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**Culturally-Oriented Environmental Identity Transitions:
Migrant Indian Teachers in Aotearoa New Zealand
Early Childhood Education**

A thesis
submitted in fulfilment
of the requirements for the degree
of
Doctor of Philosophy in Education
at
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by
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Abstract

An increasingly multicultural Aotearoa New Zealand early childhood education (ECE) landscape that includes a growing number of migrant teachers forms the context for my doctoral study. In this country, respect for the natural world and kaitiakitanga are integral to the ECE bicultural curriculum framework *Te Whāriki* (Ministry of Education [MoE], 2017) which is grounded in Indigenous Māori worldviews that acknowledge strong spiritual connections to land and place. The natural environment is considered an integral part of the national identity and early childhood has been recognised as an important stage when Environmental and Sustainability Education should begin.

Within the context of this superdiverse nation, a significant number of migrant teachers transfer their cultural and environmental knowledge, practice, and identity as they transition into the Aotearoa New Zealand context. This thesis explored migrant Indian teachers' understandings of their culturally-oriented and negotiated environmental identities. I was keen to examine if the environment might hold different meanings and places in their home (Indian) and host (Aotearoa New Zealand) cultural systems.

Through this study, insights were gained into migrant Indian teachers' perceptions of the influence of cultural identity on their environmental identities in Aotearoa New Zealand ECE. A sociocultural theoretical perspective informed this study, drawing primarily on Sauvé's (2009) model of personal and social development of the self in relation to other humans and the environment. Primary data for this interpretivist study were gathered through in-depth interviews with nine Indian ECE teacher participants. Interviews with their ECE setting managers/head teachers were conducted to support and supplement the teachers' practices and experiences. The audio-recorded interview data were transcribed and examined using thematic analysis. Observations of teacher participants' workplaces were used to provide a contextual profile for each of the nine Indian teachers. I also obtained a small number of assessment documents in the form of Learning Stories which the teachers had prepared, to analyse them for cultural and environmental themes and experiences.

Indian teacher participants' perceptions of their own culturally-oriented environmental identities highlighted the significance of teachers' own early childhood environmental

experiences and home cultural context influences on their environmental identities. Teacher participants' perceptions shed light on their cultural and environmental identity transitions and acculturation process. These teachers brought their cultural and environmental identities from their home cultural context and used their cultural lens to interpret the connections between the host cultural context and environmental worldviews.

The Indian teacher participants perceived close connections between their cultural and environmental identities. At the same time, they recognised cross-cultural connections between their culturally-oriented environmental identities and tikanga Māori (Māori ways of doing including practices, customs and rituals) and te ao Māori (the Māori world). These perceived connections were most evident through the significance of Indian philosophies of spirituality, relationships, belonging, and cultural recognition and exchange in their specific ECE contexts. These connections facilitated teachers' cultural and environmental identity transitions and had a positive impact on their cultural and environmental teaching practices when supported within the ECE setting and by management/leadership.

Cultural and environmental transitions for this steadily growing group of migrant teachers require further investigation to facilitate their cultural and environmental participation and acculturation into the Aotearoa New Zealand ECE context. In these ways, the existing cultural, environmental, and sustainability connections within ECE could be strengthened to foster children's culturally-oriented environmental identities.

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Dedication

To my son Hanut

who shows me the meaning of true and unconditional love.

To our shared sense of awe and wonder for our beautiful place of being.

Acknowledgement of Previous Publication

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This is to acknowledge that the above publication was produced during the course of this study and some material drawn from it can be found throughout this thesis. This material is primarily related to the literature review and rationale for the research.

Publications and Presentations from this Research Study

Publications

Rathore, D., Eames, C., & Kelly-Ware, J. (2020). Indian teachers and environmental identity in Aotearoa New Zealand early childhood education. *Teachers and Curriculum*, 20(2020), 13-21. <https://doi.org/10.15663/tandc.v20i1.350>

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Rathore, D. (2022). Overcoming data collection challenges and establishing trustworthiness: The need for flexibility and responsiveness in research. *Waikato Journal of Education* 27(2), 47-51. <https://doi.org/10.15663/wje.v27i2.932>

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Presentations

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Prologue

My 5-year-old son shouted excitedly to me across the living room in our house, “Look mumma, a moth!” I turned to look and saw a common house moth flying around with my son chasing it. I was not sure of his intention, so I waited till I saw him lunge at the moth, trying to swat it with his palms. As always, I instantly reacted, “Please don’t do that Hanut! Why do you want to hurt it or catch it?”

“Because!” he responded with his current favourite monosyllable.

As an environmentally inclined mother, I grabbed the opportunity to turn it into a teachable moment, explaining as I usually do, “It’s doing you no harm, so why do you want to hurt it?”

“But the moth’s not family!”

His response took me by complete surprise! I began a conversation with him to share my perspective of a shared planet or place of being. I tried to explain to him that although the moth wasn’t our biological or human family, it was a cohabitant of the planet just like all living beings - part of our larger interconnected earth family. This conversation lasted only a few minutes.

A few weeks later he came running to me, “Mumma, please can I have that glass quickly” he said pointing to an empty glass beyond reach. I attempted to ask him what he planned to do with it. He went over to the living room wall and began concentrating on positioning the glass over a moth on the wall. That is when I realised what he was doing. He placed the glass over the moth on the wall and lifted the glass off with the moth flying away. I suggested he place his hand on the glass mouth to prevent that from happening again. He tried again and succeeded. He asked me to open the door towards the front lawn so that he could let it out. He did so gently and turned towards me with immense pride and excitement, “See, I got it and let it out!” I responded with equal pride and excitement, and we celebrated this moment of natural connection between the human and more-than-human world.

It is in frequent wondrous and joyful everyday moments like this that I explore my own environmental identity and nurture my son's, hoping to encourage his connections and relationship with the natural world that we share so that we may all live and thrive in it together.

The sense of wonder that I have for the natural world, even as an adult, and one that I endeavour to encourage in my son, has culminated in my PhD study. My environmental identity as a human being, as a mother, and as a teacher, has led me to this journey.

1. Introduction

1.1. Chapter Overview

There has been a growing awareness of the detrimental impact of human activity on the environment in the Anthropocene (Crutzen, 2002; Eames & Cutter-Mackenzie, 2017). This impact requires a reconsideration of human-environment relationships including an examination of human attitudes and behaviours that can facilitate sustainable interactions between humans and the environment (Soga & Gaston, 2016). Given this context, the human-environment element of an individual's identity could be explored with regards to nurturing a relationship with the environment that is vital today (United Nations Environment Programme [UNEP], 2021).

To address this critical need of restoring the human-environment relationship through the exploration of an environmental identity, education has emerged as a vital strategy and culture has emerged as a significant resource. Environmental and Sustainability Education has gained significant traction over the past several decades with an increased recognition of early childhood education (ECE) as being a critical period for engagement. At the same time, culture has been highlighted as a key component in Environmental and Sustainability Education with the inclusion of diverse cultural knowledges and practices being acknowledged by policy makers, researchers, and practitioners. Given this context, my research explored migrant Indian teachers' understandings and perceptions of their culturally-oriented environmental identities within the Aotearoa New Zealand ECE context. This introductory chapter begins with the rationale for the study, my personal journey that led me to this study, and the significance of the study. Next, the research questions are introduced followed by an overview of the research design. The chapter concludes with an outline of the thesis structure.

1.2. Rationale for the Study

Education has long been viewed as a vital strategy in addressing the increasing global environmental concerns. Environmental Education was formally recognised as the vehicle for change for the first time through the *Tbilisi Declaration* by the (United Nations Educational, Scientific, and Cultural Organisation [UNESCO], 1978). This recognition has been strengthened over subsequent years and was evident most recently in the *Berlin Declaration*

on Education for Sustainable Development (UNESCO, 2022) where teachers and culture were identified as the two critical components of Environmental and Sustainability Education.

Within the context of Environmental and Sustainability Education, early childhood has been recognised as a critical stage when children can be encouraged to develop life-long dispositions of care for the environment (see for example, North American Association for Environmental Education [NAAEE], 2016; Wals & Benavot, 2017; Wilson, 2018). There is also growing evidence in the literature on the physical, cognitive and socio-emotional developmental benefits of Environmental and Sustainability Education in early childhood (see for example, Ardoin & Bowers, 2020; Chawla, 2015; Wilson, 2018).

