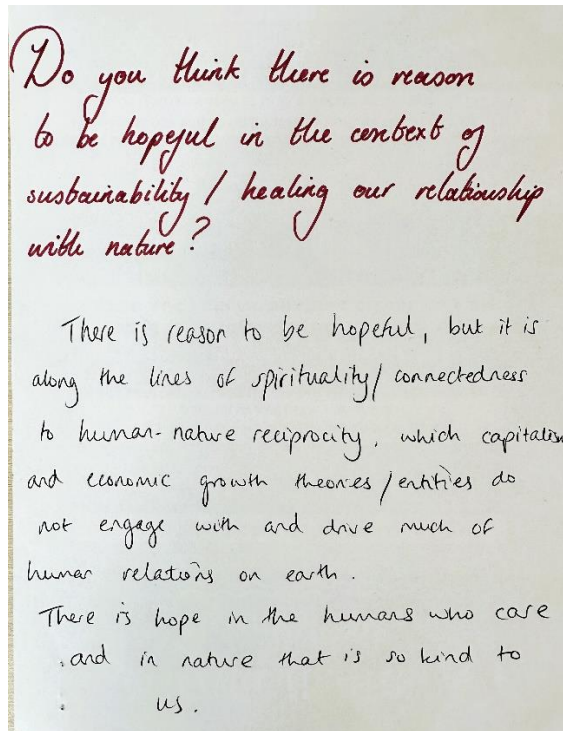


Figure 34 UofG: Student's question answered by their neighbouring participant. Question reads, "Do you think there is reason to be hopeful in the context of sustainability/healing our relationship with nature?" Answer reads, "There is reason to be hopeful, but it is along the lines of spirituality/connectedness to human-nature reciprocity, which capitalism and economic growth theories/entities do not engage with and drive much of human relations on earth. There is hope in the humans who care, and in nature that is so kind to us."

This is congruent with hope as perseverance and resistance within the Islamic tradition and within Islamic environmentalism (IE) in particular. Hope is not perceived to be a passive act, but an act of resistance even when it may apparently seem futile. This is reflected in a commonly known *hadith* (sayings attributed to the Prophet ﷺ), “If the Final Hour comes while you have a shoot of a plant in your hands and it is possible to plant it before the Hour comes, you should plant it.” (Sunnah, 2025, *Al-Adab Al-Mufrad*, Book 27, Hadith 4). The quote refers to finding ourselves with a seed/sapling in our hands on the last day (practicing Muslims believe this world will eventually come to an end, with an afterlife that begins in the next realm) and planting it, even when the person knows it will not grow into a physical tree in this world. The act is perceived to be reflective of agency and resistance, and hope in a new life and beginning even in the face of ultimate destruction. It shifts focus from a narrow understanding of the reward, that of the sapling growing into a tree, detaching us from the immediate outcome with the belief and understanding that the

“harvest” is inevitable, creating a motivation for constructive resistance even when time and the cosmos itself are collapsing. The rewards of sowing a sapling are believed to be intrinsic to this radical act: overcoming despondency even if the world is coming to an end, the affect the planting may have on the internal state of a person facing such an overwhelming event, and trust in reaping the rewards of the planted sapling in the new life and beginning to come. It is unlikely that any of us would find ourselves in this situation - the quote, therefore, is perceived to be a call to action and resistance to the numerous challenges we face throughout our lives on earth.

Through the participatory, democratic process of group problem solving, participants used personal agency to identify reasons for being hopeful, recognising systemic issues, and oppressive power structures and suggested impactful solutions that reflected the use of an ITEL approach to understanding human-nature relationships. Participants’ attempts at identifying hope were also tied to stories of resilience. When inevitable frustrations with current systemic structures would arise within the Ketso problem solving, prompts to identify what *was* working enabled participants to recall stories of hope and resilience to share with the rest of the group. This wasn’t a naïve understanding of hope without holding political powers accountable or simply a personal emotional state. Rather as this chapter demonstrates, the agentic, fieriness of student participants was directed at systemic and oppressive power structures (see section *Riots and revolution. Devotion and dismantling empires* in this chapter). Hope was framed as a resistive stance and tied to action. Freire (2021) cautions both against the pacifying use of hope employed through oppressive politics to valorise individual perseverance over systemic change, and against politically manufactured hopelessness aimed at preventing people from imagining alternative futures. Instead, he ties hope to power which emerges through dialogue, solidarity, and collective action, where even in the face of overwhelming oppression/crises, people are empowered to cultivate agency and resilience (similar to the IE perspectives above) through hope (Freire, 2021).

This dialogue and solidarity between student participants was evident from the group problem solving, where for instance, a participant voicing her frustrations commented on the current state of affairs, “*Things aren’t necessarily getting better. Some things have, but sometimes everything is so much worse.*” The Ketso prompts and ongoing conversations then enabled another participant, originally from Bulgaria, to share about recently

witnessing a small protest in Poland around animal rights and farms. One of the protestors had asked her whether she thought we could ever have “*ideal animal farms*” and she responded in the negative. The protestor then invited her to reflect on how it was only in recent history that women did not have many of their rights in Europe and achieved them only through advocating for them. She reflected, “*And that really made me think, oh yeah, that's a good point! Something that might seem ridiculous...that might become acknowledged in the future.*” These counter responses to feelings of hopelessness were created through ongoing dialogue in community and served to resist both despair and fatalism, as well as a hope without action. Participants’ hope was also reflected in the resilience evident in their responses on the Ketso charts, which included Ketso “leaves” that read “*keep these conversations alive*”, “*stand up for what you believe in/the conversations you’ve had*”. These responses challenged the suppression of voices advocating for socio-environmental justice and supported ongoing resistance to create regenerative and sustainable futures.

The participatory group problem solving built on the connections participants developed with each other through the initial questioning activity and allowed for frustrations to be shared, acknowledged, and processed. Further, an understanding of the “other” allowed for attempts to balance their very valid frustrations with solutions and stories of hope, resilience, and equally importantly humour. “*My bias is just coming out. No finance courses. Yeah. Business and finance abolished!*”, a participant commented derisively in response to frustrations with unsustainable corporate practices and courses at the university. And in response to her peer’s ideas on the Ketso chart to use insects as a sustainable food option she remarked, “*I wouldn’t eat an insect. Not if I’ve got grass instead, so it’s not exactly my dream meal. Cool. Insects and grass. Oh, can’t wait! [soft laugh]*”. The connections participants formed with their peers during the workshops allowed them to validate their struggles in the context of the environmental crisis and share perspectives on hope and resilience. This human-human relationality and sense of togetherness in the context of the crisis contributed to the holistic ITEL perspectives and principles that the participants were using to apply to their chosen sustainability issues.

This section discussed findings that evidenced participants’ strong attempts at “applying” ITEL principles to contemporary sustainability issues. The findings suggest that participatory, democratic, group problem solving was key to facilitating strong, engaged,

discussions and the application of ITEL principles. The process of facilitation also demonstrated that participants engaged in peer learning, attempted to understand each other better, validated each other's frustrations, and cultivated hope as resistance and resilience through both humour and the sharing of personal stories and experiences.

6.2. Disrupting destructive norms and addressing foundational issues

Facilitating participants to apply an ITEL approach to contemporary sustainability issues demonstrated participant resistance to and disruption of destructive norms and capitalist perspectives in the context of the environmental crisis. Participants were significantly aware of an ITEL focused approach to problem solving that addressed foundational and systemic issues contributing to the crisis and advocated for ideas and solutions reflecting degrowth. Their proposed solutions also reflect long range thinking evocative of deep ecology perspectives, that look beyond short term, shallow fixes for sustainability challenges.

Participant responses indicate that their proposed solutions were driven by both; a) the prompt to use an ITEL approach to problem solving, and b) their need and desire for systemic foundational change. An analysis of the data shows that both a and b are intertwined. This points to the frustrations participants felt (see previous section) with systemic capitalist, consumerist, and materialist socio-economic structures - factors they viewed as some of the main challenges behind the environmental crisis. These frustrations compelled them to question the root causes of the crisis, thereby problem solving for these foundational issues. The data suggests that participants proposed solutions that prioritised community, human-nature reciprocity, and holistic conceptions of human-nature relationality not only because they were prompted to use an ITEL lens, but also because these factors were believed to be important to resisting and disrupting the environmentally destructive norms they had identified within their groups.

6.2.1 Resisting and disrupting capitalist, consumerist, and colonial perspectives

Participant solutions and responses to self-identified challenges to a regenerative and sustainable “community” (WCDT), “food systems”, “student life” (UofG), and “symposiums” (SFGN) reflect a strong resistance to and disruption of socio-environmentally destructive norms and capitalist perspectives.



Figure 35:UofG: Resisting, disrupting, writing, sharing.

A WCDT participant while discussing solutions within the group reflected on tokenism, specifically within corporate businesses such that even bottled water was made to look sustainable,

“...for a long time, like 10 or 15 years, maybe longer they’ve all said, for every bottle of water you buy we donate 20p or 2p to a water project. That you have to put some sort of donation onto you (the buyer) to make people think they’re buying a good thing. Like, you’re selling a pointless product! They could have just kept good water fountains around Glasgow and people would be able to get a drink somewhere.”

This participant identified the hypocrisy within capitalist, corporate culture where environmentally destructive products are marketed deceptively, making customers think they are contributing to sustainability efforts, deflecting from the reality of buying another plastic bottle that ends up in an ocean or landfill. Similarly, in response to problem solving for transport issues within the community, a participant commented on how community organisations such as the WCDT were involved in some excellent work at introducing people to the “*excitement and joy of cycling*” and then,

“Wow! Wow! A family suddenly are united, and they can go out for a cycle in the countryside. Yeah, yeah...and then the countryside gets more care and attention because people go, oh, people are using it. Mm-hmm. So, we’ll put more money into it. We’ll put more money into enabling people that are poorer to be able to access it.”

This participant appreciated more than just the simple act of cycling as a sustainable alternative to other forms of mechanised transport. He painted a wider picture with the long range impacts of cycling for us to appreciate together as a group. In his view, cycling could not just bring families together but redirect funding and resources to natural spaces allowing people from all socio-economic backgrounds to access natural spaces. Both the above responses suggest deep, long range thinking pointing towards degrowth where mechanical transport is reduced and plastic bottles are eradicated. The first disrupts the environmentally destructive norm of using a “*pointless*”, harmful product to advocate for water fountains, and the second disrupts the norm of using cars to propose a solution that could have wide ranging impacts for deeper human-human and human-nature relationality. Participants across the research sites displayed a strong desire to disrupt and resist similar norms, including norms that led to experiences of stigmatisation when individuals opted for sustainable practices. A WCDT participant shared that people could “*...be shamed in certain environments with certain people...*” for choosing differently, sharing that her extended family did not approve of her small daughter being vegetarian. Her daughter she shared,

“...was finding out what meat was, and she was totally horrified. And she didn’t want to eat meat. I think a child’s natural response to that when you’re not in a survival situation is [gasp] whoa! Because they’re, they have empathy towards creatures.”

Similarly, at the UofG, social stigmatisation for using community refrigerators or donated food was identified as a barrier for students to access these, and a norm to be disrupted through normalising their use and removing the stigma attached to it.



Figure 36 UofG: Reading participant questions and responses to invite reflections and comments within the circle.

Students also actively resisted the norm of thinking poorly of human intentions and inclinations when making ethical choices in the context of human-nature relationships, specifically human relationships with non-human beings. For instance, during the initial question and response session before the Ketso work at UofG, a participant asked a question about how people felt about the practice of domesticating wild animals, breeding them into “*weird versions of themselves for pleasure/entertainment*”. The written response from their neighbouring participant said, “*I think it’s all part of humans’ tendency to control and optimise and destroy everything...*”. When the response was read out for the group, the majority of participants actively voiced their disagreement, resisting the norm of thinking that all humans had a tendency to destroy and control. They emphasised the presence of human empathy towards creation, like the WCDT mother (above) reflecting on her child’s empathy for animals. An excerpt from their conversation is shared below:

Participant 1: *“I don’t think it’s human nature to do those things, I don’t know if we think of it as human nature. That’s not very useful for trying to change it.”*

Participant 2: *“Yeah, I would agree. I don’t think it’s in our human nature to control and, I guess, treat nature for example, in this way.”*

Participant 3: *“It’s nurture, rather than...it’s more about your environment.”*

These participants underscored the presence of the *fitrah* that every human is born with. From an IE perspective, the *fitrah*⁸ always inclines to good, however, it may get concealed through an individual’s upbringing and what they are exposed to, including their environment and nurturing as the participant suggested above. Similar resistance to and disruption of destructive norms was evidenced through participant discussions around food waste. SFGN participants emphasised managing food consumption and waste at community symposiums, in addition to ceasing the use of single use plastic. One of the UofG student groups deemed the issue so crucial that they chose to use their entire Ketso activity to problem solve for regenerative and sustainable “food systems”. The incredulity of disposing off or destroying food when people couldn’t afford basic food supplies or were suffering through famine in many parts of the world was expressed by many participants. A UofG participant, for instance, commented on her experience of dumpster diving during her undergraduate studies, remarking on the capitalist and materialistic norms that made dumpster diving illegal but allowed for the intentional destroying of unsold food items. Similarly, a WCDT participant from Glasgow shared how when he was a child a couple of decades ago, he couldn’t believe what his aunt who worked at a Marks & Spencer’s food outlet told him...

“She says, oh, we have to go out and pour blue dye over all the food. And it’s not even out of date. That was like when I was a wee kid. They just wouldn’t allow anybody to have it so, so they just ruined it. And we just sat there and went, I can’t, I can’t, I can’t believe it, I can’t believe it!”

⁸ The primordial nature or original disposition of the human being. Humans are believed to enter this world in a state of purity and innocence from an IE perspective.

From a deep ecology perspective, this points to a lack of self-realisation, the absence of which prevents individuals from identifying with the natural world, including other humans within it. The participants through their responses, however, strongly exhibited being on paths towards greater self-realisation, a core concept and one of the two “norms” of Naess’ environmental philosophy. Self-realisation emphasises deep identification with all living beings, and as Naess (2008) asserts, only through self-realisation can humans experience interrelation and interconnection with the natural world and all that exists within it, to shift their consciousness from egocentrism and live in increased harmony with other beings on earth. Self-realisation naturally leads to individuals developing their own ecosophy, reflecting deep ecology principles (see also Chapter 3: *Theorising for Education for Sustainability and Regeneration*). Through participatory, group problem solving and attempting to use an ITEL lens, participants actively resisted and disrupted destructive norms and advocated for foundational solutions, both reflecting participants’ ongoing processes of developing their personal ecosophies. The resistive spirit demonstrated by participants is reflective of the principles of an ecopedagogical approach to learning which advocates for a radical, critical approach to environmental education that supersedes disciplinary boundaries when responding to the environmental crisis.

Although students at the UofG came from different schools, and community participants at the WCDT and SFGN came from similarly varying backgrounds, participant responses do not indicate any impediments created by disciplinary boundaries. Resistance to oppressive, capitalist, consumerist, and materialistic socioeconomic structures was continuously exhibited through participants’ addressing of foundational issues and proposed solutions. Through group work and continuing dialogue, student participants at the UofG noted how “...powerful, powerful people just are preventing the changes we need to make”, and how the war in Ukraine and problems elsewhere in the world were being blamed for systemic issues in the UK.

*“It’s like this bad thing everywhere, somewhere else, that you can blame stuff on. Whereas, all of this stuff is...it’s here and it’s, it’s f***ing up people’s lives. Actually, people aren’t struggling to eat because of the war in Ukraine, they’re struggling to eat because of this [systemic issues] stuff.”* (pointing to the challenges identified on the Ketso chart).



Figure 37 UofG: Post workshop image of a student group's work on a Ketso chart.

Participants' written responses on the Ketso charts equally demonstrate strong resistance to and disruption of destructive norms and solutions that target some of the foundational issues leading to the crisis, including capitalism, materialism, and colonialism. Some of these responses include: *"build less giant needless offices"*, *"farming taught in schools with community garden accessibility"*, *"less working hours and more time to cook"*, *"3 to 4 day work week + time for reproductive labour"*, *"end capitalism"*, *"degrowth + wellbeing economics"*, *"establish educational board of traditional/indigenous expertise"*, *"regenerative systems"*, *"decolonised curriculum in all subjects"*, *"use indigenous farming as a footprint"* and so on. As these examples demonstrate, participants fully engaged in *tadabbur*⁹ (deep reflection) on the foundational issues responsible for the environmental crisis suggesting solutions that reflect a deep sense of *muhaasaba*¹⁰ (accountability). They evaluated the actions and behaviours of the *nafs al-ammarah*¹¹ (ego-self) and attempted to rectify its excesses with their proposed solutions intending to enact

⁹ The word has literal meanings of: to ponder, to reflect. It is used to signify contemplation. The meaning of the root letters *da-ba-ra* mean the end of something. So, to deeply reflect on something and consider its consequences to the very end.

¹⁰ The root letters *ha-sa-ba* indicate meanings of counting, calculating. The word translates to taking accountability of our (or humankind's) actions, in this case, in the context of the environmental crisis.

¹¹ Translates to the inciting/dominating soul. This is the *nafs* or part of the soul that incites to excessive worldly desires, appetites, and wants and can lead to a person being dominated or overcome by these. May be understood as singular or plural.

meaningful change through resistance to and disruption of environmentally destructive norms and practices.

This section discussed findings that emerged from the process of applying ITELs to problem solve for sustainability issues. The prompts to use an ITEL approach through participatory, democratic, group problem solving encouraged participants' existing resistance to environmentally destructive norms, enabling their disruption and demonstrating that participants viewed them as foundational issues to be addressed for long term solutions for sustainability and regeneration.

6.3 The complementary nature of student and community perspectives and the latent power within

The participatory, democratic, group problem solving to apply use an ITEL approach to address contemporary sustainability issues also demonstrated the complementary nature of student and community responses. While student responses evidence a feisty resistance charged with a strong energy focused on urgent action and an expectation of movement, change, and having their voices and concerns heard *now*, community responses in contrast indicate a comparatively more situated energy appreciative of slower long term work. When combined they represent the wholeness of yin and yang (Wang, 2012), the intertwined Celtic strands that make the pattern whole, the complementary energies of summer and winter and so on. The reason I find this so powerful is because I see the combination of these responses as a strong resistive force that is effective both in the short and long term, akin to the very rhythms of nature that have sustained life on this planet for thousands of years.

These complementary responses strengthen each other when brought together, pointing to the potential of bringing younger and older generations together to tap into the latent power of this collective. Although participant responses on Ketso charts (see Appendix H) from both the *apply* workshops (WCDT and UofG) might seem similar, the audio recordings reveal the varying intensities and nuances in approach from the different sets of participants. Participants from the WCDT and the SFGN were comprised of adults from varying generations, with the exception of some students at the SFGN iteration, while

those at the UofG were exclusively students (mostly undergraduate and postgraduate, with one doctoral student).

The complementary nature of responses gestures towards the potential for intergenerational collaboration much like the coming together of individuals from a range of cultures and backgrounds as explored in the previous chapter. It is evocative of folk tales and stories I heard and read as a child that showcased the relationships of parents/grandparents and children, the child's ebullient, active energy combined with the adult's wiser, experienced one that often led to both the child and the parent/grandparent appreciating wider perspectives around their lives, allowing them to resolve challenges together. In an increasingly globally connected but paradoxically disconnected world, it has become ever more crucial and challenging to bring people together in tolerance, compassion, and understanding, whether it's individuals from different cultures or even generations within the same family. A comprehensive picture of this complementary dialogue across the research sites can be appreciated through the following discussion that brings together both student and community perspectives, including those from the intergenerational SFGN iteration where both students and adults of varying generations participated in the research workshop.

6.3.1 Riots and revolution. Devotion and dismantling empires

A WCDT participant from Scotland, while addressing sustainable and regenerative options for holiday celebrations, shared her grandmother's story. She narrated that her grandmother had the same tree and decorations for Christmas her whole life and the discussions she was having with the group strongly reminded her of her grandmother's choices because of "*...a sense of belonging and a community and going back through the generations*" that made it easier for individuals to maintain traditions of passing down cherished items for use. As her grandmother had passed away, she commented on the importance of carrying on "*her [gran's] torch because she really cared about people coming together and supporting our community.*" This participant had also started facilitating workshops to reconnect people with the natural world and shared that it was important for her to draw people into developing connections with nature through simple conversations or observations that would intrigue them. She shared that by

“...looking at the details of a trunk of a tree or they’re looking at the [tree] canopy that they’ve never actually noticed before that, can be things like that...that almost trigger people into having an awareness”.