These early years of life are seen to lay the foundation for an environmental identity, where environmental identity becomes central to human-environment relationships. An environmental identity has been described as the way individuals view themselves or develop a sense of self in relation to the natural environment (Thomashow, 1995), or one's beliefs about their association with the natural world mediated by personal history (Cantrill, 1998). This environmental identity influences environmental values, attitudes, and behaviour (de Groot & Steg, 2008; Gatersleben et al., 2014; Milfont & Schultz, 2016).

Just like all other identities, an environmental identity is determined by the sociocultural context. In order to gain an understanding of environmental identity, understanding and learning about the cultural beliefs and knowledge that shape that identity are called for (Esteban-Guitart & Moll, 2014). Therefore, it is pertinent to consider how environmental identities affect, and are affected by, sociocultural factors at various stages of development and education.

Within the ECE context, teachers are significant others in children's early years and part of their ecological systems (Bronfenbrenner, 1979). Teachers' environmental beliefs and inclinations influence their environmental attitudes and teaching within and outside the classroom (Wilson, 2018). Hence their environmental identities are likely to influence or shape children's environmental identities in turn, impacting children's environmental attitudes and behaviour (Davis, 1998; Kızılay & Önal, 2019; Pelo, 2009).

According to the *Environment Aotearoa 2022* report by the Ministry for the Environment Manatū Mō Te Taiao (MfE) and Stats NZ (MfE & Stats NZ, 2022), the natural environment holds a special place within Aotearoa New Zealand and is considered an integral part of the national identity or psyche. As a result, increasing environmental issues have given rise to environmental and sustainability initiatives within the government and non-governmental sectors (MfE & Stats NZ, 2022). Respect for the natural world and kaitiakitanga (commonly translated as environmental stewardship, discussed in detail in Section 2.5.) are also integral to the ECE bicultural curriculum *Te Whāriki, He whāriki mātauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum*, the overarching early learning framework developed for the Ministry of Education Te Tāhuhu o Te Mātauranga (Ministry of Education [MoE], 2017). The curriculum framework recognises the place of environment in its many guises in ECE through aspects such as spiritual development, exploration of the natural environment and physical spaces, and a sense of place (Rathore et al., 2020). Emphasis is given to children developing a sense of respect for the natural environment that derives from Māori worldviews through an ethic of care and a sense of kaitiakitanga (Ritchie et al., 2010). Within *Te Whāriki* (MoE, 2017), developing an identity in relationship to the natural environment is recognised as an important aspect of ECE. Given this context, environmental identity would seem to be a core component of early learning, for teachers and children alike. The curriculum framework recognises teachers as significant adults who are expected to create opportunities for the development of a sense of kaitiakitanga in children. They facilitate children's identity development in accordance with their cultural orientation, along with a sense of belonging and environmental identity in the Aotearoa New Zealand context (Rathore et al., 2020).

It has been argued that teachers are influential role models whose interests and inclinations towards the natural environment can inspire children's lifelong interest and commitment to the earth (Chawla & Cushing, 2007; D'Amore & Chawla, 2020). Therefore, a teacher's environmental identity (Pelo, 2009) becomes crucial to children's natural environmental experiences and environmental identity development, and the success of an ECE programme (Ritchie et al., 2010; Wilson, 2018). Consequently, teachers are required to be aware of their environmental beliefs, attitudes, and behaviours to facilitate positive environmental associations, interactions and identities in young children, as per their curriculum and professional obligations (MoE, 2017). The environmental identity of a migrant teacher from a

different cultural orientation teaching within the context of Aotearoa New Zealand ECE may make this process additionally complex.

A significant aspect of the Aotearoa New Zealand multicultural ECE context is the large number of migrant teachers. This workforce includes steadily increasing numbers of migrant Indian teachers as part of one of the fastest growing cultural groups (Stats NZ, 2018). These Indian teachers have emigrated from a diverse cultural context where the natural environment in India may have held a different place and meaning generally and in ECE specifically. Migrant Indian teachers may need to navigate the cultural and environmental transitions that enable them to implement a curriculum framework in Aotearoa New Zealand with various environmental provisions and associations (Toimata Foundation, 2023; MoE, 2017). These transitions could present challenges or opportunities for the teachers as they may need to reorient their environmental understandings and sense of place within the new context, in order to promote children's environmental identity. Thus, they may need to navigate co-existing identity ecosystems, from India and within Aotearoa New Zealand, where each context expects and necessitates diverse identities, especially with respect to the environment. They need to find a balance between the 'funds of identity' (Esteban-Guitart & Moll, 2014) they bring from their own home (Indian) culture and what they learn or practice in the host (Aotearoa New Zealand) cultural context. This process of finding a balance might in turn influence their environmental and sustainability teaching philosophies and practices that foster children's environmental identity development.

It is also important for migrant teachers to understand how they view the links between education and the environment through a cultural lens, and then translate that into their teaching practices (Sauvé, 2009). From a sociocultural perspective, a teacher's identity and learning are influenced by their interaction and participation within a given sociocultural context. For a migrant Indian teacher in Aotearoa New Zealand ECE, this may mean exploring new environmental ideas and practices alongside their existing cultural beliefs, then potentially integrating a new environmental identity into an existing one. Therefore, migrant Indian teachers' cultural and environmental identity transitions between their Indian cultural context and the Aotearoa New Zealand ECE context deserve consideration and examination.

1.3. Background to the Study

Several studies have explored migrant teacher identity, culture, and environment in ECE and schools within the Australasian context. Studies have explored aspects such as pre-service migrant teachers' practicum experiences in Australian ECE settings (see for example, Nuttall & Ortlipp, 2012; Spooner-Lane et al., 2009), and contextual experiences of overseas-educated teachers (Datta Roy, 2016). Other studies (for example Almeida et al., 2018) have reported on the role of teacher identities in enacting Environmental Education policies in Australian ECE and school settings. In Aotearoa New Zealand, some ECE research has been focused on immigrant parents and families investigating parent-teacher relationships among Asian immigrants (Guo, 2005) or Chinese immigrant parents' perspectives and experiences of ECE (Guo, 2012; Wu, 2009). Studies with teachers have explored aspects such as Asian teachers' ECE practicum experiences (Murray, 2015) and teachers' experiences of including Asian children in ECE (Youn, 2016). A few studies were found that investigated teachers' perceptions of Environmental Education in ECE (Prince, 2000) and the creation of a community of learners to integrate Environmental Education into the ECE curriculum (Prince, 2006). In the recent past, numerous ECE studies have focused on the connections between Indigenous (Māori) perspectives, identity, and Environmental Education (see for example Alcock & Ritchie, 2018; Ritchie et al., 2010; Ritchie & Veisson, 2018); links between culture and Environmental and Sustainability Education (see for example Duhn & Ritchie, 2014; Eames & Cutter-Mackenzie, 2017; Vincent-Snow, 2017); teachers and Environmental and Sustainability Education (Ritchie, 2013b; Ritchie, 2017); and migrant teachers, belonging, and identity in ECE (Arndt, 2018; Chan & Ritchie, 2020).

An increasing number of studies have highlighted Indigenous (Māori) perspectives, culture, identity, migrant teachers' experiences, Environmental and Sustainability Education, and their connections within Aotearoa New Zealand ECE. However, none of the studies that explored the subject of teachers and Environmental and Sustainability Education in ECE focused specifically on migrant teachers. Additionally, studies with Asian participants have generally grouped participants from several Asian countries into a single category. Ho (2015) challenges the commonly accepted perception of 'Asian' as a single category, arguing that this sole categorisation diminishes the characteristic nuances of different and diverse Asian cultures. Each culture has its unique beliefs and worldviews that need to be explored distinctly. These understandings are important if we are to gain an authentic and accurate

understanding of the influence of teachers' cultural identities on their practice of Environmental and Sustainability Education.

As a researcher, when exploring the concept of Indian identity, I consciously avoided overly broad generalisations, recognising the immense diversity within the Indian culture, encompassing various subcultures, religions, and sociocultural affiliations, along with distinct socioeconomic strata. This diversity plays a significant role in the perceptions of environmental issues and practice of environmental education across the nation, setting it apart from the environmental perspectives taken by other nations (Almeida & Cutter-Mackenzie, 2011). Moreover, it is important to note the complexity of unpacking an Indian identity considering the very same diversity. An Indian identity is a complex amalgamation of numerous sub-identities and subcultures that make defining an Indian identity problematic. However, the use of the term Indian identity in this research is not an oversimplification or overgeneralisation but a challenging yet necessary grouping to represent this group of teachers who belong to the same country and have a broad but shared national identity. They are representative of Indian migrant teachers with shared experiences by virtue of coming from the same home cultural context and settling into the common host cultural context of Aotearoa New Zealand, as also evident in earlier research on migrant Indian teachers in this country (Kaur, 2017; Rana, 2020). Thus, in this research, the focus was on examining Indian identity in its broadest sense, considering it as a comprehensive cultural identity rather than delving into the individual subcultures of the teacher participants.

In preparation for this research, no published studies were found that focused on the connections between teachers' cultural and environmental identities within Environmental and Sustainability Education specifically within ECE. Studies were found that focused on one or some of these aspects. For instance, Almeida (2015) studied the relationship between teacher educators' professional, cultural and eco identities within the Indian context. Other studies have explored ECE teachers' experiences of nature-based curriculum as influenced by childhood experiences and sociocultural backgrounds (Kelly et al., 2013), or the incorporation of kaitiakitanga into an ECE teacher education programme (Ritchie et al., 2010). However, teacher environmental identity does not appear to have been the primary focus of any ECE study to date. Moreover, environmental identity and the related sociocultural transition for migrant teachers seems to be an area that has not yet been explored. This gap in the research

is significant considering that the natural environment is an integral feature of the Aotearoa New Zealand cultural identity and an important part of ECE curriculum and practice.

Moreover, research studies that involved migrant Indian teachers appear to be very rare, and none were found within the context of Environmental and Sustainability Education in Aotearoa New Zealand ECE. With increasing incentives for qualified ECE teachers available from Immigration New Zealand (2023) and ECE tertiary providers, Indian teachers have become one of the largest cohorts of ECE teachers within the country. Yet despite the steadily growing sub-group of migrant Indian teachers, few studies were found that focused specifically on migrant Indian teachers in Aotearoa New Zealand. Studies with migrant Indian teachers have primarily researched their sociocultural transitions and experiences as teachers in ECE (see for example, Kaur, 2017; Rana, 2020). To date, environmental identity and the related cultural transitions of migrant Indian teachers have not been the focus of research. The teachers may have already settled or be intending to settle here permanently, or they may be temporary residents in the country but for the purpose of the thesis they are all referred to as migrant Indian teachers.

If kaitiakitanga and Environmental and Sustainability Education are considered priorities within the context of the current environmental crisis, then culture needs to be a critical consideration in this process. Learning more about teachers' culturally-oriented environmental identity developments and/or transitions within the multicultural context of Aotearoa New Zealand ECE is important.

Thus, my doctoral study explored migrant Indian teachers' culturally-oriented environmental identity development as they negotiate their cultural and environmental transitions to the multicultural and environmentally-inclusive Aotearoa New Zealand ECE context.

1.4. My Personal Journey to the Study

My interest in the research topic of teachers' environmental and cultural identity stems from my academic, professional, and personal background and experiences (as also discussed in Section 3.2.). Prior to my enrolment for a doctorate at The University of Waikato, I was teaching at a university in western India. My interest to pursue further studies in Environmental and Sustainability Education originated when I was undertaking a Bachelor of Education programme in 2014-2015 back in India. Our cohort was recruited as participants

for a Master of Education research study on pre-service teachers' awareness about environment and sustainability. The research results generated from our batch of student teachers showed significantly poor understanding and awareness of environmental facts, concepts, and issues. Of a total of 100 students, the majority of whom were from a science background, I was the only group member (Humanities and Human Development background) who scored well. I wondered why that was. My search for an answer led me to reflect upon possible reasons. I realised that I had grown up with a strong sense of connectedness with the natural environment and hence appreciated, respected, and valued the environment. Since I began this research study, I have come to know this as my environmental identity. I paid attention to the environment, felt an affinity with it and loved it due to my personal familial experiences. Unlike most of my colleagues, I had always had the luxury of natural outdoor spaces at home and the good fortune of an environmentally-inclined family, which I do not believe is the norm for every Indian urban household/family or the modern Indian culture in general for a variety of reasons. Nonetheless, I was concerned by the results of my cohort and the apparent environmental apathy in a group of prospective teachers. I began to consider that if the need in the Anthropocene is environmentally aware and conscious humans, how could teachers with a weak/insignificant environmental identity be expected to foster a strong environmental identity in children?

Becoming a mother amplified my concerns about the future of the planet and nurturing my son's environmental identity. I want him to grow up with a strong environmental identity, just like me. However, this seemed like a difficult proposition considering the general ECE options in Indian cities and the lack of environmental components in teacher education programmes, as was evident among my cohort of student teachers described above.

When searching for a potential ECE setting for my son, I realised there were none available that would afford him the opportunities I desired for him. As in most urban towns and cities in India, the ECE settings were concrete, often multi-storeyed constructions with minimal or no green spaces. The curricula in government or private ECE settings had minimal or no provision for exposure to the natural environment or learning in, about, for, or with the natural environment. From my academic background and personal experience of the ECE programmes and curricula, I knew that teachers were not prepared or skilled in this area. They did not have any opportunities to develop their environmental identities. Upon reflection, I

realised that to encourage an environmental identity in Indian early childhood teachers, I needed to know when and how this process could be facilitated, provided the teachers had access to environmentally rich curricula and practices.

These questions made me think back to my earlier academic and professional experiences in a different context. While studying for my ECE Postgraduate Diploma in Aotearoa New Zealand in 2013, I was working simultaneously as a relief teacher at various ECE settings. My educational and relief teaching experiences had exposed me to the environmentally-rich culture and identity of the country, and the inclusion of the environment and concepts of sustainability in ECE. I had learnt about how *Te Whāriki*, the bicultural ECE curriculum framework was underpinned by Indigenous Māori worldviews of respect for and affinity with the natural environment (MoE, 1996).

Additionally, I had personally witnessed the growing number of Indian teachers in the Aotearoa New Zealand ECE context. In fact, about 50% of the student teachers in my postgraduate ECE programme were Indian. Coming from a cultural context that may not prioritise Environmental and Sustainability Education, the Indian teachers were now practicing in a cultural and educational context that valued and encouraged awareness of, and constant interaction with, the natural environment. This expectation would require them to become aware of, and work upon, their own environmental identities. Thus, I believed it would be interesting to see how Indian teachers perceived their identity and how it might have influenced their practice in Aotearoa New Zealand ECE to foster a strong environmental identity among the future generations.

My resolve to pursue this line of inquiry was further strengthened when I relocated to Aotearoa New Zealand to undertake doctoral studies. Working as a relief teacher in ECE and having my child attend an ECE setting, I often found myself exploring my environmental identity as an Indian teacher in a different cultural context. My own environmental identity was undergoing transitions, and this experience was rife with strengths and challenges. I wondered whether other migrant Indian teachers had similar or different experiences to mine, and what kinds of transitions their cultural and environmental identities might have undergone. I viewed these issues as critical considering they would play a significant part in nurturing children's cultural and environmental identities.

1.5. Significance of the Study

Since the seminal review of literature by Davis (2009) identified early childhood Environmental and Sustainability Education as a ‘research hole’, there has been an increase in studies in this field (for example, Ardoin & Bowers, 2020; Green, 2015; Somerville & Williams, 2015). In Aotearoa New Zealand ECE, studies have explored the connections between culture, Indigenous (Māori) perspectives, identity, and Environmental Education. However, in a highly multicultural context that gives due importance to the environment in ECE, the environmental identities of migrant Indian teachers remain unexplored so far. The literature discussed above illustrates the need to examine connections in ECE between the role of the environment, teachers’ environmental identity and the role of culture. This thesis asserts that migrant Indian ECE teachers’ environmental ideas, beliefs, and practices in their current contexts may be influenced by their cultural orientations. This study looks to add value to the field of early childhood Environmental and Sustainability Education through multiple insights into these teachers’ understandings of their culturally-embedded and mediated environmental identities as they transition into an environmentally-rich ECE context. It also provides insights into the cultural experiences that influence this transition and how Indian teachers navigate these cultural transitions.

Given that there has been an influx of Indian ECE students and teachers employed under the skill shortage category (Immigration New Zealand, 2023), insights into their cultural and environmental identity transitions could be used to facilitate the transitions of other migrant teachers into the Aotearoa New Zealand ECE context. Additionally, an understanding of the environmental philosophies and teaching practices of a culturally-diverse group of teachers could be used to better include migrant teachers’ cultural and environmental identities within their ECE settings. These findings could better equip ECE managers/head teachers to support migrant teachers’ environmental identity transitions, and in turn facilitate children’s environmental identity development.