The participant’s reflections speak to the importance of developing traditions within the family that contribute to an intergenerational practice of sustainability that goes beyond the lifetime of an individual, such that the traditions in themselves promote the sustainability and regeneration of people and nature. Further, the art of drawing people into conversations and facilitating them to “see” natural physical forms and perspectives with new eyes was considered to be crucial to developing thought and practice in the context of addressing sustainability issues. Both these examples reflect a long term perspective, evocative of the long range deep ecology movement; the effort of continuing a practice through generations and intending to use educational spaces to draw people into circles of awareness and connection with the natural world, inspiring greater action.



Figure 38 WCDT: Community participants working on a Ketso chart for a "Sustainable and Regenerative Community".

Another WCDT participant in response to the opening quote for the workshop also commented on how *“...selfishness, greed, and apathy take generational changes”* highlighting the importance of long-term thinking and action. She shared her reflections about a podcast where a couple shared their thoughts about the difference between the idea

of sacrifice versus devotion, when it came to “giving up” material conveniences for the environment. The couple on the podcast lived on a canal boat and used cloth nappies for their child. The father explained that the practice wasn’t simply about giving up the convenience of throwing a dirty nappy into the trash. The participant, recounting his narrative, explained that he genuinely derived fulfilment from his choices,

“...the act of washing just feels like a devotion to the world, like to your natural world. And he’d kind of turned it into this quite spiritual thing and it was really nice to hear...the amount of water that the person uses in their house to wash them is significantly less than a company uses to produce plastic nappies”.

The idea of devotional action resonates strongly with Naess’ arguments against pushing individuals to “sacrifice” certain behaviours or habits and instead enabling people to build strong human-nature relationships. This he argues, inspires them to be naturally motivated, making it easier to choose healthier behaviours for themselves and the environment due to their love and deep relationality with the natural world. The deep ecology perspective suggests that this could even feel like a joyous action to engage in, to derive pleasure and satisfaction from, when nature is perceived from a relational perspective instead of an entity we need to protect or sacrifice for. These slower, long term perspectives were also reflected within conversations around entrenched systemic structures challenging current and future efforts towards environmental sustainability and regeneration. Another participant at the WCDT, also from Scotland, commented on how the very people who realised how problematic these structures were, were often the ones that strove to change them...

“And structures like that have been dismantled before, like the Roman Empire for example. Yeah. And it’s maybe the spiritual, cultural transformation within um...it’s within that systemic structure. It’s within it [the Roman Empire], people suddenly go...no! This is wrong, this is wrong. And then, they say, well, we’re the ones that can change it”.

This reflects the belief and historical fact that even empires can be dismantled, and reflecting on this within that particular moment evidences this participant’s appreciation of human agency, resilience, and effectiveness, even if the resistance was against a massive

empire and initiated with a few people. Similar sentiments around slow, long term resistance and consistent effort were shared throughout the WCDT participants' discussions. The participant who reflected on the Roman empire also commented on how school children in Sweden campaigned for the climate crisis through striking "...and it was all motivated by one girl (Greta Thunberg)". In response, another participant who grew up in Scotland shared her story of being involved with striking for wearing trousers when she was at school – "*and it was because they wouldn't allow us to wear trousers. And in a village. And most days we had to walk. So, eventually we got to wear trousers!*" The workshop participants cheered for her and she elaborated, "*Yeah. When people come together, things can change, but sometimes it's hard. And that too, think small first.*" Others also reflected on the "*hard*" parts of resistance, specifically the decision fatigue that came with choosing better options. A participant reflected on finding it difficult to decide if the benefits of an activity for the environment outweighed its harms, the resulting feeling of "*...getting tied up in knots*" and how sometimes "*...it's hard to find a balance in it.*" However, she also shared later how excited she was about this research project and the intentions behind it,

"I'm so excited you're doing this. Like, so excited. I love that this is going to become some paper that is available to people [...], and I know you've put so much work and thought into it."

The sense of hope and positivity that participants felt simply by realising that others also cared for the same causes they did is evident from participant responses across the research sites (see Chapters 5: *Revive* and 7: *Celebrate*), pointing to the increased need for and importance of bringing people together when responding to the environmental crisis. Observing the above statements, it seems that correlating the environmental crisis to the problematic aspects of an empire is quite apt considering its global nature and magnitude, especially in the context of its development through colonisation, the industrial revolution, and ongoing global inequities. However, the long term vision and perspectives evident from the participants' continuing dialogue prevented them from despair; realising that structures of comparable magnitude were dismantled and rebuilt for the better allowed them to envision similar outcomes for the future. Through expressing their challenges and being in conversation with their peers, participants were able to reframe their struggles and appreciate the long term impact of their everyday decisions. These long term perspectives

combined with the idea of generational resistance (from the participant's wish to continue with her gran's work above) inform some of the key ideas of Naess' long-range deep ecology movement. From a deep ecology perspective, urgent transformative change is needed, however, these transformative efforts also need to continue, develop, and adapt to the situation as it evolves (Naess, 1986, 2008).

Similarly, from the perspective of Islamic environmentalism (IE), the environmental crisis requires consistent, sustainable, long term effort and an appreciation of wider perspectives of life on earth and beyond. This is understood from the belief that humans experience exponential spiritual development and growth during times of struggle and resistance when faced with challenges, and this growth is understood to continue throughout the life of an individual on earth. The greatest struggle humans can undertake in their life on earth is *jihad-bin-nafs* (struggle against the ego-self), both our individual and collective egocentric selves, and in the case of the environmental crisis against individual and collective hedonism, greed, apathy and the various ills leading to the crisis. *Jihad-bin-nafs* is considered to be the ultimate struggle of the human being, simply because of the consistent struggle required with the intentions and practice, in this case, of moving towards sustainability and regeneration. This struggle is further magnified by the chaotic and imbalanced societal mechanisms that drive socio-environmental injustice and oppression. Resisting these structures through all means and possibilities, as the participants noted above, requires consistent, long term effort and resilience, made possible through the support of community no matter how small it is.

The IE concept of the *nafs* has similarities to the ego-self conceptualised within many faith and spiritual traditions, including the folklore of *Windigo* in the Algonquian Native American tradition. The *Windigo* is said to be a spirit-like creature, a cannibalistic beast that has an insatiable hunger for human flesh in some oral traditions and is consumed by greed, consumption, power, and self-interest (Kimmerer, 2013). Within the context of the environmental crisis, Indigenous peoples including Kimmerer, liken this to individual and societal greed and consumption promoted by modern capitalism, imperialism, and consumerism. Mindless excess in certain parts of the world becomes a cannibalistic act through eating into the earthly provisions of our fellow inhabitants on earth, creating profound physical and spiritual harm, specifically for those overconsuming and negatively impacting their spirit in the process. The antidote as Kimmerer explains is to cease feeding

the *Windigo*, the *nafs*, through transforming our relationship with the natural world and its inhabitants, both as a practical and spiritual necessity.

The community responses at the WCDT both contrast and complement student responses at the UofG. The contrast evidently lies in the approach to problem solving; where the community responses demonstrate long term, generational perspectives appreciative of the slow, consistent work required to dismantle oppressive power structures, student responses demonstrate a greater focus on urgency, action, and mobilising, evoking a fiery, youthful energy directed towards and appreciative of expediting outcomes. Some of the writing and ideas on the “leaves” from the UofG Ketso charts (see Appendix H), addressing regenerative and sustainable “student life” and “food systems”, that stand out on account of their repetition and feistiness are: “*strikes*”, “*riots*”, “*chaos*”, “*anarchy*”, “*revolution*”, “*uprising*”, “*protest for government action*”, “*end capitalism*”, “*activism*”, all with intentions of being disruptive to those in power, specifically where power is being abused to prioritise “*...profits over people*”. Students also shared their frustrations with university management being negligent of student and staff demands and how “*direct action was key*” to, for instance, the dismantling of colonial era statues in the UK and creating awareness around colonial legacies.

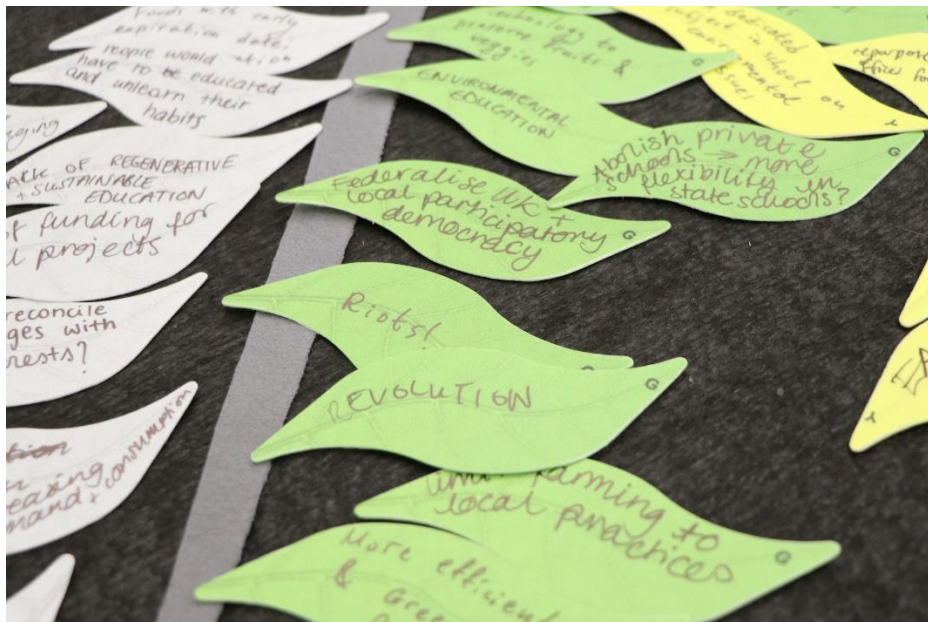


Figure 39 UofG: Ketso chart 'leaves' read: "Riots", "Revolution".

Others commented on how even though the CoP 26 in Glasgow was “*a green washing event with car sales*” where “*...indigenous people were excluded or treated very badly*”, it was still effective in making “*...a lot of people angry to the point where they started doing activism*”. Strong sentiments were also expressed through the desire to “*eradicate billionaires*”, “*destroy supermarkets*”, and wanting “*...anarchy. Just, burn everything down and start again*”, in response to the frustration that arose for some student participants when problem solving and feeling like “*...nothing is working.*” These feelings and frustrations were summarised by a student who reflected, “*That's the thing, I feel like, quite drastic action is proportionate, really, to what's happening.*” The student participants need for “*drastic action*” is evident throughout their responses to the Ketso problem solving activity demonstrating that it was justified and “*proportionate*” to the magnitude of the crises we are facing today.

Where the community participants’ response to the magnanimity of the crisis was to create narratives that evidenced the dismantling of similarly oppressive structures in the past, appreciating the time and effort that went into the process, the majority of the student response was focused on channelling their frustrations into immediate, urgent, and impactful action. As the responses evidence, students were comparatively easily frustrated with the slow change they observed within society and with their peers. Expectations of change that was quicker and effective naturally led to more frustrations, especially when they looked at their proposed solutions on the Ketso chart and contrasted them with their identified challenges that prevented their solutions from materialising. Some of the challenges identified include “*mentality*”, “*student nihilism*”, “*capitalism*”, “*lack of knowledge about resistance*” and “*student unwillingness to face the crisis and act*”.

There were also moments during the Ketso facilitation where a few students expressed their dismay at the scarcity of positive things to write on the brown leaves representing the soil (for what is working). They shared feeling upset and angry when thinking of solutions to food waste and thinking of the tons of perfectly good food being disposed of by supermarkets, instead of being shared with people in dire need. In both cases, however, other students within the groups balanced the conversation with hopeful perspectives and reflecting on the importance of a wider perspective. As the facilitator, I drew attention to greater awareness and improved practices around sustainability and regeneration that did not exist even just a decade ago. Students also shared their own thoughts on some of these

developments drawing consensus from their peers, noting that even performative actions were sometimes a hopeful beginning for greater action in the future.

Participant 1: *"... but actually, there is value in that (public acknowledgement of colonisation), and that's only been happening for about the past ten years... it was at the start of every lecture that I had in Vancouver, we acknowledged that we're on this land, every professor had to do it really, it became the universal, and apparently ten years ago that wasn't even a thing and it can seem performative but it's not. Maybe it's the first step, early step and then building infrastructure that is for these people on this land."*

Participant 2: *"...the creation of international legal norms is...the more that they are used and recognised, the more it's like a boomerang effect. So, with land acknowledgement, it can seem performative, but again, people say we recognize that we are on this land, you create a norm. And when there is any sort of legal battle over who's on the land, there is that de facto norm that they can umm... so it creates a discourse that they can use and a knowledge base to go back to. It's limited because they're still having to engage in a structure that has oppressed them. But it's, it's the start of... yeah, I don't know if you've looked into normed diffusion. That's a good thing to have."*

Students took agency for their own mindsets and their groups' trajectories guiding them towards hopeful and positive perspectives. This might not have happened for a lone student trying to "problem solve" for a sustainable and regenerative "student life" or "food systems" on their own. The power of working together, in community, where we hold space for each other reminding people of different perspectives during a difficult time is something we have all experienced, and this was clearly demonstrated through both participant groups working on the Ketso charts. The resistive, participatory, and democratic eco-pedagogical space provided students with the opportunity to experience and role-play what problem solving in solidarity feels like. It provided them a template to work with, to emulate similar or better iterations of problem solving for challenges together in the macrocosm of the world outside, *with* people, and overcome feelings of frustration and hopelessness because they had fellow humans to walk together with them.



Figure 40 UofG: Ketso leaf reads, "keep hopeful and pro-active".

As the discussion above demonstrates, responses from both the community and student participants strongly complement each other bringing together both short and long term perspectives, the slow and the fast, the urgent, agentic drive and the consistent effort, all merging to evoke a sense of both immediate and sustained resistance and revolution – the integrated impact of the crashing wave and the slow erosion through water over time. The findings have strong implications for the need for and possibilities of intergenerational and intercultural collaboration, bringing together a diverse group of young adults/students and older adults/community members in the context of teaching and learning for sustainability. Data from the SFGN workshop, for instance, evidences a comparatively balanced participant dialogue and approach to problem solving. Participant dialogue and written solutions shared through notes, within the group problem solving activity, reflect a greater stability such that a general group propensity towards immediate action or long term vision cannot easily be identified. Despite its comparatively brief nature, the practice of intercultural and intergenerational problem solving at the SFGN workshop suggests strong potential for tapping into the latent power residing within an environmentally conscious group of people that cuts across generations, cultures, and geographies.

Some of the written responses from SFGN participants for “sustainable and regenerative symposiums” included; “support and encourage nature conservation”, “plan to reduce carbon footprint by flying less”, “more inclusion and diversity”, “have a plan of managing

food and water wastage (responsible consumption), “*honesty*”, “*gratitude*”, “*celebration*”, “*mindfulness*”, and other long term efforts such as “*empower communities to dialogue with each other on issues that affect them*”. These responses understandably address the obvious sustainability concerns of waste and the carbon footprint from flying, however, they also demonstrate participant concern for holistic and integrated perspectives that involve the sustainability and regeneration of the symposium through the practice of honesty, gratitude, mindfulness, increased inclusion and diversity, and empowering communities to use their agency. It would be very valuable, therefore, to further explore intergenerational participation and the dynamics of a similarly oriented participatory, democratic, group work activity. For the purposes of this study, however, it is evident from the responses that every participant was attuned into their natural inclination of being a *khalifah*¹² - they addressed issues related to not only excessive material consumption but also to the sustainability and regeneration of local communities, the human spirit, and the earth. Within IE, a sincere *niyyah*¹³ or intention is the seed of all action, and all actions are rewarded based on their intentions. Participants across the sites evidenced this sincere *niyyah* (intention) for reinstating the *mizaan*, or balance, within the earth itself, within human-nature relationality and within human-human relationships.

This section explored participant dialogue and Ketso writings to discuss findings that evidence the complementary nature of student and community responses within the *apply* workshops. Participants across the three sites demonstrated strong intentions and effective solutions for sustainable and regenerative practices and futures through the application of an ITTEL approach to problem solving. However, they evidenced slightly different energies with students opting for urgent, agentic action and community members leaning towards greater appreciation of sustained effort and resistance over longer periods of time. The complementary nature of student and community perspectives at the UofG and the WCDT, and the nature of intergenerational dynamics at the SFGN, suggest a presence of latent power within these narratives pointing to the extraordinary potential of intergenerational collaboration and problem solving for contemporary sustainability challenges.

¹² Stewardship of the earth, treating it as a trust that is inherited and has to be passed on. Signifies deep consciousness and care, and material and spiritual relationality with the earth.

¹³ Literally translates to intention. In the Islamic tradition, intentions are believed to be a powerful first step towards an action. Humans are rewarded for a good intention, even before converting it into action.

6.4 Chapter conclusion

This chapter detailed and discussed findings from the application of ITELs across the three research sites. The findings illustrate that participatory, democratic, group problem solving was key to applying an ITEL lens to contemporary sustainability issues. Participants demonstrated significant awareness and knowledge of ITEL perspectives prioritising community, socio-environmental justice, and deep care and consciousness for the natural world. They exhibited a strong attempt at using an ITEL approach to problem solve for sustainable and regenerative “food systems”, “student life”, and “community symposiums”. This problem solving took place and evolved *with* people, in community, enabling participants to share their challenges and frustrations, and feel validated and supported in their personal journeys towards more sustainable and regenerative ways of thinking and being. The participatory, group problem solving also enabled participants to develop a greater understanding of each other through: the pluriversal spaces (Escobar, 2011); open, unstructured, communication and dialogue; engaging in peer learning; and developing balanced narratives of hope and resilience. Both student and community responses evidence the strong collaborative work that participants engaged in and drew strength from.

Participant responses on the Ketso charts and throughout the participatory group work activities reflect a range of ideas and solutions, indicating both the diversity and uniqueness of the responses and the pluriversal ways in which we can practice environmental consciousness, care, and a restoring of the *mizaan*. These findings point to the need for the convergence of diverse people, using equally diverse skills they *enjoy* and find meaning in, to contribute to sustained, impactful solutions and actions for the environmental crisis, akin to the diverse species that sustain and regenerate an ecosystem.

Participant responses also evidence a strong resistance to and disruption of environmentally destructive norms and practices, specifically as they relate to capitalist, consumerist, and colonial ways of thinking and being. These responses were driven by both: prompts to use an ITEL approach to problem solving and participant frustrations with current socio-economic systems, creating the desire to address foundational issues responsible for the crisis. The process of facilitating an “application” of an ITEL approach demonstrated the complementary nature of student and community perspectives. Student

participants evidenced a fiery, youthful energy in their responses leaning towards immediate, impactful action, while community participants evidenced a comparatively situated energy appreciative of consistent, long term resistance. These findings have strong implications for intercultural and intergenerational collaboration to respond to and effectively address contemporary sustainability challenges.

The *apply* workshops (and the *apply* section of the SFGN workshop) were designed to further participant engagement with ITELs following the introductory *revive* workshops (and *revive* section for the SFGN workshop). They proposed a practical consideration of ITELs and their application to current sustainability issues, allowing for a micro experience of working together in community, across differences, disciplines, cultures, and generations to respond to the environmental crisis within the macrocosm of the real world. The practical actions of trying to problem solve for the seemingly encompassing challenges of the crisis led to re-enforced community spirit, hope, and resilience through difficult questions and honest conversations, enabling participants to refine their perspectives, develop their ecosophies, and reimagine what can be possible in the long-term struggle for sustainability and regeneration.

7. Cele-brate

Acknowledge and honour with a social gathering.

This chapter discusses the findings that emerged from the celebration of indigenous and traditional environmental literacies (ITELs) across the three research sites and responds to RQ3 - how can individuals be facilitated to celebrate ITELs and what is demonstrated through this process? The chapter draws on data sources from the *celebrate* workshops at the Woodlands Community Development Trust (WCDT) and the University of Glasgow (UofG), and the *celebrate* section of the condensed workshop at the Sustainable Futures Global Network (SFGN) symposium in Malawi. The data sources include audio transcripts, photos, participants' artefacts (both verbal and material), written responses, and observations from the Sharing Circles, postcards and embodied expressions (UofG), Celtic knot making (WCDT), opening meditations/activities, and closing thoughts (see also Tables 3 and 4 in Chapter 4: *Research Inquiry: design and methods*). An in-depth analysis of these data sources using the intertwined theoretical lens of ecopedagogy, deep ecology, and Islamic environmentalism (IE) shows strong participant receptivity and openness to ITELs. This was reflected within the various artefacts they shared (from their indigenous, faiths, and/or cultural literacies) within the Sharing Circles, through their embodied responses to ITELs, and the sense of community they felt when collectively engaging with ITELs. This acknowledgement and honouring of ITELs within a social gathering contributed to a collective celebration of these literacies across the three workshops sites.