An awareness of how migrant Indian teachers transition from one sociocultural context to another with reference to their environmental identity could also provide valuable information for Initial Teacher Education (ITE) providers to incorporate into their programmes. This research could yield data that specifically demonstrate migrant Indian teachers’ culturally-oriented perceptions and interpretations of the environmental and sustainability features of the

ECE curriculum framework *Te Whāriki*. The findings would provide a glimpse into the context they come from, and how their cultural crossovers influence their teaching ideas and practices, highlighting the kinds of support systems required for these teachers during their cultural and environmental transitions.

1.6. Research Questions

These considerations led to this study which was guided by the overarching research question: What are migrant Indian teachers' perceptions of the influence of cultural identity on their environmental identities in Aotearoa New Zealand ECE?

The specific questions used to guide the study were:

1. What are migrant Indian teachers' perceptions of the role of environmental identity in the Aotearoa New Zealand ECE context?
2. What are migrant Indian teachers' perceptions of the influence of their own cultural identities on their environmental identities as they practice in Aotearoa New Zealand ECE?
3. How do migrant Indian teachers perceive their cultural and environmental identities influence their practice in the Aotearoa New Zealand ECE context?

1.7. Research Design

A sociocultural theoretical perspective informed this study, drawing primarily on Sauv  s (2009) model of personal and social development of the self in relation to other humans and the environment. This model is supported by sociocultural theorising from the works of Bronfenbrenner (1979). The study also draws upon ideas such as 'environmental literacy' (Orr, 1992), 'significant life experiences' (Chawla, 2015; Palmer, 1993; Tanner, 1980), 'sense of place' (Pelo, 2014a; Penetito, 2009), and 'funds of identity' (Esteban-Guitart & Moll, 2014) to interpret Indian teachers' understandings and experiences.

The purpose of the study was to understand migrant Indian teachers' interpretations of their experiences and thus an interpretivist approach was employed. Research methods were used to gather predominantly qualitative data to explore teacher participants' meaning-making of their socially-constructed realities. Data were gathered from multiple sources using various tools. I conducted in-depth interviews with migrant Indian teacher participants and interviewed the managers/head teachers in their ECE settings to supplement the teacher

interview data. Thematic analysis (Clarke & Braun, 2017) was used to analyse the data. Contextual observations focused on each ECE setting's environmental practices, resources, and spaces were conducted and used to provide contextual background for each teacher participant. I analysed assessment documentation generally in the form of Learning Stories (Carr, 2001; Carr & Lee, 2012; Carr & Lee, 2019) prepared by the Indian teacher participants to identify environmental themes and experiences.

1.8. Scope

This study was undertaken within Aotearoa New Zealand where the Ministry of Education is responsible for licensing, regulating, and partially funding early childhood services. The Ministry of Education classifies early learning services into two main types: teacher-led services and whānau-led (family-led) or parent-led services. All services other than playgroups are licensed or certified by the Ministry of Education. These services range from not-for-profit, to community and private (for-profit) services (as discussed in detail in Section 2.3). However, there has been a significant shift in the compositions of the sector over recent decades. The ECE sector is now dominated by large national and international corporations and businesses owning a majority of early learning services in the country (Duff, 2023; Education Counts, 2022a). National and international for-profit services have been steadily increasing in the past couple of decades. Additionally, the expectation of qualified staff within any ECE setting being reduced from 80% to 50% has resulted in decreased professionalism (Ritchie, 2018). This change in composition of settings and staff in ECE allows private services to maximise their enrolment, charge high fees, thus prioritising profit over quality within these early learning services.

Despite the diverse ECE service types in the country, *Te Whāriki, He whāriki mātauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum* is the overarching bicultural curriculum framework for ECE, originally published by the Ministry of Education in 1996 and revised in 2017 (MoE, 2017). The development of the framework was led by Dr Helen May, Professor Margaret Carr, Dr Tamati Muturangi Reedy and Tilly Te Koingo Reedy (Te Kōhanga Reo National Trust) in widespread consultation with stakeholders such as the ECE community, kōhanga reo whānau (members of kōhanga reo community), kaumātua (elders) and leading Māori educationalists (Carr, 1993; Carr & May, 1993; MoE, 2017; Te One, 2003). The curriculum framework is designed as a guide for early learning services to adapt and

implement as it best suits their context (MoE, 2017). The glossary in *Te Whāriki* (MoE, 2017, pp. 66-67) has been used to define te reo Māori (the Māori language) terms within this thesis unless otherwise specified in literature sources.

The participants for my study were Indian-born teachers who had migrated to Aotearoa New Zealand and gained their ECE qualifications from tertiary providers in this country. They were working in teacher-led services including kindergartens and education and care services (further discussed in Section 3.4.2). The managers/head teachers in their ECE settings were also interviewed for the study.

This study focused on the connections between migrant Indian teachers' cultural and environmental identities within the Environmental and Sustainability Education context. Globally, Environmental and Sustainability Education has undergone many transitions since its inception in terms of nomenclature, definition, focus, scope, pedagogy, practice, and research approaches. Beginning with the *Tbilisi Declaration* (1978), Environmental Education (EE) was centred upon attitudinal and behavioural change in people and societies. This international agreement was followed by a period with a focus on nature study with the aim of increasing awareness of environmental problems. The next phase focussed on practical outdoor experiences to shape environmental attitudes, especially in the early years. Subsequent years were characterised by increased educational inputs for environmental and wildlife conservation. Thereafter, a newer perspective Education for Sustainable Development (ESD) became widely acceptable; one that included the environmental and social and economic aspects of development for the distribution of resources and sustenance of human life. Thus, the nomenclature and definitions of this field have undergone numerous changes since its formal recognition in the late 1970s. Some of these variations include Education for Sustainability (EfS), Sustainability Education (SE), Education for Sustainable Development (EfSD/ESD), Environmental Education for Sustainability (EEfS). Primarily, the focus has moved from nature-human connections to human-environment-socio-economic connections. This change is also reflected in the field of ECE where several terms have been used including Environmental Education (EE), Early Childhood Education for Sustainability (ECEfS), Early Childhood Environmental Education (ECEEE), and Education for Sustainable Development (ESD) among others. While acknowledging the varied terminology, nomenclature, and approaches, the umbrella term 'Environmental and Sustainability

Education’ is used for the purpose of this thesis unless otherwise specified in relation to literature sources.

1.9. Thesis structure

The thesis is organised into five further chapters. The synopsis of each is presented here.

Chapter 2 reviews literature on identity and culture with reference to Environmental and Sustainability Education. It begins with a look at Environmental and Sustainability Education globally and within Aotearoa New Zealand with a focus on the ECE context. This section is followed by a review of literature on environmental identity specifically with reference to Environmental and Sustainability Education in ECE, teacher identity, and sociocultural contexts. The next section presents literature on migrant teachers in Aotearoa New Zealand ECE, particularly Indian teachers. The chapter concludes with a discussion of the theoretical framework underpinning this study.

Chapter 3 presents the methodology used in the study. The paradigmatic considerations, researcher positioning, research design, data collection and analysis procedures, and theoretical framework are detailed. A discussion on the trustworthiness and ethical considerations related to the study follows.

Chapter 4 is the first of two chapters detailing the findings of the study. This chapter focuses on the teacher participants’ perspectives on their home cultural context, their early childhood experiences with reference to the natural environment, and cultural influences on their environmental identities.

Chapter 5 is the second findings chapter that presents teacher participants’ perspectives and experiences as ECE teachers in Aotearoa New Zealand. This section includes their perspectives on the Aotearoa New Zealand environmental culture and identity, their perspectives on ECE, the contextual background of their individual ECE setting, and their experiences of cultural and environmental identity development and/or transitions as migrant teachers where applicable.

Chapter 6 is the final chapter of the thesis where a discussion of the findings of the study is presented with reference to the research questions. Conclusions are drawn, implications are raised, and recommendations are made.