The concept of celebration within this inquiry is used to challenge perceptions of indigenous and traditional environmental literacies (ITELs) being outdated and backwards and to reclaim these historically marginalised knowledge systems and literacies for contemporary contexts, both as a decolonial act and an affirmation of plurality of existence. Celebration in this context, therefore, becomes resistance. This is in contrast to tokenistic or performative inclusion of ITELs, and is instead, an ecopedagogical tool to resist the systematic and (neo)colonial erasure and suppression of ITELs. Celebrating ITELs through a decolonial and pluriversal framework within this research inquiry, specifically within mainstream spaces of teaching and learning that are deeply impacted by Euro-Western onto-epistemologies equals: reclamation of marginalised literacies, knowledges, and voices; onto-epistemic affirmation of plural ways of thinking and being;

and joyful resistance (Hooks, 2018). Bell Hooks writes powerfully about education as a practice of freedom (Hooks, 1994) – the critical, radical practice of sustainability education within this research inquiry hones in on the immense power of reviving and celebrating our unique identities, cultures, faiths, and traditions and the ITELs embedded within, freeing us from the psychological shackles of imperialism and (neo)colonial onto-epistemic hegemony (Said, 1994b). As an analytical tool, celebration was identified and marked by participants’ resistance of (neo)colonial, dualistic, and materialist perceptions of human-nature relationality. This resistance was reflected in the act of representing their connections with the natural world through the lenses of their own cultures and traditions through the beautiful songs, poems, stories, and artwork offered within the Sharing Circles. These artefacts reflect deep personal, emotional, and spiritual connections surpassing superficial affirmation of ITELs through their rootedness in participants’ lived experiences and indigenous, faith, and/or cultural traditions.

Data across the celebrate workshops was analysed through the analytic process of thinking with theory (Jackson and Mazzei, 2023), or interweaving data with the theoretical lens of the inquiry, followed by parallel and intertwined readings of both that highlighted recurring moments of resistance and celebration in community. A diffractive reading (Murriss and Bozalek, 2019) of artefacts using the three theoretical lenses resulted in for instance: ecopedagogy highlighting critical moments of pedagogy that resulted in resistance as celebration through participant artefacts, deep ecology highlighting the deep connections within these artefacts to non-human life and life forms, and Islamic environmentalism (IE) highlighting participants’ understandings of the earth as a trust and its care as environmental stewardship within their artefacts.

The findings presented within this chapter demonstrate that sharing these personal connections to nature through an ITEL lens and embodied inquiry were key to enacting a celebration of ITELs. Further, this celebration of human-nature relationality through ITELs enabled reflections on deep connections with the natural world, encouraged creativity, and inspired feelings of hope and resilience. Participant engagement with the workshop activities evidenced openness to and meaningful engagement with ITELs, creating a “safe space” where difficult emotions and frustrations were addressed, enabling a sense of community despite the short time we shared together. In the following sections, I explore

and illustrate these findings, in particular, the power of connection and community through an analysis of imagery, participant dialogue, and embodied inquiry.

7.1 Offerings: making connections to nature and tradition

As a significant part of the celebrate workshops, the Sharing Circles allowed participants to share personal connections to the natural world through stories, poems, art, songs, memories, objects and so on. These artefacts shared as offerings enabled participants to make important connections to both nature and tradition and were key to celebrating ITELs. Making these connections was a powerful way for them to realise their relationality with not only the natural world but with other humans, evoking a deeper sense of connection with the world around us. With their offerings, participants made personal connections to the natural world through their indigenous, faith, or cultural traditions, many of which also reveal their emotional and spiritual connections. The Sharing Circle enabled participants to acknowledge and honour, and therefore celebrate, the diversity of traditions and the environmental literacies embedded within. The very act of affirming their own and others' connections to the natural world allowed for an appreciation of this diversity, where celebration was enacted through engaging with personal stories and artefacts of connection to the natural world using ITELs.

All the participants for the Sharing Circle at the Woodlands Community Development Trust (WCDDT) were from the United Kingdom (mostly Scottish heritage), there were participants from various heritages at the University of Glasgow (UofG) iteration from across Europe including one from Mexico and one from India, and participants from a mix of traditions at the Sustainable Futures Global Network (SFGN) symposium (European, Indian, but mostly central/southern African). Participants were either born and raised in these places, identified with them as part of their heritage, or were currently living there and considered it "home". Participants' connections to place and tradition are only mentioned where they themselves identified their offerings to originate from these places. The focus of this section is rather on the connections they made to the natural world through ITELs, whether these originated from the lands they identified with or not.

7.1.1 Kites, kingdoms, stags, and stories from Poland

Participants brought various items for the Sharing Circle, including a self-made kite, a poem, and stories from their childhood. At the WCDT, one of them joined the workshop after an Afghan festival at the Glasgow Green (a park in the city) and shared how he had brought with him the very first kite he had ever made, during the festival.

“So, this is my first ever kite, and a really, really polite young Afghan gentleman said, Sir, I don’t think that will fly. And I went, well, it doesn’t matter. I really enjoy making it. And I love the colour. And it’s the plate that I had the lovely Afghan flatbread on and sweet, you know, the sweet meat. So, I used the plate. I thought...wouldn’t that fly. And then when I went in, I picked up these that were excess and the tissue paper. And for me, it flies! And it actually really spins when it catches the wind because of the sort of rectangular shape of it, and the plate in the middle I think...it really spins!”

This participant, who had Scottish ancestry and had grown up in Scotland, was fascinated by how good the Afghans at the festival were at flying kites, noticing how their kite strings were slack, but their kites were still “...*dancing in the (air) current*” flying really high, “...*the way birds do it.*” His childlike enthusiasm about the kite he made from repurposed materials, his metaphorical elaboration of its interaction with the wind, and the joy it produced for him speaks to the awe and wonder we as humans often experience when engaging with the natural world through play. Experiencing this connection through participating in a culture different than his own (Scottish heritage) seemed to enhance the experience for him, through its novelty, the kindness of people, and the sharing of food. This evidences the ease with which we can make connections to the natural world through a different tradition, suggesting that even within the plurality of our traditions, we share the same “language” of connecting with the natural world. This participant realised his relationality with both humans and the natural world through the simple act of making and flying a kite in a community that was at once different and similar to his own, allowing him to celebrate both in the process.

Another participant shared her emotional connections to nature through her experience of being part of a forest bathing activity, where she had been introduced to a poem by Mary

Oliver called *Sleeping in the Forest*. “*I’ll read it to you and then hopefully I won’t cry*”, she said, before proceeding to read it for us. She was given the poem by one of her fellow students during a residential at Ecovillage Findhorn (in Northern Scotland) where she was asked to read it *to the forest* instead of to the group. An excerpt from the poem is shared below:

All night

I heard the small kingdoms breathing

around me, the insects, and the birds

who do their work in the darkness. All night

I rose and fell, as if in water, grappling

with a luminous doom. By morning

I had vanished at least a dozen times

into something better.

– Mary Oliver.

The participant elaborated on her experience sharing how it was

“... very, very emotional and connecting [...]. And I love that image of just gathering things and having the curiosity of being out in nature. Um, but also just...you know “I’d vanished at least a dozen times into something better” (quoting from the poem). And I think you do, you emerge from nature different to how you entered it, I think. I especially loved what she was saying about all these little communities...the small kingdoms yeah. As part of the exercise we did with the group, we gave them magnifying glasses and asked them to go and find a small kingdom in the area we were in and spend time with it [...] what we did then was put our own poem together. [...] The whole thing, the whole experience was beautiful.”

These reflections and the participant’s experience resonate with the invitation and encouragement within Islamic environmentalism (IE) to venture out into the wilderness, and to make time for stillness and reflection. One of the purposes of this invitation is to

connect us with ourselves, the natural world, and the Divine Essence¹⁴ within all of creation leading to a sense of oneness and peace. It is not surprising that the participant highlighted how we emerge different after our immersion in nature, after having vanished “*into something better*”. This vanishing points to an encounter with oneness, with *tawhid*¹⁵, where there is no separation or fragmentation; it’s the experience of vanishing into the Whole leading to spiritual oneness with the Divine Essence present within all of living, breathing creation, similar to the oneness or wholeness people experience after a deep meditative session. The small kingdoms within the poem similarly resound with the IE perception of non-human beings as “...*communities like you*”¹⁶, communities that are perceived to be in kinship with ours, each of them an integral part of our ecosystems, contributing uniquely to them.

Looking up Mary Oliver, as I had not read her work before, I came across an interview with her titled “I got saved by the beauty of the world”, where she shares about her spirituality, “*I’m very much taken with the poet Rumi, who is Muslim, a Sufi poet, and read him every day*” (OnBeing, 2015). As a Muslim whose spirituality was deeply affected and evolved through reading Rumi, I am amazed and warmed at the connections we make through what we generously share with others. In offering insights into her own connections with the natural world through poetry, this participant introduced me to Mary Oliver, whom I made a connection with through the poetry of Rumi, representing an ongoing celebration of our connections to each other and the natural world through ITELs.

¹⁴ The term Divine Essence here is used to denote the *ruh*, or the life giving spirit/breath of life that was blown into Adam (عَلَيْهِ السَّلَامُ), and by extension all of humanity, by Allah. It is also used to denote the existence of life within created beings such as animals, insects, and plants.

¹⁵ *Tawhid* signifies the oneness of being that highlights the singularity of the Creator, from Whom emanates the (spiritual) Divine Essence of life and existence present within all of creation.

¹⁶ “And there is no creature on [or within] the earth or bird that flies with its wings except [that they are] communities like you.” (Quran: Al-Anam/The Cattle: 38).



Figure 5: Sketch of a stag, Highland dancing shoe (left), handmade kite (right).

Another participant at the WCDT brought a collection of items that connected her to nature through her culture and traditions, notably a Highland dancing shoe, a DVD of the Cumnock Highland Games, and a sketch she had made of a stag. She shared her thoughts on Celtic culture and its strong identification with the natural world, her own love of Highland dancing (part of the Highland Games which are held outside in large fields across Scotland in summer), and her support for her daughter's participation in the competitions. Sharing her sketch of the stag, she elaborated on how they were revered in Celtic culture for their *"beauty and vitality"*, and how her *"...dad was from a farm, and we used to go at night and watch the deer and the stars."* For the participant, evidently, personal connections to nature also involved people - her daughter, collectively being with people at the Highland Games, and excursions to watch the deer with her father.

As these offerings portray, participants shared stories of being in nature *with* people, highlighting the presence of strong human-nature relationality and dispelling colonialist, materialistic, dualistic views of humans and nature as separate entities. The participants' experiences do not speak of this duality, even if duality is what is widely promoted through mainstream thought and culture and widely perceived to characterise human-nature relationships. Connecting to nature through memories of her childhood and wider Scottish culture and traditions enabled this participant to acknowledge, honour, and celebrate these connections, and in turn enrich us within the Sharing Circle with a greater understanding of her ITELs and an appreciation of the diversity of our cultures and traditions. At the UofG, a participant of Polish heritage brought photos from her childhood and teenage years, sharing them with us on her laptop, elaborating on Polish culture and her mother's upbringing, both key to shaping her relationality with nature. Her mother's connections to nature came through escaping the city she was in to spend time with the participant's great

grandma in Bieszczady, a mountainous area in the countryside. Later, her mother would then encourage *her* to go outside, to be outside when she was feeling sad, taking her and her cousin out for walks. The participant kept scrolling through her photos sharing stories:

“...me and my cousin, we had nothing to do during summer, so we made this little den house. We got our gloves on, got the wheelbarrow out and everything.”

“...and then that was me by myself, because I have no siblings, in a hermitage.”

“...during the whole summer she (participant’s mother) travelled by herself and then she’d send me pictures of her having transcribed my name in wherever she was.”

“And here’s my grandad, I hate mushrooms, which is not very Polish of me, but here’s my grandad collecting those mushrooms and then drying them for God knows what [soft laugh].”

She commented on how Polish culture was more in tune with the natural world than British culture, where plant medicine was commonly used “*for curing cold and what not*”, where there was “*an encouragement to grow your own food*” due to Poland’s history of communism, and where because it was easy to have allotments, her and her cousins would spend a lot of time in her “*grandparents allotment, where we would make “mud” dinner, as you know, most kids can probably relate.*” The participant did not only develop a deep relationality with nature through her upbringing but also realised value in the tradition of passing down this wisdom and aspects of *khilafah*¹⁷ all the way from her great grandmother through to her in the present day, describing in detail her own and mother’s journey towards developing this relationship. The relationalities between the human characters and the natural world within the participant’s offering are striking; the hermitage, her mother, the den, her cousin, the mountains of Bieszczady, mud dinners, growing food, her grandparents, mushrooms – as she kept flashing through these pictures with fond memories it was hard to distinguish the meeting point of human characters with the natural world. They intertwined effortlessly, distinct but with their existence woven

¹⁷ Translated as stewardship of the earth within IE. In this context, relationality with care and responsibility for the earth.

together, all forms of beautiful creation in constant interaction with each other, generation after generation experiencing kinship with the earth.

7.1.2 The hills of rural Italy, childhood lullabies, and Bulgarian resistance

At the UofG, three participants brought poems/songs as offerings for the Sharing Circle. A participant from Bulgaria reflected on her nation's past, the period when it was occupied by the Ottoman Empire with major uprisings, and poems and songs written about it. She explained that, *"Bulgarians see Bulgaria as all the nature, and in a lot of the poetries, poems that were published that time, they refer to Bulgaria by the nature."* She elaborated that the song she was sharing, known as *"Hubava si moya goro"* (You are beautiful, my forest) in Bulgarian, expressed the sentiments of people who had to escape to Romania during the time, and how it evoked sad feelings,

"...because you're away from it (Bulgaria) and you want to go back to it desperately, but you can't because, well, it's not your territory or it is, but you know, you can't have it back".

She related to it because, as she explained, *"...I'm away from Bulgaria as well and I kind of miss the scenery and everything."* She then read the song out in Bulgarian as the rest of us had access to the translation on the projector screen, before playing the song for us on YouTube. An excerpt from the song is shared below in the Cyrillic alphabet and in English:

Хубава си, моя горо, миришеш на младост, но вселяваш в сърцата ни само скръб и жалост; твойте буки и дъбове, твойте шуми гъсти и цветята, и водите,	You're beautiful, my forest land, And spread the scent of youth, But you instill in hearts of us Only sorrow and regret; Your beech and oak trees, Your thick foliage leaves, And the flowers and the waters, And the lambs,
---	---

агнетата тлъсти,	And the peony, and the grasses,
и божурът, и тревите,	And your coolness,
и твойта прохлада,	Everything, I say, sometimes,
всичко, казвам, понякогаш	Falls like a bullet
като куршум пада	
	To the heart,
на сърцето, което е	Always ready to cry
всякогаш готово	When it sees something
да поплаче, кога види	New in nature,
в природата ново,	
	When it sees how the spring
кога види как пролетта	Sends off the past
старостта изпраща	And a life arises
и под студът, и под снегът	Under the cold and under the snow.
живот се захваща.	

The song speaks beautifully of human relationality with the lands we inhabit, the attachments we develop through our reciprocal relationship and intertwined relationalities with it, and understandably the pain and sorrow we experience when we separate from it. The conception of Bulgaria as nature itself, instead of a state or country, as evident from both the participant's reflections and the song, further speak to the relationalities that humans have an intrinsic tendency to develop with the lands they are nurtured by. The participant had previously mentioned that she understood her relationality with the natural world mostly in terms of its physical aspects even though she was becoming more open to the spiritual aspects being discussed within the workshops. Choosing this song as an offering to share with us, however, clearly also highlights and celebrates her emotional literacies and attachment to the land through her cultural traditions. The second participant, with German heritage, beautifully sang a lullaby in German that her dad used to sing to her, a translation of which is shared below.

Hejo, spann den Wagen an, Denn der Wind treibt Regen übers Land! Hol die goldnen Garben, Hol die goldnen Garben.	Hey ho, lash the wagon on, See the wind blows rain over the land, Gather the golden gifts, Gather the golden gifts
---	---

She shared how she loved it when her dad sang it for her in his deep voice and how fun it was to sing in rounds around a fire, a similar formation as the Sharing Circle we were in to celebrate the diversity of ITELs we brought to the workshop space.

“Yeah. I think, I think it’s a work song, so I didn’t do any research, but because of the rhythm, it’s about bringing in the hay before the rain comes. And I like the idea of the old rhythm, the rhythm of the earth and the rhythm of the seasons and the rhythm of your breath and your body and the harvest. All these things lining up together in this song that has to do with labour.”

The third participant brought a poem/song elaborating on her Italian heritage, sharing that she had a chat with her father, who had suggested the song for the Sharing Circle. She elucidated that it was in the native dialect from a rural district in northern Italy, where her family was from:

“...so it’s just a bunch of houses that are in the mountains and it’s the fact that all the people just went to the city and abandoned this community. And so now the mountain is sick, and no one cares for her anymore.”

She appreciated the concept and practice of community that we had experienced within the workshops explaining that the song was traditionally sung by a choir, “my choir” she said,

“And I think that in the past, my grandparents had this idea of people getting together, laughing together, taking care of the soil together. And we lost this, like, me and my sisters...never really had a community. And it’s very sad.”

She read it out for us, explaining that the song lamented the fact that only the older generations remained in the mountains, the rest losing their memories of the place, how it

was only the rocks that remembered, and the “*spring doesn’t come anymore because you forgot about this old community that existed.*” There is of course a magnitude of reflections and connections related to these participants’ offerings than there is space within the confines of this thesis to explore. However, I hope that some of the beauty of these connections to nature and tradition is *felt* by the reader as they make their way through these offerings. The lullaby from the previous participant’s childhood that could be sung in rounds around a fire was, for this participant, reminiscent of the rounds of harvesting, human breath, the seasons and rhythms of the earth itself, offering for her a connection to the natural world *and* herself through her language and culture.

For the participant from Italy, the song represented her family’s connections to the mountains they came from, representative of their relationship with the land, the earth, and the very soil they took care of as an *amaanah*¹⁸. She lamented her own and her sisters’ lack of connection to this land and community, much like the spring and the sadness of the rocks which were perceived as sentient beings that remembered and missed the people who had left. It was as though the spring only arrived every year because of the people and refused to be back in their absence, pointing to the deep relationships between the land and people. Her offering also evokes the title of Rachel Carson’s book, *Silent Spring*, a text that deeply inspired Arne Naess and his work on deep ecology that contributes to the theoretical framework of this study. Within all of these offerings, participants articulated their connections to the natural world through aspects of their indigenous and cultural traditions, celebrating these connections, but also equally lamenting and realising the loss of community and connection to the lands of their ancestors.

7.1.3 Fasting in the mountains, sacred trees, and meditation

At the SFGN, three participants shared personal connections to the natural world through their Christian faith. One read a verse from Genesis, elaborating on the relationship humans were created to have with the earth,

¹⁸ From the perspective of Islamic environmentalism, *amaanah* signifies the conception of nature as a sacred and precious trust to be conserved, cared for, and protected.

“So, God said manage. Human beings, we are created to govern, to preserve, not to destroy. So, from a spiritual perspective we have a duty to preserve nature, for our own benefit. And that’s how we impact nature because I have a responsibility.”

The second participant shared how as a practicing Christian, within his tradition, most people would choose a space for prayer or fasting that was “...quite natural. So, most of them would go into the mountains. You can never hear someone booked their hotel room (for prayer or fasting)” which we found amusing, as it resonated with us. The third shared their experience of recently being at several (Christian) funerals, that had made the participant reflect on traditional rituals of burying the dead, of going “back to dust”, cementing “...the fact that we are one with nature”. Although the theoretical lens of the study recognises the natural world to be inherently valuable to be preserved beyond the need for human benefit, the first participant’s sentiments nonetheless point to the deep relationality between and more importantly human dependency on the natural world, such that it is impossible for us to exist without it. Our reactions to the second participant’s offering point to the existing social awareness of the relationship between nature and spiritual practices. And the third participant’s offering highlights the humbling but nonetheless deeply intertwined sense of connection with nature and the earth itself. Making these connections to the natural world through their faith drew out specific aspects of human-nature relationality that offered us material and spiritual perspectives to reflect on. The act of holding space for these offerings within our Sharing Circle allowed us to acknowledge and honour everyone’s unique, diverse, but equally relatable connections to nature through their chosen tradition.

Some participants also shared connections from their indigenous cultures stressing the importance of keeping these traditions alive. One of them shared indigenous understandings of nature being inhabited by spirits, elaborating that within several kingdoms and cultural practices in Uganda, elders would claim certain tree species and natural spaces to be inhabited with spirits. This was to scare people from destroying them because “tampering” with them meant “tampering” with the spirits themselves, “...and there will be negative effects on the society and that’s how places like wetlands and forests would be kept for spiritual existence.” Another participant shared the tradition of the Reed Dance from her native Swaziland, which she explained would involve girls going into the wetlands to cut reed. The event would be scheduled only during certain seasons in

consideration of migratory birds that inhabited the wetlands: the reed would only be cut when the birds had migrated. Both of the above offerings highlight participants' efforts to make connections to the natural world through indigenous, faith, or cultural traditions. What is striking, however, is that in the first, individuals are scared *into* conservation while in the second, plants are conserved *due* to care for the birds inhabiting them. Nevertheless, both fear and care, were considered by participants to be equally valid emotions and approaches to conserving non-human life within nature.

The practice of assigning spirits to trees was also shared by two other participants, including one from Nigeria. One of them lamented the loss of these literacies, sharing her intentions to preserve traditions of kinship with trees through planting a tree for every child that was born within her wider family. Participants at the SFGN workshop were prompted to share their offerings after a few minutes of reflection (as opposed to other sites where they came prepared), suggesting that the offerings they chose to share from their traditions within this short time, were deemed worthy of being acknowledged, honoured, and celebrated within the circle. As the Sharing Circle drew to a close, a participant who had previously elaborated on their connection to the natural world through the practice of meditation, explained that he came from a "*mixed bag*" of cultures, and it was through meditative practice that he found a way to affirm that "*we are nature, (and) nature is us.*" Whether he was in a city, a room, or outside within nature itself, meditative practice had been key to breaking down barriers and accessing the essence of nature no matter where he found himself. This participant did not ascribe the practice to a particular tradition, however, what is important to note is that he perceived it as a tool to access the natural world even when he was not physically immersed within it, acknowledging a deeper, more than material, spiritual connection to the living, breathing, non-human world.

This section explored participants' offerings for the Sharing Circle and the connections they made with the natural world through indigenous, faith and/or cultural traditions. The connections reflect more than material human-nature relationships through diverse and pluriversal conceptions of human-nature relationality. As we acknowledged and honoured each other's diverse offerings, and the relationalities embedded within, we made space for their collective celebration, and a celebration of our intertwined relationalities with the wider natural world.

7.2 Embodied expression: articulating responses to ITELs

The images below show snapshots of participant responses to ITELs, symbolised by the chair in the centre of the room. This embodiment exercise at UofG was key to articulating participant reactions towards ITELs that evidenced openness, engagement, and celebration through embodied expression. Participants also expressed their perspectives around decoloniality and community through their responses. The exercise enabled layers of new meaning through an additional mode of inquiry independent of verbal language, prioritising instead visceral and intuitive participant responses to ITELs.



Figure 41 Experimenting with embodied reactions to ITELs.



Figure 42 Participants' embodied reactions to ITELs.

Participants tried sitting, walking, lying down, experimenting with their positions until they felt comfortable to hold them as their reactions to the symbolism of ITELs. What was striking for me, as an observation, was the thought and consideration that went into the exercise. Reflecting, contemplating, moving around the room adjusting their embodied responses, taking in what others were doing, all demonstrated participants' engagement with the process. They cared enough to be thoughtful about representing their reactions as best as possible. One of the key considerations in post-qualitative inquiry is about what the data *does* (Jackson and Mazzei, 2023), and what these data do, is to provide important evidence and validation for co-creating pluriversal, participatory spaces for education for sustainability and regeneration that allow for the development of personal connections to the natural world. The workshop space allowed for a diversity of participant responses through a range of modalities, and this in turn promoted deeper engagement as each participant had the opportunity to express themselves fully through the modalities they felt most comfortable with.

7.2.1 Embodiment

Taking in the view of the whole room at the time, I could observe a collective representation of participants' reactions to ITELs, a microcosm of sorts that depicted how

they would react to ITELs in the macrocosm of the wider world. Their openness to ITELs was visible through the positioning of their bodies towards the chair rather than away from it, sitting down to look at it, facing it, and considering these more-than-material, pluriversal ways of looking at the natural world. One of these participants who stood closest to the chair appeared to be scratching at it, an inquisitive stance evident through the participant's proximity and act of touching, picking at the chair with their pencil. As the closest person to the chair, their stance signified interest and curiosity to explore things further, looking forward to what they might find through unearthing ITELs, so to speak. In front of this student, another participant sat on the ground with part of her legs under the chair, hands placed palms down behind her on the carpet; close, facing, open, interacting with ITELs in a seemingly relaxed way, as evident from her posture. As the picture above shows (Figure 42), she had first placed herself lying under the chair but had since moved into a sitting position, suggesting further reflection and deliberation in her choice to represent her response as clearly as possible.

Behind her, to her right sat another participant facing the chair looking at it intently, but from behind another chair she had positioned in front of herself, as if to create a kind of filter or barrier between her and ITELs, however, still directing her attention towards it. The participant behind her stood looking over her shoulder towards the chair, her body positioned neither towards nor away, turning her head as if the chair had caught her attention and she was looking around to respond to it. Both these positions depict visual responses to ITELs, symbolised by the chair in the centre, the participants' gaze directed towards the chair even if their bodies were not fully angled or open towards it, their attention being held by it as if to say, I am looking at you and listening to what you have to say.

In the centre of the room, directly in front of the chair, three participants formed an impromptu semi-circle, sitting in either a thoughtful position or simply looking at the chair, directly observing it at eye level. Their positions depict a togetherness in both their collective postures of sitting, and in directing their faces, bodies, and vision to the centre of the chair, suggesting deeper engagement, thought, and consideration. Behind them sitting on a chair is another participant, similarly, considering the symbolisation of ITELs thoughtfully, but with a notebook and pen, suggesting that she is studying and taking notes, drawing, or putting her thoughts down on paper to make them more concrete. As these

participants positioned themselves around the chair, a lone participant decided to sit to the right side of it. She had struggled with representing her position, playing with two other chairs until she had an inverted one on top of another, and then proceeded to sit uncomfortably on top of this construction. She looked at the chair in the centre and then away and outside through the window to the right. Her struggle with the chairs possibly representing the struggle within her mind and body, looking at the chair and away as if to reconcile what the chair and window represented for her in the moment.

The pictures above present only a snapshot of the process (Figure 41) and the embodied reactions (Figure 42), however, even the frozen reactions in time evidence participant proximity and openness to ITELs which is one of the key findings of this study. None of the participants positioned themselves being closed off to or turning away from the chair, most of them are positioned close to it, more than half of them considering it at eye level or as a subject of study. Participants also positioned themselves in proximity to each other suggesting that they are considering the chair together or want to be together while considering it and the ITELs it symbolises.

Further, participants readily took up the prompts to the embodied activity, moving around the room with purpose, feeling comfortable to change their positions as needed. Using their bodies to represent their reactions towards ITELs seemed to lend a certain ease to their expressions which might have been restricted if they had to translate them into language and specific words, especially considering that English wasn't the first language for almost all of us in the room. These visceral responses transcended language as the activity was facilitated to portray participants' reactions and feelings towards ITELs; without the need to use language, they were free to position their bodies in accordance with what they instinctively *felt* instead of only what they thought, an attempt to engage the felt body as opposed to only the rational thinking mind. An invitation to appreciate the whole human from an IE perspective, the somatic exercise foregrounded what the thesis argues for, pluriversal ways of knowing and being that transcend universal ways of making sense of the world. The embodiment also served to create another modality for the participants to celebrate their various connections to ITELs which they had formed over the course of the workshops. Through positioning themselves in proximity and/or openness to the chair and to each other, they participated together in the activity to acknowledge these indigenous and traditional ways of looking at human-nature relationships and their significance in their

own lives. This collective participation allowed them to witness each other's reactions to ITELs, including their own embodiment, making it a collective celebration of these connections.

7.2.2 Participant perspectives on embodiment

With participants set in their positions, we took turns to allow for each of them to vocally express what their embodied expressions meant to them through the use of language. It is important to note that the primary expression of their reactions towards ITELs was an embodied one, an embodied language, verbal language was only used to elaborate on the former. Their spoken commentary builds on their embodied expressions towards ITELs, evidencing openness, curiosity, engagement, and desire for decolonial perspectives and a sense of community.

For instance, the participant (P2, see Figure 43 below) scratching the chair likened his reaction to a child exploring something new, *“but the fundamental thing is curiosity”*, he explained. He later elaborated that coming from a science and biology background, he had never thought of addressing environmental issues through an ITEL lens, however, he said, *“...the most important thing I’m going to take away from this (the workshops) is that it completely dispelled that view.”* This is reflective of literature that evidences the hegemony of modern science over other forms of knowing and being, promoting itself as the only legitimate way for creating knowledge and understanding the world. In this context, it is important to note that these views were dispelled for the participant within an HE setting, which may have implications for introducing ITELs within similar spaces. It is likely that participating in the workshops within an HEI, widely considered to be an empirically rigorous environment producing the most “correct” form of knowledge, played a role in lending legitimacy to ITELs for the participant.

Similar sentiments were also shared by the participant (P9) sitting behind a chair, observing the symbolisation. As a self-described *“conservative person”*, she had felt a shift in her thinking, and she was *“...challenging my ideas with what we’ve discussed”*, as it was rare that discussions stayed with her as long as those from the workshops did. She expressed that some of the ideas *“stay with me”* and *“make sense”*, which despite being new to her suggest her attempts to engage herself in dialogue with these ideas. The

participant (P3) sitting on her self-made construction of chairs, however, revealed feelings of frustration, the inverted chair for her representing ITELs and the chair on top she was sitting on, her personal attempt to engage with them...

“...in the society we live in so I’m very much having a difficult time. [...] Yeah, and it’s also closer to the window than the door because it’s like, I’m trying to be hopeful. I’m trying to move a bit closer to the window, I’m not fully there yet, but I’m trying”.

Her difficulty with setting up the chairs represented the struggle within her, and the exercise served as a medium to express this through her living, breathing form allowing her to be seen and understood by us. We witnessed both her struggle, her *jihad*¹⁹ within herself and the wider society, and consequently her attempt to celebrate the existence of ITELs in her life despite social structures and barriers. The participant (P7) sitting on a chair in the centre, studying the symbolisation and working on artwork shared that she was expressing her desire to contemplate ITELs and *“...kind of integrate what it’s inspired me into my own art”*. She explained that she was adding to her drawing and poem (that she had brought for the Sharing Circle) *“...and making it mine”*, and that the workshops had made her want to *“...engage more with my own roots, with the indigenous perspectives from Mexico. And want to research more and be...that it becomes part of me and what I do.”* The desire to have deeper connections with her own indigenous traditions speaks of her need to know herself more, an inclination towards *ma’arifa*²⁰; *“making it mine”* beautifully encapsulating her intention to integrate herself, her artwork, and her indigenous literacies together.

¹⁹ Struggle with the self, the world, for resistance against oppression. In the Islamic tradition, the greatest *jihad* is understood to be the struggle for freedom of the self, often from materialism and hedonism.

²⁰ Deeper knowledge and understanding; in this case, of herself, her indigenous traditions and literacies, and by extension the natural world.

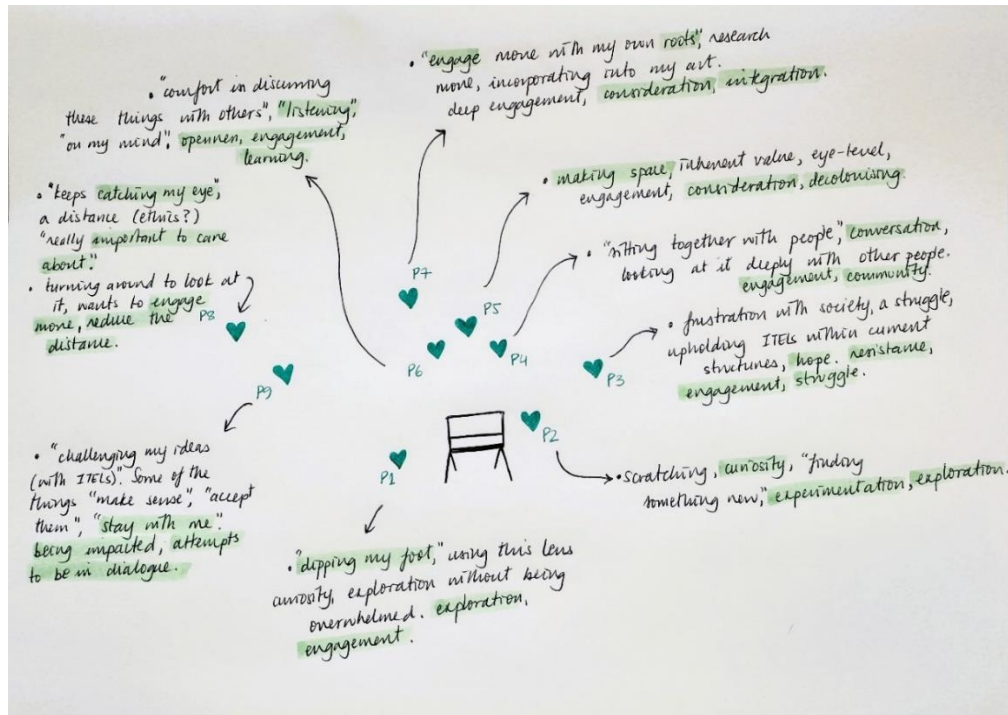


Figure 43 Map of participant positioning around the chair, showing a visual snapshot of the analysis.

The embodiment and consequent dialogue by the participants allowed for the refinement and articulation of their relationship with ITELs, setting them up for celebrating these relationships through the Sharing Circle that followed. The above perspectives in addition to many others shared throughout the research workshops created for me a sense of warmth and contentment, inspiring me to continue with this resistive work of reviving and celebrating ITELs. These feelings resulted from the participants' deep engagement with the subject matter, which was in turn facilitated through all of us together creating a safe, open, and welcoming space for everyone involved. Although workshop etiquette and guidelines were emailed to participants prior to the workshops, it was the active modelling of the space which encouraged participants to sustain this safety and friendliness. Similarly, it was the participants' engagement with the workshop activities that helped sustain the celebration of ITELs.

The participant (P1) with part of her legs under the chair explained that she had shifted her response from her previous position of lying under the chair, because it had felt overwhelming to "embody the whole thing (ITELs) at once", her new position instead representing her dipping her "foot in the pond". The embodied practice here allowed the participant to learn more about her own stance towards ITELs, shifting into what felt more

achievable, and finding out how she wanted to interact with ITELs in her life. The participant (P8) who was positioned turning around to look at the chair shared a conundrum. For her, ITELs kept cropping up within her life and catching her eye, hence the turning around, however, as something that was “...so buzzword-y at the moment” and often used as a tokenistic gesture, she had been hesitant to engage with the subject matter fully. “So, I’ve been keeping that at arm’s length, but as a result, keeping the whole line of stuff that’s actually really important to care about also at a distance.” The sentiments highlight the participant’s sense of ethics when engaging with ITELs, however, as she herself reflected, this could lead individuals to distance themselves completely, which could otherwise be an important step towards reviving these historically marginalised ways of thinking and being. Through the embodied practice, the participant was able to articulate her conundrum clearly, opening herself up to ethical possibilities of engaging with ITELs, to “care about” them as she said, and as a result to celebrate their existence that kept drawing her attention.

The three participants sitting together in a semi-circle explained that their positions represented the sense of community they had experienced during the workshops. The participant (P4) on the right expressed her urge to sit when she saw others sitting because it reminded her that “a huge part of the workshop was sitting with other people”. This was the most important part of the workshops for her, and she was considering the chair because she wanted to be near it, to “look more deeply in it. Yeah...and also with other people.” The participant (P5) in the centre elucidated that her grounded position gave space to the chair in the centre, to uphold ITELs that have usually been “made inferior and pushed to the side”. She wanted “...society and all the structures that we have in place to take a step back and kind of lower themselves and let these literacies have space, and to really see the value in that”. For this participant, the embodiment exercise helped articulate her relationship with ITELs and what she desired for their place in society – a decolonial perspective so that these literacies could be celebrated for their inherent worth and value, contributing to pluriversal perspectives on human-nature relationality.

The third participant (P6) sitting to the left related to the above participants’ perspectives, referring to the grounding nature of sitting down and the community aspect of the workshops, such that she found herself naturally sitting down.

“So, with the workshops, I felt more comfortable. Well. I don’t know, I found some kind of comfort in discussing these things with others, even though the topics weren’t posited”.

Her facing the chair with her legs apart versus being crossed was her attempt to direct her body towards ITELs representing that her *“attention is entirely drawn to it. And I’m also listening, I’m not really doing anything else at the same time”*. She expressed her desire to learn *“...more about specific cultures. Other cultures, or indigenous cultures and traditions.”* Her words reflect both openness and deep engagement, and in the process an ongoing celebration through her acknowledgment of ITELs and her desire to revive them through learning more. Celebration, more often than not, takes place in community. With these positionings, participants emulated what the workshops and therefore ITELs meant to them; sitting together in community getting to know each other and their traditions as they relate to the natural world and responding collectively to the socio-environmental challenges posed by the environmental crisis. The embodied responses in themselves reflect an acknowledgment, honouring, and celebration of ITELs through their reclamation.

The above reflections and discussion demonstrate how the embodiment exercise enabled participants to articulate their responses towards ITELs, including both openness towards and desire for engaging more deeply with them. Participant responses evidence curiosity, intentions to explore or learn more, and changing mindsets and attitudes towards ITELs. The embodiment exercise also revealed an appreciation for working within community and a decolonial spirit, including participant resistance to universalised Euro-Western paradigms of making sense of the natural world, which has also been evidenced within previous chapters. The embodied inquiry allowed participants to celebrate the existence of ITELs within their lives by positioning their bodies in response to the symbolisation within the microcosm of the space we were in, reflecting their real life responses to and engagement with ITELs in the macrocosm of the wider world and in the context of the environmental crisis.

7.3 Creativity, interconnectivity, and conversations in community

In addition to evidencing participant openness to and engagement with ITELs, the facilitation of the celebrate workshops demonstrated participants' creativity, engagement with the concept of interconnectivity, and the co-creation of safe spaces for conversations to take place. Participants brought self-made creative artefacts for the sharing circle, reflected on feelings of hope and other learnings from the workshops, and expressed appreciation for the co-created spaces which had allowed critical conversations to take place.

7.3.1 Creative expression

In response to prompts for the Sharing Circle, participants at the UofG brought their own artwork as offerings to support their stories of connection to the natural world. The prompts to bring an artefact (song, music, art, memories, or anything else) that represented these connections through ITELs inspired creative expression that acted as a powerful medium to communicate their complex and intertwined relationalities with the natural world. Some had already made these artworks before they knew about the workshops while others had made them specifically for the Sharing Circle. The following presents a mini gallery with a selection of these participant's artworks.

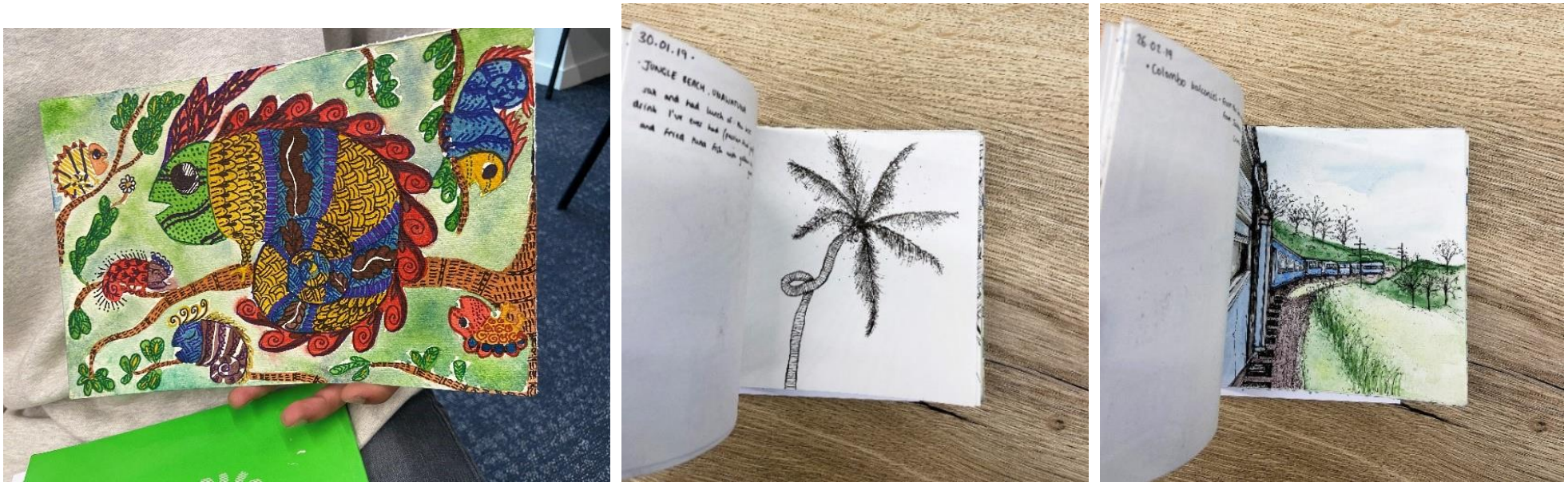


Figure 44 UofG: Indigenous gond art from India (left), selection of sketches (coconut palm, looking at the fields from a train window) from the participant's time in Sri Lanka (centre, right).