2. Literature Review

2.1. Chapter outline

The chapter begins with an introduction to the field of Environmental and Sustainability Education and related research in the global and Aotearoa New Zealand context. I then introduce the early childhood education (ECE) context and curriculum framework for Aotearoa New Zealand. This background leads into an overview of literature on Environmental and Sustainability Education in ECE internationally with a focus on the local context. I discuss the Aotearoa New Zealand context with respect to the environmental and sustainability implications within the curriculum, the role of teachers in the process, and the place of culture in both. The next section presents a review of definitions, conceptualisations, and significance of environmental identity. Following this, I explore the connections between environmental identity, Environmental and Sustainability Education, and ECE. Literature related to teachers and their environmental identity is reviewed next, along with a detailed exploration of the connections between environmental identity and culture. The subsequent section describes the increasingly multicultural Aotearoa New Zealand landscape, with a focus on the sociocultural context of migrant Indian teachers, the participants of my study. The chapter concludes with a summary of the literature review and an introduction to the theoretical framework developed and used for this study.

2.2. Environmental and Sustainability Education

All education is Environmental Education (Orr, 1992; Penetito, 2009). It is only the extent to which the environment is included in, or excluded from, the nature of education in question, do children think of themselves as part of or separate from the natural world. Thus, the nature of education and the presence or absence of the environment within it can either facilitate a sense of stewardship or contrastingly a sense of apathy towards the natural world.

2.2.1. Environmental and Sustainability Education: Global context

Environmental issues and Sustainability Education have become critical components in education in the Anthropocene, the geological epoch marked primarily by the beginning of the Industrial Revolution (Crutzen, 2002) and characterised by the domination of human activities and their detrimental impact on the Earth's ecosystems (Crutzen, 2002; Steffen, 2021; Steffen et al., 2011). There is growing awareness among governmental and non-

governmental organisations, researchers, academics, and the general public of the deteriorating state of the environment (Eames & Cutter-Mackenzie, 2017; Hunter et al., 2018; The Royal Society of New Zealand, 2016). As the perpetrators of these environmental transgressions, it is our responsibility as humans to reverse and halt our precipitation of the current socioecological crisis. The challenge then for humanity is to restore the human-environment balance through collective wisdom and action for a sustained and liveable biosphere (Folke et al., 2021).

This challenge has been increasingly recognised and addressed globally over the last 50 years with varying foci on and around Environmental and Sustainability Education. During this period, the United Nations has led the global environmental and sustainability movement through numerous agreements and declarations. The *Tbilisi Declaration* (UNESCO, 1978) was the first of its kind to recognise the role of education in addressing environmental concerns. It was a result of the first intergovernmental conference on Environmental Education organised by UNESCO and the United Nations Environment Programme (UNEP) in Tbilisi, Georgia. The goals of Environmental Education were defined as enhanced environmental awareness, knowledge, attitudes, and skills through active participation, in order to bring about the desired change in behaviour patterns towards the environment and to ensure commitment towards, and participation in, environmental improvement. The declaration provided a framework including Environmental Education principles and guidelines across all levels through formal and nonformal education systems, along with the content, methods, and material to be used for this purpose.

This focus on environment deterioration then morphed into sustainable development ideas that reinforced the social and economic connections of humans to the natural environment. Over 35 years ago, the Brundtland Commission report titled *Our Common Future* (United Nations, 1987) was one of the initial international documents to articulate the challenges and concerns of environment and sustainability. It defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p. 54). The report stressed the need for widespread educational campaigns to bring about desired changes in environmental and sustainability attitudes, social values, and aspirations with educational institutions positioned as critical partners in the process. Contextually relevant Environmental Education was to be integrated

into all disciplines at all levels of formal curricula. The significant role of teachers in the process was recognised, with their attitudes as key in understanding the links between environment and development. The Brundtland Commission report called for increased focus on environmental and sustainability awareness and capabilities within teacher training. There was a recognition of the interdependence of environmental, economic, social, and cultural sustainability. It was an urgent call to action towards an increased balance between economic development and resource management through policy changes, in both developed and developing nations.

Following the Brundtland Commission report, an area that was gaining attention was that of children's and youth agency in the Environmental and Sustainability Education agenda. At the same time, cultural diversity and Indigenous knowledge began to feature as critical components in related educational programmes. For instance, the *Rio Declaration on Environment and Development* was adopted as a result of the United Nations Conference on Environment and Development (UNCED) or the Earth Summit (United Nations, 1992b) in Rio de Janeiro. The *Rio Declaration* aimed at establishing global partnerships among nations, key sectors of societies and people to create a balance between development, sustainability, and environmental protection (United Nations, 1993). Specifically, *Agenda 21* (United Nations, 1992a) adopted at the Earth Summit recognised children as being most vulnerable to the impacts of environmental degradation, and hence it was acknowledged that they be considered significant stakeholders in environmental and sustainability programmes globally and locally. *Agenda 21* called for increased Environmental and Sustainability Education opportunities for children through the integration of Environmental Education in school curricula. The document also highlighted the need for increased participation of Indigenous People and their communities in environmental and sustainability movements due to their historical relationships to lands and traditional knowledge of the interconnectedness between humans, the natural environment, and sustainable development (United Nations, 1992a).

The focus of policies and programmes in the international environmental and sustainability agenda turned towards human-nature relationship and environmental nurturance once again. The *Millennium Declaration* adopted at the UN Millennium Summit 2000 in New York included a statement of international agenda of values, principles, and objectives for the twenty-first century (United Nations, 2000). 'Respect for Nature' to achieve sustainable

development was one of the fundamental values set out in the document. The declaration also set out the eight Millennium Development Goals, including Goal 7 – Ensure Environmental Sustainability. A road map was developed for the effective implementation of the Goals through enhanced commitment and increased mobilisation of resources from all nations (United Nations, 2001). The plan reiterated the need for environmental stewardship to mitigate environmental degradation. The idea of, and need for, sustainable development remained a focus alongside the Goals and was highlighted during the United Nations World Summit on Sustainable Development in Johannesburg, South Africa in 2002. The resolution adopted at that summit reaffirmed the interdependence of economic development, social development, and environmental protection for sustainable development, as first mentioned in the *Rio Declaration*.

Education as a tool for Environmental and Sustainability Education was brought back into focus when it was again recognised as the foremost medium to achieve environmental preservation and global sustainability. The field was again extended to include environmental concerns along with developmental sustainability. There was a call for educational interventions at all levels, including teacher education and cultural inclusion, spearheaded by the UN General Assembly's declaration of 2005–2014 as the Decade of Education for Sustainable Development (DESD), with UNESCO responsible for its promotion (UNESCO, 2005). Education for Sustainability rather than Environmental Education became recognised as a holistic and diverse approach and seen as a priority rather than an option (UNESCO, 2006). The Declaration of the Decade called for the integration of the 'principles, values, and practices of sustainable development into all aspects of education and learning' (UNESCO, 2023). The goal was to harness education to bring about a change in people's attitude and behaviour with respect to environment and sustainability through the development, promotion and reorientation of educational policies and programmes. Importantly, the Declaration highlighted the need to reorient educational programmes including ECE to focus on the development of sustainability-focussed knowledge, skills, values, and perspectives. The significant place of culture and Indigenous knowledge was also recognised as a dimension of Sustainability Education. An education programme for teachers, textbook writers, and decision makers offered 25 modules on environmental and sustainability topics and notably, this included modules focussed on cultural and Indigenous knowledge in Education for Sustainability. Thus, there was a call to plan and implement Sustainability Education

programmes based on the diverse cultural contexts of the people concerned, in which lay valuable Indigenous knowledge.

Education for Sustainable Development continued to be the focus of the global agenda through the next period. In 2015, at the end of the Decade of Education for Sustainable Development, the UN Member States adopted the *2030 Agenda for Sustainable Development* (UNESCO, 2015). Seventeen Sustainable Development Goals (SDGs) formed the core of this agenda and addressed the ‘areas of critical importance for humanity and the planet’ including people, planet, prosperity, peace, and partnership. Several of these Goals addressed the vital synthesis of the natural environment and education for a sustainable present and future. Specifically, Goal 4 Quality Education, highlighted the need to promote Education for Sustainable Development through knowledge and skills. It called for mainstreaming of Education for Sustainability in school curricula and teacher education (United Nations, 2023). The Goal specifically recognised the need for appreciation of cultural diversity and the contribution of culture to sustainable development. Culture and teacher education were yet again considered significant factors in the planning and implementation of effective and relevant Environmental and Sustainability Education programmes.