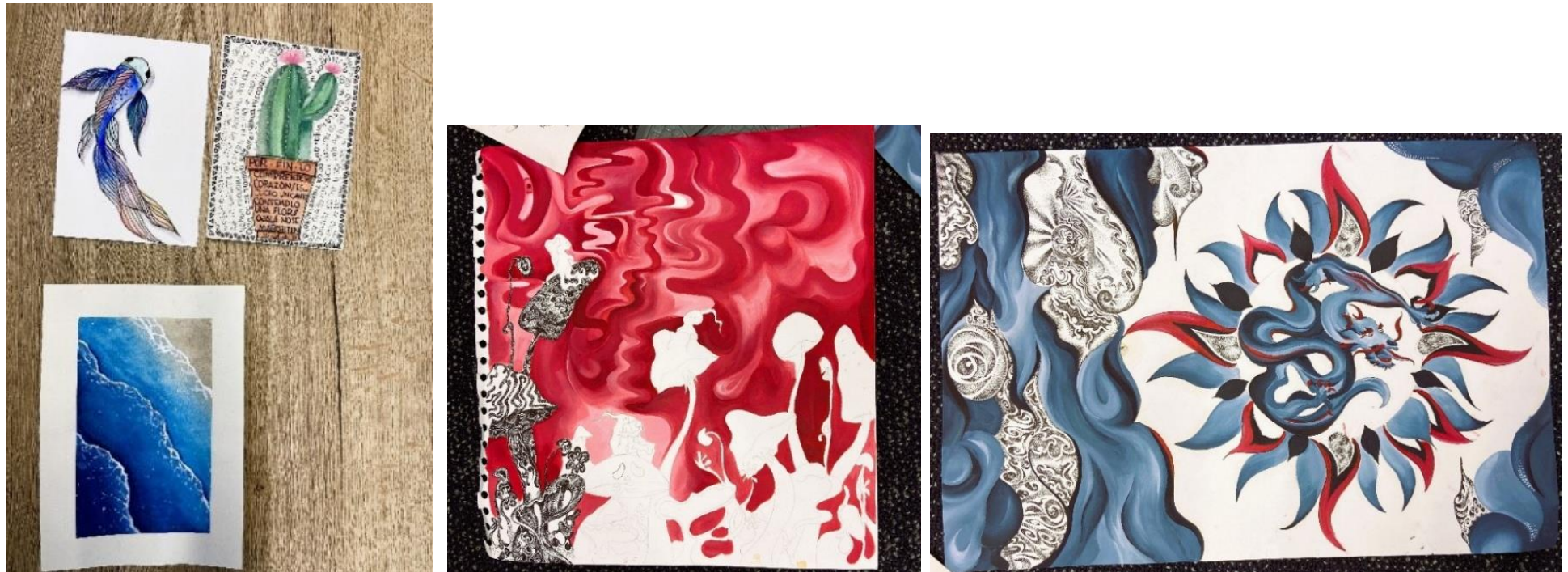


Figure 45 UofG: Drawings representing participant's connections to Mexico (left), in-progress stippling art reflecting another participant's connections to the natural world through representing earth (mushrooms) and celestial spaces (centre, right).

The *gond* artwork above (Figure 44) was an offering from a participant with Indian heritage, who had researched the art form some time ago and then again recently to make their contribution for the Sharing Circle. The participant elaborated that the art originated from the indigenous traditions of people from Madhya Pradesh in India. Its focus was mainly on natural forms and elements, the patterns within the art representing the *“different forms of nature”*, and how the idea is to *“...draw different animals, and within the animal itself overlay multiple patterns that represent droplets, scales, feathers, these kinds of things.”* It was endearing to see how excited this participant was about showing his work to us as he explained before doing the final reveal, *“So, I wanted to have my own go at some gond artwork, so I spent some time, and I came up with...wait...this!”* With our collective expressions of admiration, he then shared that the chameleon he had chosen to make reminded him of a childhood book he had read, the animal and the artwork for him represented adaptability as *“...the biggest thing we can take away from learning about the environment.”* This participant chose an indigenous art form from his heritage, used it to reflect on both his own connection to the natural world and reflect on his response to the environmental crisis inspired by a key characteristic the chameleon is known for: adaptability. The exercise demonstrates ecopedagogy and principles of deep ecology in practice, where the participant was enabled to personalise their connection to the natural world, revive an indigenous literacy as a form of resistance, and reflect on deepening our human-nature relationality through developing adaptability like the chameleon (Jackson, 2022) (see also the Ecopedagogy section in Chapter 3: *Theorising for Education for Sustainability and Regeneration*).

The participant who shared paintings of the sea and fish (Figure 45) related them to a story by David Foster Wells about two fish in the sea. An older fish asks them,

“Hey guys, how’s the water? And swims away. And the two fish are like, what’s water? And the whole metaphor, the whole teaching of that is...sometimes we forget that water is all around us. What is water? It’s everything that sustains us within what we live. And I absolutely love that! So, for me...kind of nature and all that is our water. And it’s about remembering this [gesturing around her] is water.”

The story was from a *“white male person”* she said, pointing to the fact that it may not be considered indigenous, but the metaphor within it resonated with her deeply. Nature was the great sustainer of life, she explained, but we may not realise its encompassing existence

because we have never known life without it, much like the fish had never known their life without water, pointing to our experience of being immersed and in oneness with all creation, even though we may not realise this. Her cactus drawing featured an excerpt from a poem about nature by an Aztec emperor named Nezahualcoyotl (a poet king from Hispanic times) as a representation of her Mexican heritage, this was the same drawing she had been working on when she was “studying” during the embodied inquiry (see previous section). She read it out for us in the native Nahuatl language even though she struggled with it, before reading it again in Mexican and English.

Both the above participants’ offerings reflect deep, intentional engagement with their own indigenous traditions to represent personal connections to the natural world, whether it was researching *gond* art or the desire to recite poetry in Nahuatl, despite the struggle. The former had already shared that his time at the workshops had helped dispel reductive views about indigenous/traditional literacies around health, medicine, and sustainability while the latter had expressed her desire to dive deeper into indigenous literacies from her Mexican heritage (see previous section). This demonstrates that the prompts to make connections to nature through ITELs aided participants on their journeys of reconnecting with their traditions. The story about the fish may not have been from the participants’ own cultural tradition, as participants were free to share from any indigenous or cultural tradition they wished, what was more important was the resulting reflections on deep relationalities with the natural world.

The flexibility and freedom to explore and share what they loved most about their connections to the natural world may also explain why so many of them were able to make deep, emotional, and personal connections. The emphasis on connecting to nature through ITELs naturally drew out not just material and physical but also emotional and spiritual connections to nature as reflected from participant stories and offerings. The artwork from the two other participants is similarly evocative of these connections. The sketchbook with artwork (Figure 44) was shared by a participant, with English heritage, who had travelled to Sri Lanka with a friend to teach English. They were hosted there by a Sri Lankan couple in their 60s in a “*little rural village*” where the participant had been impacted in particular by,

“...our Sri Lankan mum, as we called her. She was called Chandra, and she was just an incredible woman. She was a Buddhist, and she was just a real inspiration in kind of meditating, and yeah, the way that she practiced Buddhism.”

Chandra would make amazing curries to share with her community being up before dawn for her daily rhythm of work and it was her *“amazing philosophies on life”* that impacted the participant to try yoga and allow her *“...first moment of really connecting with spirituality.”* Making personal connections with nature through her sketches of living in a culture different than her own, and through the Buddhist tradition, gave this participant the opportunity to connect with her own *fitrah*²¹, which opened her up to her spiritual self and enabled holistic appreciations of human-nature relationality. The stippling art (Figure 45) similarly represents another participant’s connections to the natural world through spirituality, materiality, and metaphor. The participant had made this (in-progress) art specifically for the workshops to represent her connections to the natural world through ITELs. As a yoga teacher, reflecting on mandala yoga flows (yoga practiced by moving the body in a circle) had made her think of connections between Celtic and other indigenous cultures, histories and literature, all intertwining to constitute her artistic offering for the Sharing Circle.

“And so, I started doing this kind of fungus and mushrooms style piece. And that sort of got me thinking about how, perhaps, in indigenous cultures...they are often connected between the earth and the intelligence of what’s beneath our feet. And simultaneously, they are unafraid to look up and out. And maybe the problem with our contemporary...in this middle ground, we’re pretty ignorant of you know, the intelligence of fungi or people that would acknowledge that medicine because it’s got written into literatures as being witchy and taboo. And then simultaneously, science is stopping us from looking out and just taking seriously conversations about celestial possibilities.”

She then proceeded to share “Mushrooms”, a poem by Sylvia Plath on feminism explaining that even though it wasn’t directly about nature, the *“...metaphor could work well for ways of looking forward.”* It is incredible how this participant envisioned

²¹ The natural human disposition that inclines towards (in this case) relationality with the natural world, it’s rhythms.

interconnectivities between a wide range of elements - from yoga originating from the Vedic tradition to Celtic and other indigenous literacies, the juxtaposition of the heavens and the earth, indigenous medicine, and the marginalisation of women, relating them all back to contemporary sustainability issues. I begin to envision these constellations of thought, my mind creating more of its own. Over and over in these reflections, key points show up, like stars becoming visible in a dark desert sky, one by one, forming constellations through their interconnectivity, each point related to the other. For the participant above, her yoga practice connected her to the flows in her artwork, which represented her desire to look above and below situating herself between the sky and the earth, embodying her upright stature as a human²² engaged in studying and connected with both the earth and the sky. I am reminded again of the gentle nudging and encouragement within IE to experience and be in awe of the mysteries of the heavens and the earth.

“Surely, in the alternation of the day and night, and in all that Allah has created in the heavens and the earth, there are truly signs for those who are mindful” (Quran, 2025, Surah 10, Ayah 06). Everything from the celestial spaces to the ground beneath our feet is considered sacred. From an IE perspective, the natural world is perceived as both the pedagogy and the curriculum: in its existence it implores us to explore it, and in through this exploration we begin to deepen our knowledge of the nature of life on earth, ourselves, and the Creator.

In response to the workshop prompts, the participants above used creative expression as the primary modality to express their connections with the natural world through ITELs. The artworks were key to expressing complex, intertwined, and ever evolving rich human relationalities with nature. For these participants, honouring and acknowledging these connections through ITELs enabled their reclamation and celebration, no matter what part of the world they originated from.

²² Within the Islamic tradition, the upright stature is considered unique to human creation. It enables the human to connect vertically with both the heavens (to receive revelation and inspiration) and the earth (grounded in our roles as *khulafah-al-ard* [stewards of the earth]). The unique upright stature also enables sociability, our hearts point outwards on the horizontal plane (unlike species from the animal kingdom), promoting trust and metaphysical connection. Therefore, people of faith are guided to “avoid turning their backs to one another” or severing ties (Reference: Sunan Ibn Majah 3849, English Translation: Vol. 5, Book 34, Hadith 3849).

7.3.2 The concept of interconnectivity and workshop learnings

Participants' engagement with the concept of interconnectivity was an important factor in their understanding of and openness to ITELs, as this helped them make their own connections to ITELs through various entry points and celebrate them in community. Participants demonstrated an appreciation for both the learning that took place through reflecting on the concept of interconnectivity and the opening meditations that helped ground them in the workshop space. At the SFGN, a couple of participants mentioned “*connectedness*” and “*reconnecting*” as their takeaways from the workshop with other responses ranging from “*perspective*” and “*hope*” to “*curiosity*”, “*resilience*”, “*rethink*” and “*imagination*” (Figure 46). These responses, similar to those from the other two sites, reflect participants' desire to explore ITELs further and point to the collective learning that took place within the workshops through community, conversation (see following sub-section), art, problem-solving, and simply creating the space to listen to and understand each other.

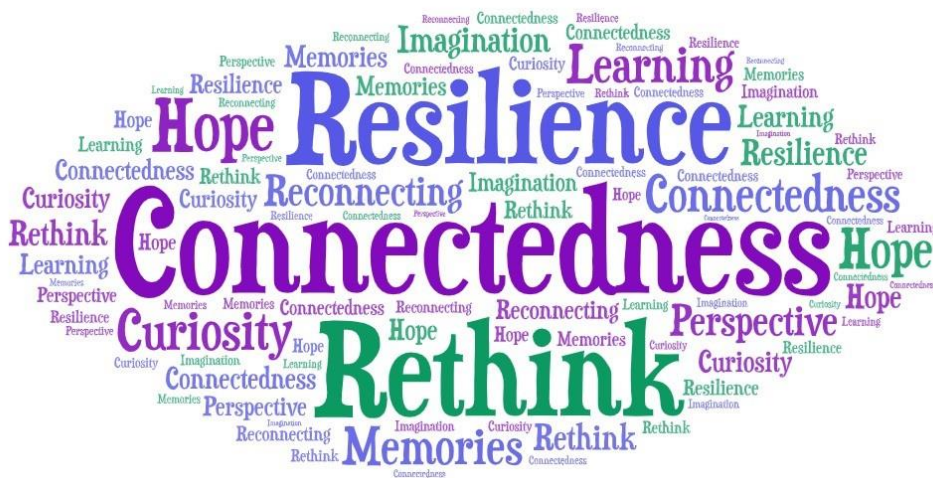


Figure 46 One-word takeaways from the SFGN workshop participants.

A participant with Italian heritage at the UofG also shared that her core takeaway from the workshops was to think differently about her relationship and interconnectivity with nature compared to her previous experience of simply “*studying another thing (nature)*”. She elaborated on the “*really scientific*” and, therefore, often separating nature of “*European philosophies*” that she was used to which had not allowed for her to appreciate these perspectives.

“But here, I just, for the first time... I asked myself, why? Why should we protect nature? Should we do it because everyone tells me to do, because my parents taught me to do it, or there’s something more to it. Like is it more a relationship that I’m part of? [...] And not just this idea of me being outside of it saying, okay, I should protect you. But being in this relationship where nature takes care of me also.”

This critical questioning from an ecopedagogical lens is a powerful way to realise Naess’ concept of deep ecology and our intertwined relationality with the natural world, awakening us to our *fitrah*²³ and evolving roles as *khulafah-al-ard*²⁴. Another UofG participant reflected on the...

“humbling but also comforting feeling of interconnectivity. [...] it’s just sometimes you can catch it, or you see it you know, out, out and about. And just think it’s that sense that everything is interconnecting which is just really lovely to keep you grounded.”

A WCDT participant similarly appreciated the...

“...holistic experience of going from the macro universe you know...and the way the planets were coming right down to the smallest flower. And so, it, it encompasses it into a world. And that, it’s bizarre to say that it’s a world, but you know the idea of...this is all inclusive.”

Engaging with and experiencing this feeling of interconnectivity not only allowed for deeper reflection on ITELs and participant’s personal relationships with the natural world but also served to draw attention to these interconnectivities as they showed up in their lives, reflecting an ongoing learning process that offered a gentle integration and celebration of ITELs. Participants also noted that the framing of the workshops through an ITEL lens was important in “*planting a seed*” to grow for future engagement with ITELs. Additionally, the collective meditation sessions were appreciated for being treated as simply being a natural part of the workshop “curriculum” without the need to “...to justify it in anyway”. Participants wished that meditative practice was part of “...other classes”,

²³ The inner disposition of a human being that inclines towards good, towards deeper connection with creation (see also Chapter 3: *Theorising for Education for Sustainability and Regeneration*).

²⁴ Translated to, stewards of the earth, taking care of the earth due to our deep relationship with it.

with one of them sharing that the practice had changed her ideas around meditation and would keep her calmer when she was having “*troubles*”, even though she had “...*never been a fan of meditation*”. Whether it was the first time they found meditative practice helpful or wished for it to be integrated within other courses at the university, the experiential learning of a simple 3-minute meditation treated as an organic part of the workshops created intentions to introduce the practice into their own lives, allowing for continued engagement with this ITEL focused literacy beyond the workshop space.

7.3.3 Safe spaces, community, and critical conversations

The process of celebrating ITELs encouraged the creation of safe spaces for critical conversations to take place. These spaces were highlighted by participants to be an important experience for them, where difficult emotions and issues were addressed, feelings of gratitude were cultivated, and where they were able to build greater appreciation and understanding of themselves, each other, and ITELs in the context of the environmental crisis.

The co-creation of a safe space was enabled by the methods chosen for the workshops, specifically the facilitation of reflective discussions that demonstrated the practice of holding space and active listening within a circle. The time and space offered to each participant to share their thoughts and ideas during these sessions within the first workshop modelled those that came later. Following this, participants naturally began to emulate and hold space for each other whenever we were in a circle. They appreciated these co-created spaces for allowing them to share from their experiences without the pressure to possess expertise in the topics of discussion. This was an important factor in enabling them to share deeply without fear of judgement, which contributed to their understanding of each other, which in turn helped them validate their struggles for regenerative and sustainable futures (see also Chapter 6: *Apply*). Sustaining these spaces throughout the workshops, therefore, led to a continued sense of belonging and validation in the context of the environmental crisis (Figure 47).

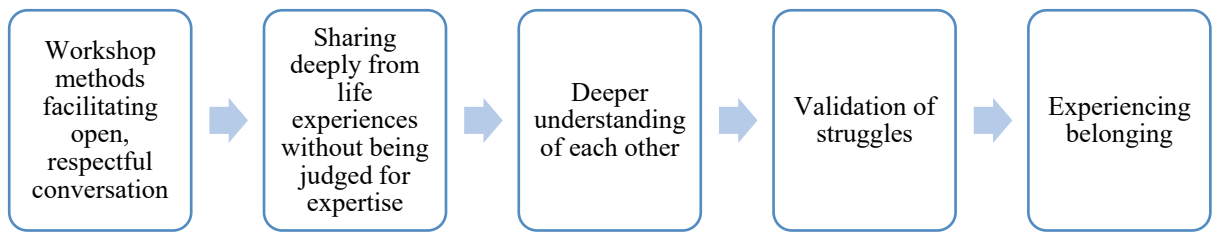


Figure 47 Workshop dynamics of experiencing belonging in the context of the environmental crisis.

As illustrated above, the participatory, reflective, and pluriversal methods allowed for the modelling and co-creation of these important spaces where participants felt comfortable to share and speak freely. It is only through being in safe, open, respectful dialogue and conversation that we can begin to understand the “other” increasing our understanding of their challenges in the context of environmental and sustainability issues. This helps us relate their struggles to our own and experience a sense of belonging through building our metaphorical “tribes”.

Participants appreciated the co-created workshop spaces and the ensuing conversations for allowing difficult emotions to be held, feeling gratitude for things that *were* working, and realising the importance of focusing on their journeys towards sustainability and regeneration as opposed to the end goal. At the UofG a participant reflected on the importance of acknowledging...

“the frustration. [...] I think by acknowledging that a lot of people feel these feelings within topics of nature and the environment, it could help with possibly learning how to nurture more confident and hopeful feelings.”

She also appreciated the Ketso exercise to identify what was working and beneficial, sharing that, *“It was something that I haven’t thought of in a while”*. Another participant reflected on *“critical discussions”* that were made possible, sharing her struggles and despair when things did not change as quickly as she wished them to. She resonated with

the idea of “the way” within the concept of Doigh Nadair²⁵, as discussed within the workshop, as it helped her look at her activism as a journey instead of a destination.

“It’s really helpful because it reminds you that, that it focuses on the way, and not the end goal and you are always in the process. As soon as you start thinking about utopias and ideal situations where everything is solved, it’s a bit of a trap.”

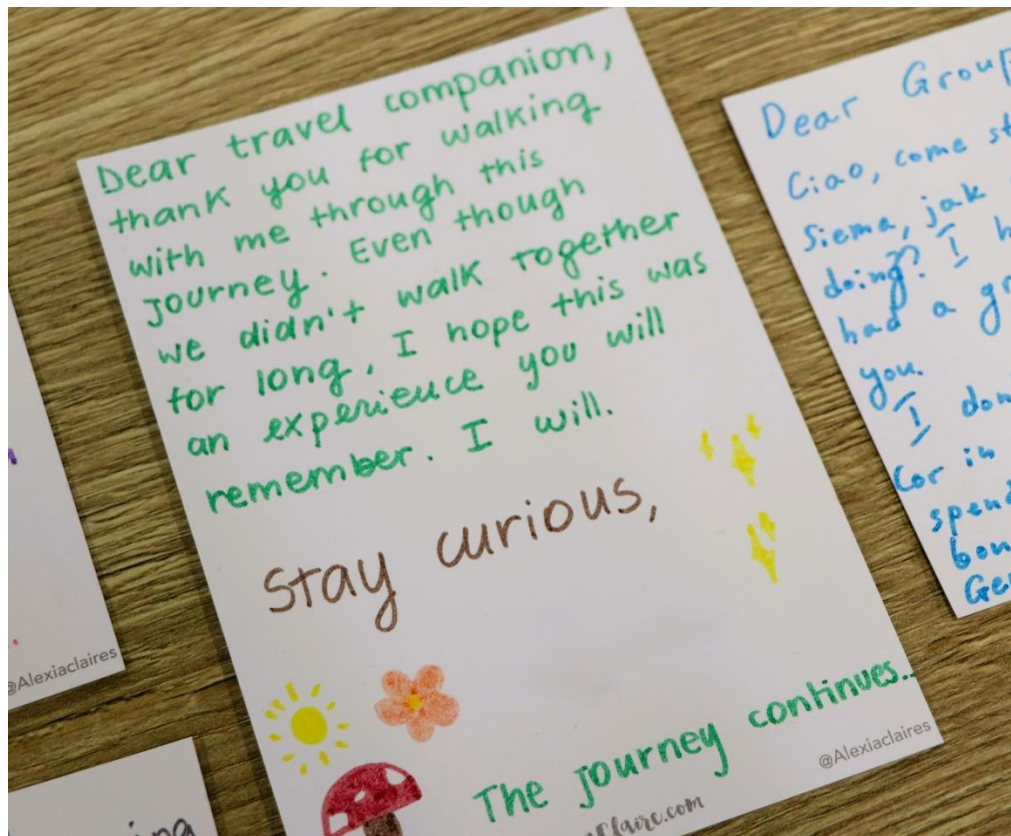


Figure 48: Participant postcard reads, “Dear travel companion, thank you for walking with me through this journey. Even though we didn’t walk together for long, I hope this was an experience you will remember. I will. Stay curious. The journey continues.” (Participant name has been removed to preserve anonymity).

The sentiments shared through participant dialogue and the postcard above demonstrate the need for creating similar spaces to address difficult realities and emotions in the context of the environmental crisis, with important implications for addressing issues such as eco-anxiety. The co-created workshop spaces allowed these concerns to be processed through

²⁵ Scots Gaelic phrase translating to The Way of Nature, referring to the intrinsic ways/ and rhythms of nature. “The way” is also understood to be a journey, an ongoing unfolding of events and happenings without a set journey.

participants being heard and validated, simply through reflective practices and by being in conversation with each other. This enabled them to readjust their thoughts and responses to the crisis taking into context their personal journeys, allowing for more clarity, curiosity, and resilience as opposed to feelings of frustration and despair. The arts based inquiry and various reflective practices for the workshops were perceived to contribute to the creation of safe spaces through enabling greater understanding of the self and personal struggles in the context of the crisis. A WCDT participant shared that the workshop space “*made you go and research yourself*”, while what stood out for another participant was “*...giving us the space and the time for sharing, and holistically. That's what I really loved about it.*” A UofG participant shared that she had felt “*hypocritical*” at first painting (her struggle with conflicting emotions) into the Celtic knot which represented an indigenous tradition. However, as she painted, she realised the importance of seeing her own work in relation with what others were making through the interconnected strands, suggesting the need and desire to address difficult emotions and issues within community.

“It was sort of like a pathway into me. Having a conversation with myself about how I think and feel, which is something that I think is really important to do, because if you don't stop and think about how you're internally feeling within a situation, then you don't, it's like you don't know where to go, you know? [...] Because you gave us a lot of space to reflect.”

This suggests that both the art and reflective practices were especially important in contributing to the co-creation of safe spaces where participants felt enabled to explore and understand themselves, their relationality with the natural world, and their collective responses to the crisis. As discussed above, the co-creation of these spaces enabled critical conversations to take place within the workshops. A UofG participant expressed that the “*most powerful part has definitely been the conversations [...] And it helps us know that other people are doing this. And like, there is a way to get involved.*” Another participant appreciated “*...the kind of community we've shared in this space*”, the conversations that allowed for learning and exploration, and the sharing of stories. A WCDT participant shared that she had really appreciated finding out that “*other people are on the same wavelength that you've never met before*”, reflecting her appreciation for being engaged with a like-minded community and echoing the sentiments of the UofG participants above. Participants also reflected on the therapeutic effect of being in conversation about environmental issues as opposed to ruminating about them in isolation. The emphasis

placed on a sense of community and therapeutic conversations strongly suggests the need for co-creating similar decolonial, pluriversal and participatory spaces for EfS, specifically in the context of the environmental crisis. The importance of these conversations is underscored by participant dialogue evidenced across the workshop sites. An excerpt from one of these conversations is shared below:

Participant 1: *“I kind of came into this workshop expecting practical solutions [...] but that’s not really what happened but in a good way. I think it was like planting a seed in all of our brains. Of just the way in which we think about nature through an indigenous lens. Which we can all then decide how we want to use in a more practical way within our life.”*

Participant 2: *“For me, the most special thing has been the way that the conversations have happened. I find, I’ve not had any experiences so far at university where seminars actually work. [...] So, it’s been grounding and exciting to come here every week, and the way you’ve guided us and the way that everyone has been interested. I feel like everyone is able to speak from their knowledge and their experience and that’s respected, which I think comes into thinking through these indigenous knowledges. [...] I wish everyone else was reminded that these conversations work by people just thinking, not by having a right answer to a question.”*

Participant 3: *“This is what we were saying, it just feels like everyone actually wants to listen here.”*

Participant 4: *“[...] Yeah, and just enjoy the experience and it was enjoyable, like, knowing that you can speak without having fear, doubts [that] you’re wrong and you lose points, you get a bad grade, and your personal supervisor will think less of you or anything like that. There’s just no stress, it’s kind of like a safe space.”*

One of the intentions of these workshops was to bring participants together and experience a sense of community in the context of the environmental crisis. To introduce or “*plant a seed*” for ITELs to grow and in the process celebrate each other’s traditions and connections with the natural world. Participant 1’s response to sharing thoughts about the workshop experience encapsulates the realisation of these research intentions for the

workshops. The dialogue above demonstrates how important it was for participants to feel part of a space where their thoughts and experiences were heard, respected, and shared without fear of being judged. Describing the experience as “grounding”, “exciting”, and “enjoyable” further evidences the positive effects of creating pluriversal spaces for EfS, underscoring their importance in an increasingly divided world with rising levels of overwhelm and eco-anxiety in the context of the environmental crisis. The appreciation of these safe spaces and sense of community cultivated within was also evident from participants’ postcards and farewell wishes for their peers. They shared gratitude for “sharing from your heart”, “listening with intention”, creating space for “critical discussions”, and cultivating a “sense of community”. A selection of these postcards is shared below (names have been removed to preserve participant identity):

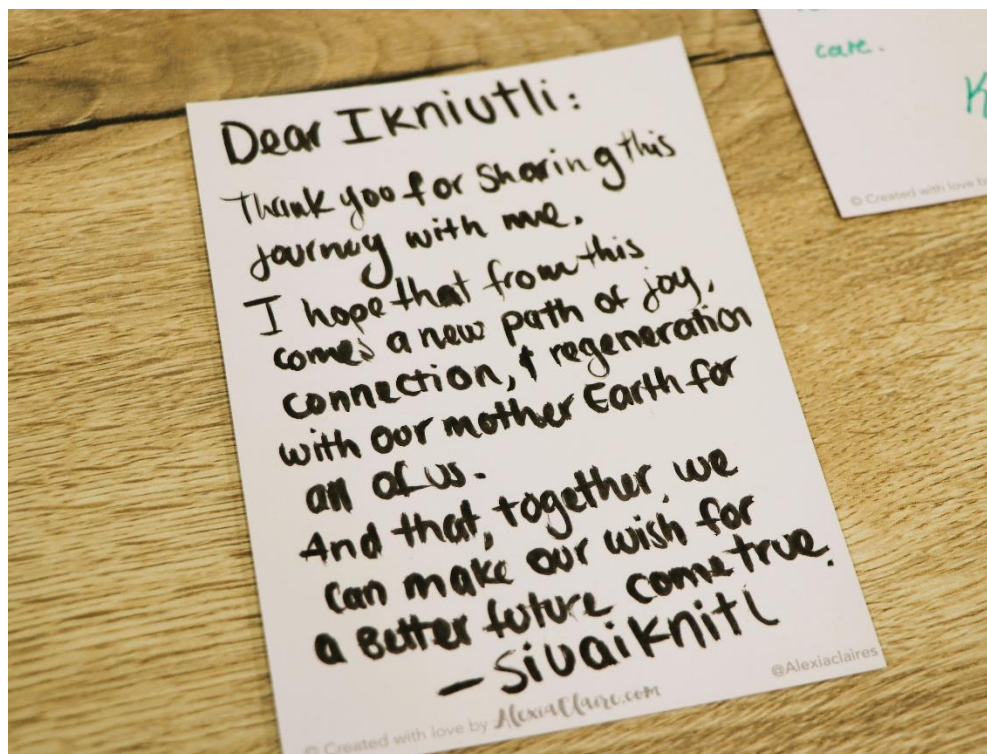


Figure 49 UofG: Dear Ikniutli: Thank you for sharing this journey with me. I hope that from this comes a new path of joy, connection and regeneration with our mother Earth for all of us. and that together we can make our wish for a better future come true. – Siuaiknitl.

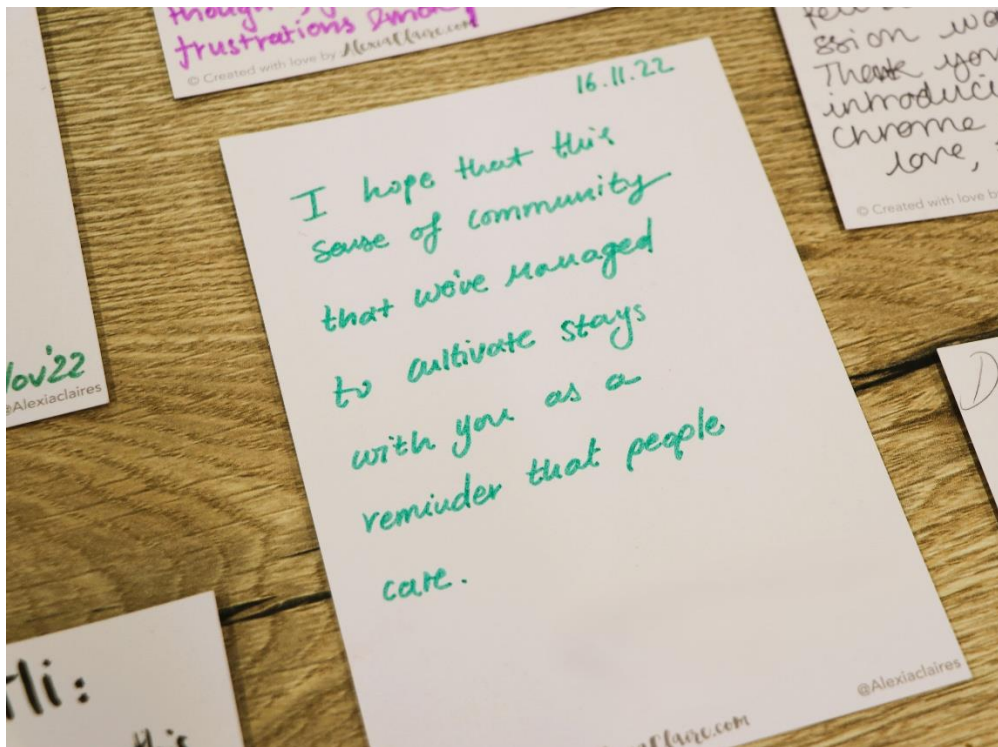


Figure 50 UofG: “I hope that this sense of community that we’ve managed to cultivate stays with you as a reminder that people care.”

Both the above postcards reflect participants’ hopes and wishes for remembering the togetherness and sense of community that we experienced. The first postcard (Figure 11) depicts the participant’s use of the Nahuatl word *icniuhitli*²⁶ to address the person taking the postcard, reflecting her attempt at reviving her indigenous literacies and expressing the kinship she felt with her peers. This strongly suggests that the safe spaces and rich conversations within were key to cultivating a sense of community for participants and contributed to increased engagement with and celebration of ITELs.

This section discussed findings that emerged from the process of celebrating ITELs within the workshop spaces across the three sites. The process demonstrated participants’ creative expression in response to the workshop prompts, engagement with the concept of interconnectivity, increased understanding and validation of personal struggles, and a deep appreciation and desire for the co-creation of safe spaces that allow for critical conversations to take place.

²⁶ The Nahuatl dictionary translates this to friend, companion, sibling, or descendant from the same ancestors.

7.4 A note on openness and dissonance

As evidenced in the sections above and previous chapters, participants across the three sites demonstrated an openness towards ITELs often resulting in deep engagement with the subject matter and a rich exchange of thoughts and ideas. Whether this was through signing up to invest their time in the series of workshops, actively engaging with ITEL focused prompts, developing curiosity to explore and integrate ITELs, or bringing artefacts from their traditions reflecting complex emotional, physical, and spiritual connections with nature, participants demonstrated not just an openness but an acknowledgment, honouring, reclamation, and, therefore, celebration of ITELs throughout the workshop series.

However, there were also a few dissonances that arose in response to viewing human-nature relationalities through ITELs. The dissonances showed up either through reservations to specific religious traditions, or both indigenous and religious traditions when they were perceived to contribute to the severing of human-nature relationalities. Participant openness to ITELs in general was strongly evidenced across the three sites. A participant at the WCDT for instance, in response to a question about mandalas, shared her work as a child minder where she would take children to Pollock Park (an urban park in Glasgow) to gather natural materials for mandala making. She found it to be a beautiful experience...

“...because they’re working together as a team [...] Um, and there’s also something quite meditative about it as well. So, they might have entered that space really quite chaotic. And by the time we’d produced a mandala, they were so calm, and you know working together. So, yeah, I think, it’s a beautiful thing to do with children...and adults as well.”

This suggests not only that the participant herself was open to ITELs but also that facilitating learners to have physical contact with natural materials and elements could similarly enable openness to ITELs, through activities such as mandala making. It did not matter that the participant did not relate mandala making back to a specific indigenous, faith, or cultural tradition. What is significant is that she saw this as an important and beautiful practice for bringing people together and centring them in the present moment - both aspects of coming together in community and doing meditative work are a significant feature across a range of ITELs. As Naess notes, the deep ecology movement which supports people’s journeys towards sustainability and regeneration may be supported by

individuals from a diversity of religions, cultures, and philosophies - “The deep ecology movement can be seen to manifest both plurality and unity: unity at level 2, and plurality at other levels” (Naess, 2008, p.115), signifying that it is the openness and engagement with deep ecology *principles* that is of importance and represents unity between individuals, even though they may arrive at this unity from a range of foundational beliefs or worldviews. It does not matter what foundational perspectives people arrive at these principles from as the difference in perspectives is what allows for plurality and richness of diversity within the movement.

Participants at the WCDT, similarly exhibited openness to ITELs which was evident, for instance, through their keen and energetic participation in the Celtic knot making activity even though most found it difficult to follow the steps to make more than one knot by the end of the workshop. They were curious about the origins of the knot, remarking on the metaphorical learning from the process. A participant commented that the process of interweaving made him think of “*the flow of rivers*” and all the currents “*entwining with each other*”, pointing to the potential power of tactile craftwork and metaphorical thinking to facilitate engagement with ITELs, in addition to participating in these activities with community. Participant openness was also evident from their efforts to keep working on the knots till the end of the workshop: appreciating the dexterity required to work on the strands; supporting each other; being delighted at completing a knot; and finding it equally humorous when they could not, thereby celebrating ancient literacies and ways of making sense of the world in the process.

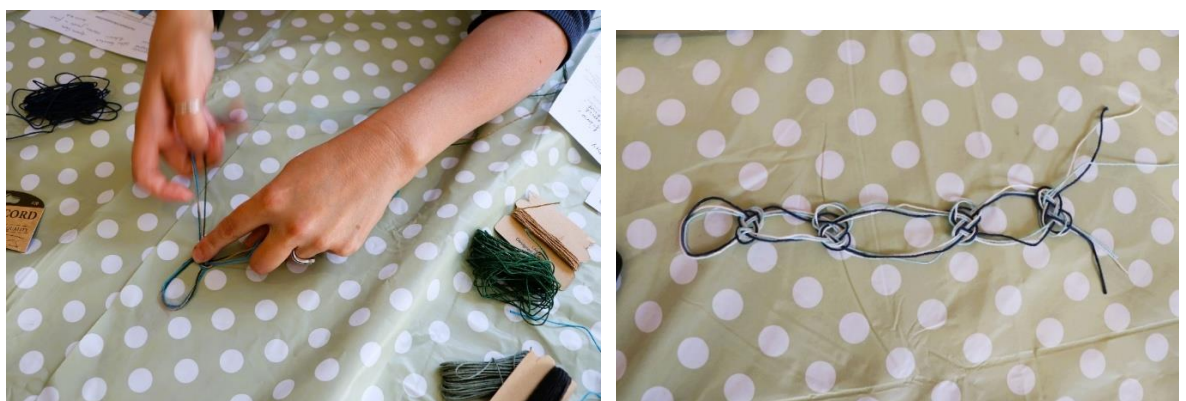


Figure 51 WCDT: Participant working on the Celtic knot (left), in-progress Celtic knots (right).

At the SFGN, participants similarly shared feedback on the workshop being “*great fun*” wishing that we had “*another session*”, while others stayed back to work on their art standing, sitting, in conversation and/or swaying to the local music someone had started playing on their phone. There were, however, some dissonances with a few participants attributing the loss of indigenous knowledge and practice, and even spirituality, to Christianity with a participant who herself identified as Christian, sharing that it had “... *tended sometime to brainwash people about nature*”. Whereas, on the other hand, a participant had quoted verses from the Bible sharing personal connections to the natural world *through* Christianity. Both participants reminisced over memories from earlier on in their lives appreciating the wisdom and teachings of their cultures which were now seemingly lost. Their ideas about the natural world, its inherent sacredness, and need for conservation clearly converged, however, they differed in their fundamental philosophies, which in this case was through differing views on Christianity. I wonder if they appreciated that they had similar sentiments when it came to responding to the environmental crisis, despite their differing stances on fundamental philosophies – a key feature of the deep ecology movement where individuals from a diversity of philosophies can converge for a shared vision of a regenerative future.

A few participants at the UofG workshops also expressed similar reservations about Christianity and the notion that other modern religions had played a role in distancing humans from the sacredness of the natural world, and as a result from nature itself. It was expected that participants across the three sites would have dissonances when it came to aligning with specific philosophies, which is why emphasis was placed on the shared aspects of ITELs from across the world instead of focusing on a singular indigenous, faith, or cultural tradition. However, I did not expect the dissonances from participants to be mostly in relation to Christianity, especially across sites, both at the UofG by students of European heritage and at the SFGN by individuals of central/southern African heritage. On reflection, one of the reasons for this could possibly be the colonial propagation and application of the religion in Europe and central/southern Africa. The colonial propagation of Christianity (similar to a misappropriation of indigeneity, see below), is often perceived as being intolerant of other faiths and indigenous traditions, possibly leading to the dilution of spiritual and sacred perspectives of the natural world (Wariboko, 2018).

In addition to dissonances with Christianity in particular, a participant at the SFGN with Indian heritage, expressed his dissonance with both indigenous traditions and the Hindu

religion, which as he shared, he was most familiar with. He cited nationalist trends in India, which were developing to be increasingly fascist due to their obsession with indigeneity and were being used by those in political power to oppress and discriminate against people that the political parties did not consider native or indigenous. In his view, *both* indigenous and religious traditions, and especially the Hindu tradition was

“...also about a violent way of ordering nature and seeing it in a particular kind of way [...], the history is about violent intrusions that were made into the forest during the consolidation of religion and taming of (the) forest [...]. I suspect that all these traditions, like now indigeneity is very much showcased in the place where I come from, but that’s showcased by the right wing.”

I responded to the participant by elaborating on the definition of ITELs for the research study, a coming together of the various indigenous, faith, and cultural traditions and the striking similarities in their conceptions of human-nature relationality. These ITELs, not defined by the violent actions of flawed human beings who align themselves to any of these traditions but defined rather by the core *principles* of these traditions in their most unadulterated forms that emphasise oneness, unity, and the sacredness of human-nature relationships. Any ideology may be misappropriated and used for nefarious purposes, including indigeneity, to legitimise the othering and prosecution of those who, as the participant noted above, do not conform to definitions of what may be considered indigenous/native.