Over the next few years, the SDGs and related educational initiatives remained the focus of international commitments with teachers gaining recognition as key partners in the process. In 2019, UNESCO approved the *Education for Sustainable Development: Towards Achieving the SDGs (ESD for 2030)*, as the global framework for implementation of ESD beyond 2019, from 2020-2030 (UNESCO, 2019b). This framework highlighted and emphasised the contribution of education to sustainable development, while reviewing and reorienting education and learning to achieve the SDGs. The objective was also to integrate ESD and the SDGs at all levels of education, action, and policy. In the process, UNESCO developed *Education for Sustainability: A Roadmap* (UNESCO, 2020) to identify specific areas of work and intervention to achieve ESD for 2030. This roadmap reidentified educators as the key actors and motivators in Environmental and Sustainability Education. It recognised the importance of educators to be empowered and equipped with the requisite knowledge, skills, values, or behaviours. It called for systematic capacity building, in-service training, and assessment of teachers in pre-primary, school, and tertiary education as a priority action area.

Most recently, teachers and culture are taking critical positions within Environmental and Sustainability Education. This critical positioning was evident in the *Berlin Declaration on Education for Sustainable Development* (UNESCO, 2022) adopted at the 2021 UNESCO World Conference on Education for Sustainable Development. Again, this declaration called for urgent global action in the form of Education for Sustainable Development (ESD) that promoted the development of skills and competencies and empowered learners to make informed decisions and take responsibility for their own actions. It highlighted connections with nature and respect for the environment as critical to ESD while reiterating the need for ESD to be made an integral component of curricula at all levels of education, including early childhood. The crucial role of teachers in promoting Environmental and Sustainability Education through capacity building at all levels was restated. A notable addition to the ESD agenda was the explicit acknowledgement of the importance of culturally-specific learning experiences and Indigenous knowledge in the process. This was a clear acknowledgement of the importance of intercultural understanding, cultural diversity, and culturally-specific programmes in Environmental and Sustainability Education. The cultural basis of Environmental and Sustainability Education was emphasised to ensure that there is an authentic and practical connect between the targeted knowledge, skills, attitudes, and real life, allowing “learners to learn what they live and live what they learn” (UNESCO, 2022, p. 4).

Overall, over the past three decades international organisations, commissions, and documents at the highest levels of global policy and governance have established that education has been and remains the most critical tool for environmental regeneration and sustainable development. The role of culture has also been recognised and promoted. It began with the *Tbilisi Declaration* focussed on the goal of Environmental Education. In recent decades this agenda has broadened further to acknowledge the role of education and cultural context in building skills and knowledge for a sustainable future. These global initiatives provide indicators that rekindling our relationships with nature through culture and education is a key path towards a sustainable future (UNEP, 2023; UNESCO, 2022).

These international developments began prioritising Environmental and Sustainability Education goals and benchmarks in the late 1970s. At the same time, there was increased advocacy and development within the field of environment and sustainability in Aotearoa New Zealand. Reflecting the increasing international call for environmental education to be

included within formal curricula, Environmental and Sustainability Education was formally identified and included in the nation's curriculum during its development in 1993 (MoE, 1993) and has subsequently been a part of numerous policies (see for example, MoE, 1999; MoE, 2015). This curriculum related development was followed by several landmark policy and educational initiatives by various government departments (MfE, 1998; Department of Conservation, 2017). The focus on teacher training and capacity development for Environmental and Sustainability Education as part of the Decade of Education for Sustainable Development (UNESCO, 2023), was echoed in professional development programme for teachers and environmental educators and advisors by the Ministry of Education in the early 2000s.

More recently, recognition and inclusion of Indigenous communities, knowledges and participation has become increasingly evident in the global context. Indigenous Peoples have been recognised as central to environmental care due to their historical and cultural traditions and practices of interconnectedness between land, life, and people. Within Aotearoa New Zealand, this significance was evident through one of the formative Environmental and Sustainability initiatives in the country. The Enviroschools Programme established in 1993 (Toimata Foundation, 2023) was developed around Māori knowledge and wisdom that honours the status of tangata whenua (Indigenous Māori people of the land). Enviroschools was also the first programme to include ECE within its scope. While this was a significant step towards the formal recognition and inclusion of Indigenous knowledge as well as ECE, for financial and logistical reasons the programme is available only to Kindergarten Associations, and not to the majority of ECE settings run by the corporate sector. There is scope to cement the availability further within educational policies and programmes by making access to such programmes more equitable by extending similar support to all ECE settings.

Moreover, the significance of considering and including diverse cultural contexts has also been recognised by the Decade of Education for Sustainable Development (UNESCO, 2023). For a superdiverse nation such as Aotearoa New Zealand with increasingly multicultural ECE settings, this becomes increasingly complex. Along with the Indigenous Māori culture, Pacifica culture and the western Pākehā culture, it becomes important to consider the environmental and sustainability perspectives and practices of the children, families, and teachers from diverse migrant cultures and countries while planning and implementing Environmental and Sustainability Education initiatives.

Numerous research initiatives have been undertaken in the past few decades to assess the impact of environmental programmes across schools in the country (Bolstad, Baker, et al., 2004; Bolstad, Cowie, et al., 2004; Bolstad, Eames, et al., 2004; Cowie et al., 2004). Although ECE settings were not included in this research, an update of these reports in 2015 (Bolstad et al., 2015) saw the inclusion of Environmental and Sustainability Education within ECE as part of the research. Thus, although this updated report was the first step towards the inclusion of ECE within this context, this initiative does not seem to have gained significant traction. There remains a need to research and assess the extent to which Environmental and Sustainability Education is, and can become, a feature of ECE settings within the country.

2.2.2. Environmental and Sustainability Education Research

While these international policy movements were taking place, a growing tradition of research in the field of Environmental and Sustainability Education was being established as well. Education and lifelong learning were now viewed and researched as a necessary means to “reduce our collective ecological footprint and increase our ecological handprint” for a sustainable future (Wals & Benavot, 2017, p. 406). Environmental and Sustainability Education frameworks were being studied as critical tools in addressing the increasing human-environment imbalance and achieving sustainable development. Research increasingly yielded evidence that Environmental and Sustainability Education or a focus on developing environmental literacy encouraged and equipped people to bring about positive changes in environmental and sustainability related attitudes and behaviour (Dyment et al., 2015; Wals & Benavot, 2017).

Recent research has shown that education shapes values, behaviours, and worldviews while building concepts and competencies to check human impact on the environment by reassessing the relationship between humans and the natural world. Ardoin et al. (2020) state that effective Environmental Education can enhance attitudes, values, knowledge, and skills to undertake positive environmental actions. Therefore, Environmental and Sustainability Education can play a crucial role in the move towards an environmentally sustainable present and future (Wals & Benavot, 2017). Studies have also highlighted ways in which education best supports the environment and sustainability as it draws on diverse viewpoints, particularly Indigenous knowledge, and practice; emphasises learning through local ownership, collaboration, transformation in partnership with civil society groups; and

promotes lifelong learning by acquiring new transformational skills and competencies (Alcock & Ritchie, 2018; Hunter et al., 2018; Wals & Benavot, 2017).

Studies have found that in addition to change in behaviour and attitude, Environmental and Sustainability Education provides opportunities for learners to understand and engage with environmental issues (Hunter et al., 2018; Wals & Benavot, 2017). It equips children and adults alike to contextualise local environmental issues within global concerns, make connections between research and practice, and address environmental issues with concrete actions (Ardoin et al., 2020).

Since it was first recognised as a concern internationally by the global research community, Environmental and Sustainability Education research has evolved from a focus on nature conservation to solving environmental problems, to critical perspectives on human-nature relationships, and in its current form as an integrated socio-economic-environmental approach to environmental sustainability (Stevenson et al., 2017). This is reflected in the objectives of Environmental and Sustainability Education. There has been a move beyond the temporary goal of behavioural change to an intrinsic change in values that creates lasting understandings and sustenance of human-environment connections. Research has called for a combination of ‘instrumental’ or behavioural focussed approaches and ‘emancipatory’ approaches that are action-oriented, collaborative, participatory and transformative (Hunter et al., 2018; Sterling, 2010; Wals & Benavot, 2017).

Recent critiques of Environmental and Sustainability Education (Hunter et al., 2018; Wals, 2019; Wals & Benavot, 2017) highlight the need to reassess the current dominant Western educational framework that might be perpetuating rather than preventing the detrimental impact on the environment for the sake of human development and progress. Conventional Western education has been anthropocentric in nature, centred on humans and their domination of other living systems (Orr, 2004; Wals, 2017). Today, the Western education system is being shaped by neoliberal influences of consumerism and corporate culture that promote learner identities based on self-interest, individualism, and self-centredness (Giroux, 2003). Thus, rather than encouraging interconnectedness and relationality with the natural environment, this educational orientation essentially equips people to become ‘more effective vandals of the Earth’ (Orr, 2004, p. 5).