Consequently, the research workshops were designed to consolidate the shared environmental literacies of indigenous, faith, and cultural traditions as they relate to human-nature relationality. The above participant reflections demonstrate, however, that individuals who have had negative experiences with religious traditions they were raised in or were surrounded by, may find incongruence between these and indigenous literacies as they relate to the environment, perceiving religious traditions as marginalising and suppressing indigenous ones. Further, individuals (in this case, only one from across the workshops sites) who have had similar negative experiences with both faith *and* indigenous traditions may find it difficult to reconcile any of these with environmentalism at all.

These findings point to tensions individuals may experience not only between certain religions and indigenous traditions, but reservations to both, if they experience the misappropriation of these traditions to promote or practice destructive practices towards the natural world, including humans. Participants who only had reservations to Christianity, and in some cases by extension other modern religions, resonated deeply with the ITELS introduced within the workshops which were an amalgamation of environmental literacies from across indigenous, faith and cultural traditions. Even though they may have had reservations to the practices of particular faith traditions, they resonated with the environmental literacies derived from these. For the participant who had reservations about both indigenous and faith traditions, the celebration involved making connections to nature through reclaiming the cultural traditions of their family and upbringing, even though and I contend, these may have evolved over time from the indigenous traditions of the land the participant grew up and had their roots in.

7.5 Chapter conclusion

This chapter explored and discussed findings related to the celebration of ITELS across the three research sites. The findings evidence that ITELS were celebrated through the facilitation of two key processes: making personal connections to the natural world through reclaiming indigenous, faith and/or cultural traditions within the Sharing Circle, and articulating responses to ITELS through the embodied exercise. Participants' offerings for the Sharing Circle demonstrated an incredible diversity in their ecosophies (personal philosophies of perceiving and interacting with nature) and in the pluriversal ways they articulated and made personal connections to nature. They demonstrated engagement with both their own and other's ITELS through songs that reminded them of the landscapes of their homeland, stories from childhood, and making indigenous artwork from the lands of their ancestors. The thread connecting all of these offerings, however, is participant openness to and engagement with ITELS and an attempt to make connections to nature through these perspectives. Looking at nature through their traditions personalised their relationship with it, allowing for reflections on deep physical, emotional, and spiritual relationalities with the natural world and a developing awareness of their ecosophies. Their engaged participation within the Sharing Circles promoted creativity and connection through the making and sharing of artefacts, allowing for an increased appreciation of each other's distinct human-nature relationalities.

Chapter 7: Celebrate

The embodiment exercise enabled participants to articulate their responses to ITELs and celebrate their existence in their lives, whether this was through curiosity, exploration, intentions for greater engagement and struggle with integration, decolonising societal structures, or becoming increasingly open to them over the course of the workshops. In addition to evidencing openness and engagement, participants also demonstrated shifting the mainstream status of ITELs being archaic or backwards, through portraying their existence and importance within their personal lives, celebrating the inherent wisdom within these indigenous and traditional environmental literacies. The process of facilitation also demonstrated that an ITEL focused ecopedagogy enabled participants to co-create safe spaces for critical conversations and important discussions to take place, contributing to an increased understanding of each other and their struggles in the context of the environmental crisis. Participants reflected on various learnings from the workshops, including the concept of interconnectivity which emerged as a prominent theme across the three sites, and a desire for the integration of meditative practice within university courses and their personal life.

The *celebrate* workshops (and the *celebrate* section of the SFGN workshop) were designed to end the workshop series by celebrating ITELs in the widest ways possible. Celebration in everyday life is traditionally enacted with people, in community. The sense of community and belonging co-created within the workshops, through acts of collective sharing and holding space, enabled participants to enact their own reclamation and celebration of ITELs. This involved the honouring and acknowledgment of languages, cultures, traditions, and diverse expressions of human-nature relationality which represented a collective celebration of the diverse “tribes” the participants came from. The ITEL focused ecopedagogical spaces enabled participants to engage with and take with them ideas and feelings of interconnectivity, hope, resilience, rethinking, relearning, and community. Consequently, despite the brevity of time spent together, a diversity of individuals was able to experience a sense of belonging in the context of the environmental crisis and celebrate each other’s stories and offerings, all through the simple invitation of engaging with ITELs and foregrounding our relationship with the natural world.

8. Conclusion

This research inquiry explored the use of indigenous and traditional environmental literacies (ITELs) for teaching and learning for sustainability and regeneration in non-formal educational spaces, in the contemporary context of the environmental crisis. The increasing challenges posed by the crisis have raised critical questions and contributed to an increased awareness of the need for foundational change. This foundational change is sought through obvious areas such as government policy and activism for divestment from fossil fuels (Friedline, 2024), but also through ongoing dialogue and research that explores how to effectively respond to; issues faced by communities impacted by the crisis, increasing eco-anxiety (Banwell and Eggert, 2024), and repair our fractured relationships with the earth, specifically through challenging capitalist, extractivist, socio-economic structures and ways of thinking and being (Kimmerer, 2002, 2013).

This study makes original, crucially needed, and timely contributions to this gradually emerging body of work that asks critical questions to explore and address the foundational issues that have led to the crisis. This includes reductive, capitalist, humanist worldviews (Escobar, 2011; Escobar, Osterweil and Sharma, 2024) universalised through Euro-Western paradigms that form the foundations of global academia and have permeated much of the human psyche through imperialism and (neo)colonialism (Stein, 2017, 2022; Magnusson, 2023). This research inquiry has made two key contributions aimed at resisting these worldviews to develop deeper human-nature relationalities:

- a) an innovative decolonial and pluriversal theoretical framework for a critical, radical practice of education for sustainability and regeneration, intertwining ecopedagogy, deep ecology and Islamic environmentalism.
- b) a demonstration of the above in practice and strong evidence that ITELs can act as a crucial, resistive force against universalised Euro-Western paradigms and capitalist, extractivist, socio-economic perspectives.

The research inquiry asked the following question - How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment, and inform responses in the

contemporary context of the environmental crisis? Throughout the three findings and analysis chapters, I have detailed and illustrated how the process of facilitating an exploration of and engagement with ITELs created a decolonial and pluriversal space, where participants were enabled to engage in critical radical dialogue and reflect on and celebrate deep, personal connections with the natural world.

This engagement with ITELs was enabled through the theoretical framework designed for the research inquiry that not only extends the discipline but bridges philosophies from places that are conventionally treated as the opposing binaries of the “East” and the “West”. This theoretical lens was used to facilitate the practice and demonstration of the incredible possibilities of dialogue and communication between cultures, generations, traditions, and philosophies across geographies and time. It has made a critical contribution to the field of teaching and learning for sustainability and regeneration, offering holistic, decolonial, pluriversal, and restorative perspectives for developing and nurturing human-nature relationalities.

The research inquiry has also highlighted two key aspects that elicited strong responses to the socio-economic issues created by the environmental crisis: decolonial perspectives on environmental literacies and reflections on human-nature relationality. The first aspect allowed for expansive thinking and reflection; unhindered by reductive Euro-Western perceptions of human-environment relations and the nature of life on earth, participants were able to (re)connect with their own indigenous, faith, and/or cultural traditions and literacies of the environment. The second aspect of reflection enabled the articulation of deep, ethical, relationships with the natural world and cultivated a sense of community through the diverse ways participants expressed their connections with the natural environment they were advocating for. Together, the decolonial and pluriversal spaces and the human-human and human-nature relationalities reflected on within these spaces organically generated powerful participant responses that evidence environmental consciousness, themes of stewardship, kinship with non-human life and creation, and a strong appreciation and desire for practical action targeting systemic issues responsible for the environmental crisis.

The practice of decolonising environmental literacies, and reflections on and articulations of deep human-nature relationality, were supported and brought to life through the use of ITELs, the core element of this research inquiry. As detailed in the methodology chapter

(*Research Inquiry: design and methods*), I do not claim for the methods used in this inquiry or the use of ITELs to be the most effective way for decolonising environmental literacies or reflecting on/developing human-nature relationality. Rather, through my research inquiry, I have illustrated the power and effectiveness of using ITELs for these aims. Facilitating participants to *revive*, *apply*, and *celebrate* ITELs, in the context of the environmental crisis, organically responded to the research question and aims of this inquiry as detailed within the three findings chapters.

Revive, Chapter 5 of this thesis, illustrated the role of arts-based inquiry and reflective discussions to revive ITELs through an appreciation of the complex and intertwined nature of life on earth. Participants were able to experience a sense of interconnectedness and unity through diversity through the opening meditative practices, individual and collective artwork, and the ecopedagogically oriented pluriversal spaces that we co-created. Student participants at the university expressed that this was the first time they had shared about their indigenous/cultural roots and/or spiritually oriented practices within a university space without feeling the need to defend their thoughts and experiences. This points to present day imperialism within mainstream Euro-Western academic culture where decolonial, indigenous, faith-based, and the diversity of cultural perspectives is still made to feel unwelcome (Stein, 2017). Consequently, the workshops and their decolonial and pluriversal approach to education for sustainability and regeneration, specifically within a higher education space, demonstrate a critical practice of resisting imperialist cultures and structures to revive historically marginalised literacies and ways of thinking and being.

Apply, Chapter 6 of this thesis, demonstrated an application of ITELs to contemporary sustainability issues, the power of participatory, democratic, group problem solving and the significance of addressing collective challenges with and through community. This sense of community enabled participants to share their frustrations, feel validated, and supported in their journeys towards and activism for individual and collective sustainability and regeneration. This chapter evidenced how the use of ITELs enabled strong resistance to and disruption of environmentally destructive norms as they relate to capitalist and consumerist ways of thinking and being. It also evidenced participants' frustrations with current socio-economic systems and their desire to address and rectify foundational issues responsible for the crisis. Student and community participants' responses combined to create a powerful, collaborative response which points to the untapped potential of intercultural and intergenerational collaboration to address contemporary sustainability

issues. The *apply* workshops proposed a practical consideration of ITELs in the microcosm of our shared spaces, showing that working across disciplines, differences, cultures, and generations is not only possible but essential for strong, effective responses to the environmental crisis in the macrocosm of the real world.

Celebrate, Chapter 7 of this thesis, explored participants' celebration of ITELs through diverse expressions that included art, song, poems, stories, anecdotes, memories, and stories. ITELs were also celebrated through the embodied exercise that articulated participants' openness and responsiveness towards ITELs. Participating in the Sharing Circles promoted creativity and connection and allowed for an acknowledgement and celebration of each other's indigenous, faith and/or cultural traditions. It also personalised participants' relationships with the natural world enabling them to reflect on their ecosophies or personal philosophies of ecological harmony and equilibrium. An ITEL focused ecopedagogy also enabled the co-creation of safe spaces for critical conversations to take place, contributing to increased understanding of each other through acts of collective sharing and holding space for each other's offerings. Participants were facilitated to experience a sense of belonging and solidarity, in the context of the environmental crisis and its challenges, through celebrating the diversity of "tribes" they had come from with shared visions for sustainable and regenerative futures.

My intention with this research inquiry was to explore the use of ITELs within higher education and community learning, with student and community participants, to push disciplinary boundaries and use the findings to open up new spaces of possibility for education for sustainability and regeneration, within and outwith formal and non-formal educational spaces. This work, therefore, has strong implications for contemporary and future practice of radical, critical, decolonial, and pluriversal education for sustainability and regeneration. It strongly rejects practices of shallow ecology (Naess, 1986, 2008), "sustainable development", greenwashed tokenism, and business as usual. Consequently, it argues for a holistic, organic approach to teaching and learning for environmental sustainability and regeneration that foregrounds human-human and human-nature relationality, developing and nurturing our relationships with the greater community of life, life forms, and creation on earth and beyond.

As an educator and researcher, therefore, I hope that the significance of this work for our times is reflected in, and inspires, the crucial need and urgency for uniting with each other

and the earth, against divisive colonial, imperialist, capitalist, and consumerist forces that challenge both human and non-human wellbeing and community. Future directions for research include exciting possibilities for a deeper exploration of ITELs across disciplines, across cultures, and across generations bringing people together in resilience and community. Specifically, this research could investigate the development of teaching and learning curricula for sustainability and regeneration that foreground decoloniality and pluriversal perspectives within a range of subjects in formal (schools, colleges, universities) and non-formal (community centres, online courses, retreats) education. Further research could also explore the use of ITELs for responding to the environmental crisis through tapping into the potential for intergenerational, multicultural collaboration working with a diversity of people and literacies. However, always with intentions of restoring the *mizaan*, or the balance and equilibrium, within our human selves and the non-human life and creation we share our very existence with.

The conclusion of this project marks for me new beginnings both as an educator and researcher. I have been humbled by the joy and gratitude I have experienced facilitating the research workshops with a diverse set of participants and engaging with the workshop content that made us deeply connect with and understand each other in the context of the environmental crisis. As an educator, therefore, I am excited to develop participatory, arts-based, creative, and reflective workshops and retreats with a greater depth of engagement with ITELs within both conventional educational spaces and the outdoors. I am also invested in developing interactive teaching and learning practices and tools that can be used by educators and individuals to develop personal ecosophies. As a researcher, I intend to further investigate my theoretical framework and explore how we can deeply engage with local, place based, and indigenous environmental literacies to interweave them into our thinking and being to create sustainable and regenerative presents and futures.

9. References

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10. Appendices

Appendix A: Ethics Approval from the College of Social Sciences



26 April 2022

Dear Sundas,

College of Social Sciences Research Ethics Committee

Project Title: Environmental literacies for regenerative and sustainable futures. decolonising environmental literacies through reviving indigenous and traditional philosophies

Application No: 400210150

The College Research Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Start date of ethical approval: 26/04/2022
- Project end date: 30/10/2024
- Any outstanding permissions needed from third parties in order to recruit research participants or to access facilities or venues for research purposes must be obtained in writing and submitted to the CoSS Research Ethics Administrator before research commences: socsci-ethics@glasgow.ac.uk
- The research should be carried out only on the sites, and/or with the groups and using the methods defined in the application.
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research: (https://www.gla.ac.uk/media/media_490311_en.pdf)
- Any proposed changes in the protocol should be submitted for reassessment as an amendment to the original application. The **Request for Amendments to an Approved Application** form should be used: <https://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/staffandpostgraduateresearchstudents/>

Yours sincerely,

Dr Susan A. Batchelor
College Ethics Lead

Susan A. Batchelor, Senior Lecturer
College of Social Sciences Ethics Lead
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School of Social and Political Sciences &
Scottish Centre for Crime and Justice Research
Ivy Lodge, 63 Gibson Street, Glasgow G12 8LR.
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Appendix B: Ethics Amendments Approval (1)



College of Social
Sciences

College Research Ethics Committee

Request for Amendments - Reviewer Feedback

Ethics Committee for Non-Clinical Research Involving Human Subjects

Application Details

Postgraduate Student Research Ethics Application

Student id. Number if applicable:

Supervisor/s if Student Application: Mia Perry, Zoe Strachan

Application Number: 400210150

Applicant's Name: Sundas Mahar

Project Title: Decolonizing Environmental Literacies for Regenerative and Sustainable Futures

Original **Start** Date of Ethics Application Approval: 26/04/2022

Original **End** Date of Ethics Application Approval: 31/10/2024

Date of Review: 05/07/2022

Application Status: Amendments Approved

REVIEWER MAJOR RECOMMENDATIONS	APPLICANT RESPONSE
REVIEWER MINOR RECOMMENDATIONS	APPLICANT RESPONSE
ADDITIONAL REVIEWER COMMENTS	APPLICANT RESPONSE
Approved – good luck with the research.	

Please retain this notification for future reference. If you have any enquiries, please email socsci-ethics@glasgow.ac.uk.

University of Glasgow
College of Social Sciences, Florentine House, 53 Hillhead Street, Glasgow G12 8QF
The University of Glasgow, charity number SC004401

Appendix C: Ethics Amendments Approval (2)



College of Social
Sciences

College Research Ethics Committee

Request for Amendments - Reviewer Feedback

Ethics Committee for Non-Clinical Research Involving Human Subjects

Application Details

Postgraduate Student Research Ethics Application

Student id. Number if applicable:

Supervisor/s if Student Application: Mia Perry, Zoe Strachan

Application Number: 400210150

Applicant's Name: Sundas Mahar

Project Title: Decolonizing Environmental Literacies for Regenerative and Sustainable Futures

Original **Start** Date of Ethics Application Approval: 26/04/2022

Original **End** Date of Ethics Application Approval: 31/10/2024

Date of Review: 09/01/2023

Application Status: Amendments Approved

REVIEWER MAJOR RECOMMENDATIONS	APPLICANT RESPONSE
REVIEWER MINOR RECOMMENDATIONS	APPLICANT RESPONSE
ADDITIONAL REVIEWER COMMENTS	APPLICANT RESPONSE

Please retain this notification for future reference. If you have any enquiries, please email socsci-ethics@glasgow.ac.uk.

University of Glasgow
College of Social Sciences, Florentine House, 53 Hillhead Street, Glasgow G12 8QJ
The University of Glasgow, charity number SC004401

Appendix D: Flyer for Workshop Invitations



Appendix E: On-the-day Workshop Plans

Scotland | Woodlands Community Development Trust

Research Site: 1 of 3

Standalone workshops (walk-in) with community members.

Research Questions and Data Generation Activities			
Research Question	How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment and inform responses in the contemporary context of the environmental crisis?		
	Workshop Activities	Data Generated	Objectives
Revive - W1 2 hrs	Specific question: How can individuals be facilitated to revive ITELs and what is demonstrated through this process? a. Warm Up – Participant engagement with each other (5 mins) b. Meditation – grounding, connection (2-3 mins) c. Workshop Slides (10 mins)	- Observations, Audio Recordings, Photos - Artwork Created - Participant Reflections	- Engagement with ITELs from around the world. - Reflecting on our connections with the natural world, understanding our spiritual connection and oneness with all life forms, expressing it through artwork. - Reflecting on deep human-nature relationships.

	d. Discussion (5 mins) e. Garden Walk + Journal Reflections (20 mins) f. Celtic Patterns (50 mins) g. Closing, Takeaways (10 mins)		
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Apply – W2 2 hrs	Specific question: How can individuals be facilitated to apply ITELs and what is demonstrated through this process? a. Meditation – anxiety, resilience, hope (3 mins) b. What is your favourite thing about nature/What is your favourite experience in the natural world? Write/draw, pass it on to your neighbour (10 mins) c. Workshop Slides + Discussion (30 mins) d. Problem-solving with Ketso (1hr)	- Observations, Audio Recordings, Photos - Ketso Chart	- To resist materialist, consumerist, and extractive ways of looking at the environment and problem solve from ITEL focused holistic, ethical, perspectives that benefit all life forms.
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	<p><i>Q. How can we develop a regenerative community?</i></p> <p>e. Closing, Takeaways (6 mins)</p>		
<p>Celebrate – W3</p> <p>2 hrs</p>	<p>Specific Question: How can individuals be facilitated to celebrate ITELs and what is demonstrated through this process?</p> <p>a. Meditation – celebration, togetherness, oneness with generations who came before us. (3 mins)</p> <p>b. Warm Up – Write a nature related question you would like to ask the group, your neighbour will write the response, and pass it on to their neighbour who reads it for the group - (10 mins)</p> <p>c. Workshop Slides + discussion (20 mins)</p> <p>d. Sharing Circle (30 mins)</p> <p>e. Celtic knots (40 mins)</p>	<p>- Observations, Audio Recordings, Photos</p>	<p>- To celebrate participants’ own relationship with the natural world drawing from their own indigenous, faith, or cultural tradition (or any other traditions).</p> <p>- To reflect on participants’ reasons for choosing their items.</p>

	f. Closing, Takeaways (10 mins)		
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Scotland | *University of Glasgow*

Research Site: 2 of 3

Combined 3-part workshop series with UGT/PGT/PGR students.

Research Questions and Data Generation Activities			
Research Question	How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment and inform responses in the contemporary context of the environmental crisis?		
	Workshop Activities	Data Generated	Objectives
Revive - W1 3 hrs	Specific question: How can individuals be facilitated to revive ITELs and what is demonstrated through this process? a. Warm Up –What is your favourite thing about nature/What is your favourite experience in the natural	- Observations, Audio/Video Recordings, Photos - Artwork Created - Participant Reflections	- Engagement with ITELs from around the world. - Reflecting on our connections with the natural world, understanding our spiritual connection and oneness with all life forms, expressing it through artwork.

	<p>world? Write/draw, pass it on to your neighbour. (15 mins)</p> <p>b. Meditation – grounding, connection (2-3 mins)</p> <p>c. Workshop Slides + Discussion (40 mins)</p> <p>d. Break (10 mins)</p> <p>e. The Park Circle (Replaced with continuing discussions/reflections) (30 mins)</p> <p>f. Celtic Pattern Art (50 mins)</p> <p>g. Closing, Takeaways (5 mins)</p>		- Reflecting on deep human-nature relationships.
<p>Apply – W2</p> <p>2 hrs</p>	<p>Specific question: How can individuals be facilitated to apply and what is demonstrated through this process?</p> <p>a. Meditation – anxiety, resilience, hope (3 mins)</p>	<p>- Observations, Audio/Video Recordings, Photos</p> <p>- Ketso Charts</p>	- To resist materialist, consumerist, and extractive ways of looking at the environment and problem solve from ITEL focused holistic, ethical, perspectives that benefit all life forms.