In the current Environmental and Sustainability Education scenario, while it is important to consider what is taught, it is even more critical to consider how it is taught (Hunter et al., 2018). There is an increasing call for a shift away from Western anthropocentric perspectives and towards Indigenous biocentric ways of looking at the connections between the human and the more-than-human (see for example, Almeida, 2017; Nolan, 2022; Ritchie, 2010a; Vincent-Snow, 2017).

Equally important is the implication that if education in its current form only prepares citizens for a competitive, globalised, consumer-driven marketplace, then the worldwide crisis of unsustainability and ecological or slow violence (Nixon, 2016) also implies a crisis of education and identity (Hunter et al., 2018; Orr, 1992, 2004). An important part of this remedial education process appears to be ‘re-learning that we are intimately connected to all aspects of our planet and its ecosystems’ (Hill, 2008, p. 26). Re-examining the human-environment relationship including human attitudes and behaviours could facilitate sustainable interactions between humans and the environment (Chapin III et al., 2010; Soga & Gaston, 2016).

With this brief background to the emergence and importance of Environmental and Sustainability Education research in the international context, some recent related critiques, and the connections between environment-sustainability-education, I now focus on Environmental and Sustainability Education specifically within the Aotearoa New Zealand context.

2.2.3. Environmental and Sustainability Education: Aotearoa New Zealand Context

Aotearoa New Zealand is a small country in the South Pacific, lying southeast of Australia. Two major islands, the North and the South Island, make up the nation with an estimated population of 5,223,100 as of 30 June 2023 (Stats NZ, 2023a). The country is geographically diverse with some natural landscapes, long coastlines and unique flora and fauna. The country’s ecosystems support a diverse range of life forms among the variety of geographical features including forests, wetlands, grasslands, and marine environments. Aotearoa New Zealand was an uninhabited landscape until the last thousand years. However, the advent of Polynesian (Māori), and much later European settlers with their increasing populations and

indiscriminate use of land for development purposes, have resulted in significant environmental changes including the endangerment of the unique biodiversity on the island nation (Robertson et al., 2021). Agricultural land use in Aotearoa New Zealand began as subsistence living and crop growing during initial Māori settlement but under European settlement has intensified over the past 180 years as a result of increased sheep and dairy farming and horticulture (Haggerty & Campbell, 2008).

In recent years, increased fertilisation and irrigation have been depleting the soil health and fertility (MfE & Stats NZ, 2022). These changes are in turn putting pressure on Aotearoa New Zealand's unique ecosystems. The waterways are increasingly polluted by human activities and waste from land, plastics and fertilisers are significant concerns. Pollutants in the waterways, increased sedimentation due to deforestation, overfishing, and the resulting habitat destruction are putting pressure on the native freshwater ecosystem, fish species, and coastal and marine environment (MfE & Stats NZ, 2022). Aotearoa New Zealand's gross greenhouse gas emissions, with almost half emanating from agriculture and livestock, have increased by 20% over the past 30 years, contributing to global climate change (MfE & Stats NZ, 2022). In 2020, while the country's gross greenhouse gas emissions were 4.7 percent lower than 2005, they were 20.8 percent higher than 1990 (Stats NZ, 2022).

The country's biodiversity has also been affected severely. Native forests have been progressively removed, where more than 80% of land covered with native forest before human arrival, had reduced to a mere 27% in 2018 (MfE & Stats NZ, 2022). Of the 71 ecosystems identified as rare in 2014, 45 were classified as threatened. Habitat destruction and the introduction of mammalian predators has severely reduced the population of several unique birds, reptiles, and plant species, with many still under threat of extinction or at risk of becoming threatened (MfE & Stats NZ, 2022). More than 75% of indigenous reptile, bird, bat, and freshwater species are at risk of or threatened with extinction (Stats NZ, 2023b). As a result, there has been growing concern for the land and the need to address environmental issues that threaten the country's biodiversity and environment (Eames & Barker, 2011).

These national issues have led to increasing advocacy for inclusion of Environmental and Sustainability Education in school curricula. Since the 1970's, Environmental Education has been visible in the country, resulting in the formation of the New Zealand Association for

Environmental Education (NZAEE), teacher pre-service Environmental Education courses, and school-initiated Environmental Education curriculum components (Eames et al., 2008). *The New Zealand Curriculum Framework* (MoE, 1993), was designed to include Environmental and Sustainability Education as part of several ‘essential learning areas’ but not as a stand-alone learning area. While schools and students were encouraged to become aware of the environment and take responsibility for local concerns, Environmental and Sustainability Education was only a subtle and indicative component of the curriculum framework. Schools were required to develop their own programmes and initiatives in this area (Eames et al., 2008).

Although Environmental and Sustainability Education was not a distinct feature of the national school curriculum initially, there have been national and local policy, curriculum and programme initiatives and developments in this area over the past two decades (Eames et al., 2008). The Ministry for the Environment Manatū mō te Taiao initiated this process in 1998 with a national strategy for Environmental Education titled *Learning to Care for Our Environment* (MfE, 1998). Related to this strategy, the Ministry of Education designed the *Guidelines for Environmental Education in New Zealand Schools* (MoE, 1999) to help schools with ways in which Environmental Education could be integrated into the seven essential learning areas of the curriculum. The Ministry of Education also funded three specific programmes up to 2003 to support the Guidelines: Environmental Education Professional Development (Christchurch College of Education); Professional Development for Sustainable Organic School Gardens (Massey University and the Soil and Health Association of New Zealand) and an Environmental Education Advisors Programme between 2002-2003, coordinated by the Christchurch College of Education (Bolstad, Cowie, et al., 2004). Additionally, the one significant large scale research study to investigate the impact of Environmental Education in Aotearoa New Zealand schools was the Environmental Education in New Zealand Schools project undertaken for the Ministry of Education by the New Zealand Council for Educational Research (NZCER) and The University of Waikato between 2002 and 2003 (Bolstad, Cowie, et al., 2004). The objectives of this research were to identify strengths and opportunities for future practice and provide directions for future planning, implementation, and evaluation of the Environmental Education programmes in schools. ECE settings were not a part of this initial research. The research project and its

findings were documented in a series of four reports (Bolstad, Baker, et al., 2004; Bolstad, Cowie, et al., 2004; Bolstad, Eames, et al., 2004; Cowie et al., 2004).

The findings from the above-mentioned reports were updated in 2015 (Bolstad et al., 2015) in the form of new literature and developments in Environmental Education practices in the decade since the original project. The evidence reflected some progress in the Environmental Education practices in schools, but these were unevenly spread and in need of coordination. The update recognised the reorientation of Environmental Education (EE) to Education for Sustainability (EfS) and the implications reported on developments in practice, including new understandings about and approaches to Environmental Education or Education for Sustainability across educational settings, and discussed capacity building for teachers. The most significant update in the report was the inclusion of ECE settings in all aspects of the research. The report also identified the growing attention on Education for Sustainability in Aotearoa New Zealand ECE and recognised the challenges teachers faced in integrating EE/EfS into *Te Whāriki* the ECE curriculum (MoE, 1996), and practicing in locally responsive and contextually relevant ways. One of the successes reported in the update was the perceived “strong synergies between EfS and *Te Whāriki*” (p. 26), however there continued to be “variability in practice and approaches across the sector” (p. 26). The report revealed that research on Education for Sustainability in ECE had demonstrated place-based and culturally-responsive Environmental and Sustainability Education approaches that reflected an ethic of care for selves, others, and the environment (Bolstad et al., 2015).

In subsequent years, the revised *New Zealand Curriculum* (MoE, 2007) made identifiable connections to Environmental and Sustainability Education and encouraged learners to actively contribute to the environmental well-being of the country (Eames & Cutter-Mackenzie, 2017). Education for Sustainability was made a distinctive part of the Social Sciences learning area. The Ministry of Education also developed the *Education for Sustainability Teaching and Learning Guide* (MoE, 2015) based on the earlier *Guidelines for Environmental Education in New Zealand Schools* (MoE, 1999).

Recently, the Department of Conservation along with the Ministry for the Environment and the Ministry of Education (2017) produced their successor to *Learning to Care for Our Environment Strategy* (MfE, 1998), the *Environmental Education for Sustainability Strategy*

and Action Plan for 2017-2021. The strategy laid out an action plan to guide government agencies in their collaboration to support the delivery of high-quality Environmental Education for Sustainability (EEfS) across Aotearoa New Zealand. The aims were to “enable coordination of EEfS, grow capability and capacity in EEfS delivery, and strengthen pathways in sustainability practice” (p. 7). The plan covered EEfS at all levels of formal education, from early childhood to tertiary.