	<p>b. Warm Up – Write a nature related question you would like to ask the group, your neighbour will write the response, and pass it on to their neighbour who reads it for the group - (15 mins)</p> <p>c. Workshop Slides + Discussion (30 mins)</p> <p>d. Ketso (1hr)</p> <p><i>Q. How can we develop a regenerative _____?</i></p> <p>h. Closing, Takeaways (5 mins)</p>		
<p>Celebrate – W3</p> <p>2 hrs</p>	<p>Specific Question: How can individuals be facilitated to celebrate ITELs and what is demonstrated through this process?</p> <p>a. Meditation – celebration, togetherness, oneness with generations who came before us. (3 mins)</p>	<p>- Observations, Audio/Video Recordings, Photos</p>	<p>- To celebrate participants’ own relationship with the natural world drawing from their own indigenous, faith, or cultural tradition (or any other traditions).</p> <p>- To reflect on participants’ reasons for choosing their items.</p>

	b. Embodied Expressions, Closing Questions (30 mins) c. Sharing Circle (40 mins) d. Postcards from the heart (20 mins) e. Closing, Takeaways (5 mins)		
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Malawi | *Sustainable Futures Global Network (SFGN) Symposium*

Research Site: 3 of 3

Condensed workshop with SFGN community members.

Research Questions and Data Generation Activities			
Research Question	How can environmental literacies be decolonised by individuals within a non-formal educational context - through reviving, applying, and celebrating indigenous and traditional environmental literacies - to reflect on deep ethical relationships with the natural environment and inform responses in the contemporary context of the environmental crisis?		
	Workshop Activities	Data Generated	Objectives
2 hrs	Revive a. Meditation – grounding, connection (3 mins)	- Observations, Audio Recording, Photos	- Engagement with ITELs, reflecting on human-nature relationships. - Problem solving from an ITEL perspective.

	<p>b. Warm Up – What is your favourite thing about nature/What is your favourite experience in the natural world? (10 mins)</p> <p>c. Workshop Slides – discussions, reflections (20 mins)</p> <p><i>Apply</i></p> <p>d. How can we make community symposiums more sustainable and regenerative? (15 mins)</p> <p><i>Revive/Celebrate</i></p> <p>e. Reflecting on your indigenous culture, traditions, and upbringing – please share something of significance that connects you to the natural world. (poem, story, art, family traditions etc.) (20 mins)</p> <p>f. Art activity – painting ‘what connects us in nature...’ (40 mins)</p> <p>g. Please share one thing you’re taking away from today (5 mins)</p>	<p>- Participant Reflections and Responses</p> <p>- Artwork Created</p>	<p>- To celebrate participants’ relationships with the natural world and express them through artwork.</p>
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Appendix F: Selection of Slides from the Slide Deck

The following slides present brief introductions to ITELs and art and symbolism reflecting the interconnectedness of humans and the wider natural world – the slides were shared with research participants at the beginning of the workshops as prompts for reflections and discussion.



Traditional and Indigenous Views – life, nature, art

- The common thread of spirituality. More than the body we inhabit.
- Awareness and acceptance of other realms of existence. Belief in (varying forms of) life after death.
- Nature is respected, worshipped, sacred, feared. However, strong connections to the natural world in daily life.
- These views similar ideas about – oneness of life, spiritual connectedness of life forms. Existence is both material and spiritual.
- Art – an overlap between ornament and utility. Art is often inspired by nature which is both beautiful and functional.



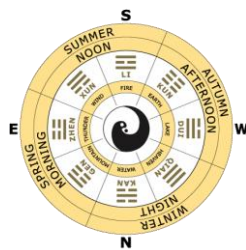
Traditional and Indigenous Views – life, nature, art

- Native American cultures - the word for plants in some Native American languages translates to *those who take care of us*.
- Indigenous African cultures - belief that nature is inhabited by spirits which led them to respect and care for the natural world.
- *Ubuntu* philosophy – humanity. I am because we are, community focused, can be expanded to include all life forms.
- Inuit (Greenland, Alaska, Canada) - environment and all its components are sacred, given by a creator.
- Abrahamic faiths (Christianity, Judaism, Islam) – recognition of all created beings belonging to God (one creator), humans appointed as stewards and caretakers of all life forms on Earth.
- Sami people (Northern Scandinavia), Aboriginals (Australian mainland/islands) believe that nature is animate and energized by spirit, all life forms are sacred and connected.

Traditional and Indigenous Views – life, nature, art

- The Hindu tradition does not see religion, ecology and ethics as distinct entities. Instead, it's part of *dharma* (duty, virtue, cosmic order) to treat creation with respect. Bhagavad Gita - references to the presence of the Supreme divinity, including throughout and within nature.
- Traditional African beliefs (the common denominator from 100s of tribes from the vast continent) see mountains, trees, rivers, and different animals as representations or embodiment of deities or spirits, and as such, they are divine, sacred, and are given due reverence.
- The Mayan view of nature as sacred – animism, the belief that objects, places and creatures all possess a distinct spiritual essence, or soul. Current references to agency in posthumanism.
- The Celts – the ancient tribes in Scotland were animists, nature was alive and worshipped or taken as sacred.

Indigenous and Traditional Art + Symbols – connections to life and nature



Chinese Trigrams – symbols of yin yang energy. To understand the organization of life, nature, universe.



Buddhist Dharmachakra Wheel – cyclical movement represents the cycles of all life.



Mayan Calendar – Central/Southern America. Solar calendar based on the cycles of the sun.

Indigenous and Traditional Art + Symbols – connections to life and nature



Mandalas – Buddhist/Hindu origins. Cycle of life, creation from a single source. Represents spirituality, enlightenment, rebirth, love, growth.



Butterfly Mask – Burkina Faso, signals the coming of rain. Ceremonial use for various stages of farming, sowing, harvesting, praying for rain and fertility of soils.



Endless Knot – Hinduism, Buddhism, Jainism. Entwining of wisdom + compassion, cycle of life.

Indigenous and Traditional Art + Symbols – connections to life and nature



Mosque Domes – symbolic of opening vaults to heaven. Unity in diversity, patterns can be replicated infinitely representing infinite types/species of creation. Islamic tradition saw art and nature as a means to experience God and spiritual oneness.

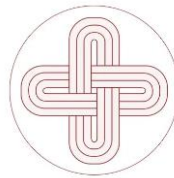
Celtic Art + Symbols – connections to life and nature



Earth, water, fire. Love, unity, eternal life.



Triquetra – earth, water, fire. Life, death, rebirth. Pagan to Christian – representing the trinity. Lunar and solar cycles.



Solomon's knot, union of man and divine. Eternity, no beginning and end.



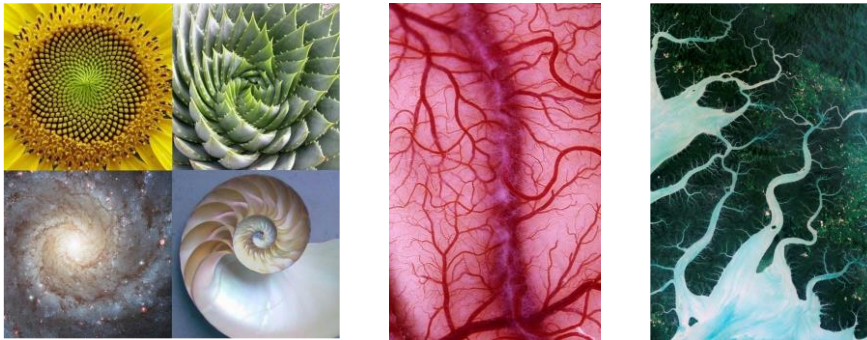
Forces of nature coming together in harmony and balance. Connection between heaven and earth, Tree of Life a symbol of this connection.

Sacred Geometry – geometry in the natural world

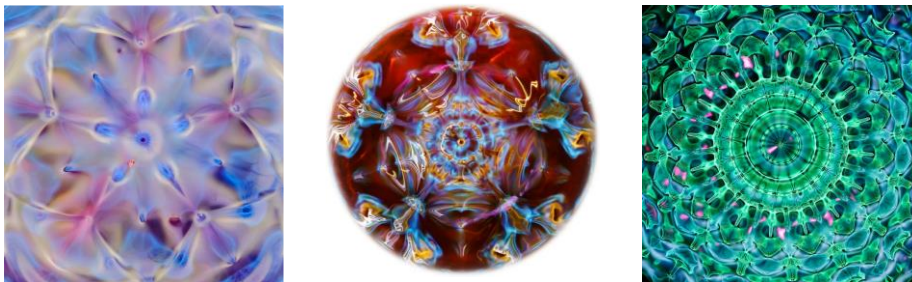
- The idea since ancient cultures that the universe has an underlying intelligent design.
- Common patterns and shapes repeated in nature and ourselves, amplifies our connections to nature, higher consciousness.
- Beauty + function, mathematical precision, harmony + proportion.
- We aren't just part of nature, we *are* nature.



Sacred Geometry – fractals, golden ratios



Sacred Geometry – geometry in the natural world



Images: Jacob, JourneyofCuriosity.net

- Cymatics – visible simulations of sound and vibration. Visualizing audio frequencies.

Appendix G: A Man in Assynt

Glaciers, grinding West, gouged out
these valleys, rasping the brown sandstone,
and left, on the hard rock below –
the ruffled foreland –
this frieze of mountains, filed
on the blue air –
Stac Polly,
Cul Beag, Cul Mor, Suilven,
Canisp –
a frieze and
a litany.

Who owns this landscape?
Has owning anything to do with love?
For it and I have a love-affair, so nearly human
we even have quarrels. –
When I intrude too confidently
it rebuffs me with a wind like a hand
or puts in my way
a quaking bog or loch
where no loch should be. Or I turn stonily
away, refusing to notice
the rouged rocks, the mascara
under a dripping ledge, even
the tossed, the stony limbs waiting.

I can't pretend
it gets sick for me in my absence,
though I get
sick for it. Yet I love it
with special gratitude, since
it sends me no letters, is never
jealous and, expecting nothing
from me, gets nothing but
cigarette packets and footprints.

Who owns this landscape? –
The millionaire who bought it or
the poacher staggering downhill in the early morning
with a deer on his back?

Who possesses this landscape? –
The man who bought it or
I who am possessed by it?

False questions, for
this landscape is
masterless
and intractable in any terms
that are human.
It is docile only to the weather
and its indefatigable lieutenants –
wind, water and frost.
The wind whets the high ridges
and stunts silver birches and alders.
Rain falling down meets
springs gushing up –
they gather and carry down to the Minch
tons of sour soil, making bald
the bony scalp of Cul Mor. And frost
thrusts his hand in cracks and, clenching his fist,
bursts open the sandstone plates,
the armour of Suilven;
he bleeds stories down chutes and screes,
smelling of gun powder.

By Norman MacCaig



from *The Poems of Norman MacCaig* (Polygon, 2005).

Appendix H: Ketso Responses (All Sites)

<div>Centrepiece</div> WCDT - Regenerative and Sustainable Community	
<div>Brown</div> (What is working)	<div>Grey</div> (Challenges)
<ul style="list-style-type: none"> - repairable brands - make + mend workshops - clothes swaps - repair cafes - second hand markets - discouraging fossil fuels - better cycle paths - encouragement to be healthy - world food awareness - local awareness of food poverty - increase in healthier food restaurants - community cafes - encouraging people to take food without shame - charity shops 	<ul style="list-style-type: none"> - political arguments - cost of public transport - capitalist commercial greed - food waste - supermarkets ruining food - poverty limits choices - people expect all food all the time - lack of time means we go for convenience - expectations of 'new' different - displays each year (public decor for holidays)
<div>Green</div> (Solutions)	<div>Yellow</div> (Ideas)
<ul style="list-style-type: none"> - a human wage - talk about sustainable footwear and barefoot benefits = increased demand - clothing library - government policies - have more conversations - using mirrors to reflect tea lights (for holiday décor) - more conscious sober events (entertainment) - share fascination/gratitude for nature in poetry 	<ul style="list-style-type: none"> - cultural respect for all - timeless clothes - regenerative systems - affordable healthy "lifestyle" for all - mutual life respect - free, accessible, public transport - community collection points for excess food - being self-assured (for timeless clothing)





<ul style="list-style-type: none"> - encourage outdoor shows/music/events that incorporate music (entertainment) - embed spiritual/symbolic nature ideas into song/music - making subway buggy friendly - one carriage to put your stuff in - helpers, lifts, bigger compartments on subway 	
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<div>Centrepiece</div> UofG - Regenerative and Sustainable Food Systems	
<div>Brown</div> (What is working)	<div>Grey</div> (Challenges)
<ul style="list-style-type: none"> - community food pantries - food bank donations - dumpster diving - allotments and gardens - foraging - 2 good 2 go (food app) - food sharing - growing fruits and veggies at home - avoiding heavily processed foods - auto producing - reduced prices on food going off - people have a desire for communal cooking + grocery - some public awareness of the extent of food waste - veg box schemes - pay as you feel cafes - hello fresh - community gardens - refill stations 	<ul style="list-style-type: none"> - where the money for all this will come from (funding) - allocating spaces for more farms and fields - supermarkets want to make profit from food - MENTALITY - school system is rigid - ingrained beliefs inherited from upbringing - CAPITALISM (neo-liberalism very anti-local authority) - people would have to be educated and unlearn their habits - lack of regenerative + sustainable education - lack of funding for local projects - how to reconcile these changes with state interests? - how do you maintain community relationships when you scale stuff up? - increasing demand + consumption - broken economy + inflation - carbon footprint from animal farms

	<ul style="list-style-type: none"> - profit being prioritised over people's needs - sensitive economic market very specific dietary requirements - issues with import/export of food - cities are a dirty place to grow food - capitalist driven economy doesn't allow time for community driven projects - areas with greater deprivation, people have less time to invest - a lot of stuff going on in the world
 (Solutions)	 (Ideas)
<ul style="list-style-type: none"> - free food from the state - destroy supermarkets because with a 3-day week we have time to shop (at smaller places) - ¾ day work week + TIME for reproductive labour - urban food growing - policies to encourage supermarkets to give away surplus food - riots - revolution - redistribution of funding for student grants - environmental education - technology to preserve fruits and veggies - build less giant needless offices - state support for sustainable projects - create a new food culture and mentality - end capitalism - compulsory gardening classes in school - making plant-based diets accessible - emphasise community involvement - less working hours = more time to cook 	<ul style="list-style-type: none"> - horizontal gardens - support union strikes - repurpose old offices for community projects - a dedicated subject in school on environmental issues - implementing education about food in schools - more volunteering against food waste - protest for government action - empowering local communities - 4-day week is already being initiated – implement this! - encourage changes in course syllabus - urban space for community activities, i.e. dining - put pressure on the government through campaigning (Greenpeace, friends of the earth) - campaign for more vegan options in schools + universities - volunteer and create food co-ops, food shares - eat insects

<ul style="list-style-type: none"> - humane animal farms with no negative environmental impact - emphasis on communal dining - large scale free communal eating - equal and fair distribution of food - large plots of allotments that are accessible - zero waste restaurants - growing more fruit trees across the cities - more policies and regulations on food waste - stop overconsumption - better global distribution of food waste - introduce open and educational conversation - tax the rich and use that to fund food - better public transport - reclaim car parks + roads - abolish private schools – more flexibility in state schools? - federalise UK + local participatory democracy - link farming to local practices - more efficient and greener farms - making plant-based options popular and accessible - degrowth + wellbeing economics - regulate the market/REVOLUTION - localised food community + making it accessible - better medical supplements - conversations and practices to come to conclusions that everyone needs - improve international relationships between countries - reduce corporate buildings (reduced need in different economy) + more space for nature - explore community involvement 	<ul style="list-style-type: none"> - bug farms - teach your kids how to grow - repurpose old offices for community projects - love and care for those around you, share work - get involved in your community + activism - DO stuff - participatory democracy - big free pantries with free food - keep these conversations alive - grow food, forage, eat it + SHARE - stop building on green field sites - increase free bus scheme to over 22 - make public transport financially accessible - keep hopeful and proactive - stop finance courses, making finance jobs pay well - vote for decent independent candidates - redistribute subsidies - support union strikes
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<ul style="list-style-type: none"> - make access to allotments more widely accessible - increased education on community food systems - introduce agricultural skills into education, mainstream - encourage individuals to deduce if food is out of date or not - scaling up all the local community stuff - 3D printed food for everyone - healthier and more balanced relationship with nature in producing food - change the approach for how environment is discussed e.g. spiritual aspects - political + economic change - more media representation of the problem + possible solutions - gradual transition, redirecting resources - reducing pollution, corporate buildings, density - invest in public transport + green energy - make food system more resilient - create sub-communities - use indigenous farming as a footprint 	
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 (What is working)	 (Challenges)
<ul style="list-style-type: none"> - access to second hand shopping - critical thinking culture - multicultural environment - free bike rentals - slavery acknowledgement - SAAS + free time = ability to do activism - Vegan food at the JMS - Communal living + sharing - the will and resistance to strike - autonomy of students to set up societies - free young person's bus pass for travel in Scotland - free university fees (Scotland) - campus allows to walk everywhere - food co-ops - circular economy promotes through unions, societies - pay the staff + cave to strike demands 	<ul style="list-style-type: none"> - prejudices and closed mindsets - difficulties for indigenous people to attend university - faculty positions held by out of touch staff - shame of vulnerability - capitalism - economic sustainability in the current world - physical distances from solutions - discrimination, race, gender, class - finding interdisciplinary teaching expertise - lack of knowledge + consciousness about resistance - lack of access to quality affordable housing - uni management - Scottish government, lack of power/unwillingness to act - divisions between students and social groups - cost of living crisis - student nihilism/unwillingness to face the crisis and act - stigmatisation of access to services - lack of student access to affordable food - lack of affordable housing
 (Solutions)	 (Ideas)

<ul style="list-style-type: none"> - open more possibilities to low-income students - open opportunities to ECR with sustainable and inclusive profiles - integrate sciences and humanities - decolonised curriculum in all subjects - food scheme: help grow food, give away to students - screen uni sponsors, reject inadequate ones - democratic socialism - eradicate billionaires: tax them - sustainable transportation - inclusive policies - more 100% scholarships for indigenous students - Gov redistribution of funding for student grants - Scottish Independence, a radical green coalition - direct action – be unignorable - creating opportunity for student management within certain spheres - Green New Deal concessions - course creation and promoting environmental ed. - employ indigenous communities for education - sustainable infrastructure - bigger SAAS grants, not loans - more curriculum/courses/modules on ecology - university divestment from the arms trade and fossil fuels - more food co-ops, cafes, communities on campus - trips to the Highlands + learn from people about the land - vegan + seasonal foods on campus 	<ul style="list-style-type: none"> - stop fossil fuel usage - increase holistic thinking in everything we do - EMPATHY - compromise - more diversity in study/staff body - get involved with any action that's helpful - get more and more educated about indigenous thinking - compromise - criminalise tax avoidance - stand up against student rent exploitation - have difficult conversations - lobby for change in Scot gov policy - affordable housing! - organic organised chaos - establish educational board of traditional/indigenous expertise - stand up for what you believe in/the conversations you've had - price cuts for organic sustainable food - be difficult and disruptive to those in power - Unity (sharing of feelings/ideas + solutions) - Acknowledging/studying history for future progress - Add people in the class to the solidarity strike WhatsApp - Tokenistic gestures to spark something bigger - Community gardening + ecology/subsistence teaching - price cuts for organic sustainable food - Uprising
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<ul style="list-style-type: none"> - pedestrianised West end/Glasgow - student communes, mass squatting - tackle gentrification of urban spaces (or rural) - introduce policies to tackle discrimination in student + staff bodies - integrating indigenous epistemology + local history in relevant subjects - rent strike - open space to increase communication between students and management - collaboration with businesses to encourage students to live sustainably - sacred grove approach to transport routes - no tuition fees - utopia housing, co-ops, communal living in a sustainable approach - free or affordable student food that uses locally sourced ingredients - affordable housing solutions provided for less privileged students - farming taught in schools with community garden accessibility 	<ul style="list-style-type: none"> - Restructuring systems - Systemic change - Bring emotions into politics - Applying indigenous knowledges to modern thinking - Organised chaos
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Writing and ideas that appeared unintelligible have been omitted. Capitalised words reflect participants' choice of capitalisation. Template from the Ketso website (Ketso.com).
[Ketso](#) | [Ketso](#)