The Environmental Education policies, programmes, practices described so far show that while there have been visible efforts to include and promote Environmental and Sustainability Education within the Aotearoa New Zealand formal education system, this progress has been predominantly in primary, intermediate, and high schools. The two significant curriculum documents with reference to Environmental and Sustainability Education, the *Guidelines for Environmental Education in New Zealand Schools* (MoE, 1999) and the *Education for Sustainability Teaching and Learning Guide* for Levels 7 and 8 (MoE, 2015) accompany the *New Zealand Curriculum* and are aimed at schools. No such guidelines have been developed specific to the ECE sector, nor were similar professional development programmes funded for ECE teachers.

Despite this disparity across the education sector, there have been numerous in-school environment programmes supported by government and non-government partners. The biggest and most successful Environmental Education initiative has been the nationwide EnviroSchools Programme established in 1993 (Toimata Foundation, 2023). Te Mauri Tau, Toimata Foundation, work with a network of regional partners support schools and early childhood centres in their long-term commitment to Environmental and Sustainability education (Toimata Foundation, 2023). The Programme is underpinned by Māori perspectives that honour the status of tangata whenua (Indigenous Māori people of the land) and value Indigenous knowledge and wisdom. The diversity of people and culture is acknowledged and viewed as a vital contribution to the collective action of the EnviroSchools Programme (Toimata Foundation, 2023). The EnviroSchools kaupapa (principles) include: Empowered Learners in meaningful ways; Learning for Sustainability as a holistic, action and future-focused approach; Envisioning and taking action for sustainability alongside local hapū (sub-tribe) from a te ao Māori perspective; Respecting and celebrating cultural diversity and identities; Creating sustainable communities through nurturing the environment and people in

the present and the future (Toimata Foundation, 2023). It was the first major programme to include ECE settings and operates only in ‘state’ kindergartens under the auspices of Kindergartens Associations within the ECE sector (based on the Foundation’s limited resources) with the aim of providing Environmental and Sustainability Education support and resources to teachers, children, and communities. EnviroSchools adopted the ‘whole school approach’ where students, teachers, parents, and the Board of Trustees worked with government agencies and non-governmental organisations across the country. The goal was to help provide tools and infrastructure to develop and facilitate Environmental and Sustainability Education across schools and ECE services in the country. As of 2023, the EnviroSchools programme is being implemented in over 1033 schools and 457 ECE settings (kindergartens) across Aotearoa New Zealand (Toimata Foundation, 2023).

The Aotearoa New Zealand ECE context is becoming increasingly diverse in terms of cultures, ethnicities, and languages (Chan, 2020; Chan & Ritchie, 2023), as also acknowledged by the early childhood curriculum *Te Whāriki* (MoE, 2017). Within the context of this ‘superdiverse’ nation (Royal Society of New Zealand, 2013; Spoonley, 2014; Vertovec, 2019), there is an increasing recognition and advocacy for Environmental and Sustainability Education to become more inclusive and authentic through diverse approaches (Duhn & Ritchie, 2014; Eames & Cutter-Mackenzie, 2017; Paul-Burke & Rameka, 2015; Ritchie, 2015; Vincent-Snow, 2017). The alternative approaches being championed include place-based approaches that incorporate non-western Indigenous Māori philosophies which promote respect for the natural environment and peaceful co-existence of humans and more-than-humans for a sustainable future. Therefore increasingly, Environmental and Sustainability Education has been based on culturally-appropriate and inclusive philosophies as underpinned by broad educational initiatives in the sector. For instance, the refreshed early childhood curriculum *Te Whāriki* called for an increased implementation of, and adherence to, kaupapa Māori (a Māori approach that assumes the normalcy of being Māori) within the framework (MoE 2017; Te One & Ewens, 2019) and included multiple references to kaitiakitanga (Fernando, 2023). In many ways, the local Environmental Education programmes acknowledge and include the bicultural context of Aotearoa New Zealand, wherein Māori history and culture are considered central to planning and implementing these programmes in and out of schools.

This overview of the Aotearoa New Zealand Environmental and Sustainability Education context presented in this Literature Review forms the backdrop for my research study. ECE and the place of Environmental and Sustainability Education within that sector is the focus of my research and relevant literature is now discussed in the following sections.

2.3. Early Childhood Education (ECE) in Aotearoa New Zealand

In this section I begin by taking a very brief look at literature on the meaning and rationale for ECE in the international context, and then a detailed look at the Aotearoa New Zealand ECE context. There is a global consensus across academia, policy, and practice on the impact of education in the early years. As recently noted, “quality pre-primary education is the foundation of a child’s journey: every stage of education that follows relies on its success” (United Nations International Children’s Fund [UNICEF], 2023). This statement encapsulates the significance and need for ECE as envisaged by the United Nations. ECE is viewed as vital to set a strong foundation for learning where children develop critical skills for success in school and society.

The UN along with the World Organisation for Early Childhood Education or L'Organisation Mondiale pour l'Éducation Préscolaire (OMEP, 2021) are two foremost international organisations that work toward providing quality educational opportunities for children, defending human rights and advocating for ECE. These organisations recognise ECE as the field of education relating to the first six to eight years of life, a period of remarkable brain development and a ‘crucial window of opportunity for education’ that lays the foundation for lifelong learning (UNICEF, 2023). The goal of ECE is recognised as to build a strong foundation through health and nutrition, holistic development, socio-emotional learning, and lifelong educational success and economic productivity.

Several landmark decisions have been made and steps have been taken to encourage and ensure access to education including ECE across the globe. One significant global commitment to education in general and especially ECE and sustainability was made when the UN Member States adopted the 17 Sustainable Development Goals (SDGs) as part of the *Transforming our world: the 2030 Agenda for Sustainable Development* resolution in 2015. Education features explicitly in the SDGs with Goal 4 being Quality Education. The goal includes that all children have access to quality early childhood care, development and

education in preparation for primary education (UNESCO, 2015). Goal 4.7 focuses exclusively on education for the development of knowledge and skills to ensure sustainable development. It highlights the need to educate for sustainable lifestyles, global citizenship, appreciation of cultural diversity and cultural contribution to sustainable development (UNESCO, 2015). Although a significant step at policy level, Goal 4.7 presents challenges in practice as was discussed at the 3rd Asia-Pacific Meeting on Education 2030: Mainstreaming SDG 4.7 in Bangkok (UNESCO, 2017). Within the Asia-Pacific region, the primary challenges were identified as ambiguity in the scope and key concepts as well as lack of technical support to meet the Goal provisions. Teacher education and teaching resources were also found to be inadequate to implement this goal. Generalising the goal principles and expectations across the region has been problematic as contexts and priorities are diverse among nations. Education for sustainability needs to be tailored to suit local contexts and cultures through context-specific planning, implementation, and monitoring of progress. According to the UNESCO New Zealand National Commission, the country particularly supports Goal 4.7 through Global Citizenship Education that promotes knowledge, skills, behaviour, attitudes and values of cooperation (New Zealand National Commission for UNESCO, 2021).

In Aotearoa New Zealand, ECE is the provision of education and care for children from birth to school entry, that is 5-6 years of age (MoE, 2022). The Ministry of Education is responsible for the early childhood services, the Education Review Office Te Tari Arotake Mātauranga (ERO) evaluates services for quality assurance, while the New Zealand Qualifications Authority Mana Tohu Mātauranga o Aotearoa assesses teacher qualification levels. According to the 2022 annual ECE Census for licensed early learning services (Education Counts, 2023a):

- There were 4,597 licensed services running across the country.
- There were 181,045 children attending licensed early learning services.
- There were 32,632 qualified and unqualified teaching staff at licensed early learning services.

The Ministry of Education (2022) classifies early learning services into two main types: teacher-led services and whānau-led (family-led) or parent-led services. These early learning services range from not-for-profit, to community-based and private (for profit) services.

These current trends in ECE provision and services can be traced back to the 1980s and 1990s when Aotearoa New Zealand (like elsewhere in the world) was swept by neoliberal ideologies and policies. This phenomenon has had a significant impact on the nation's social context including inequities in wealth distribution and access to basic education. A competitive approach to early learning provision encouraged by extreme market policies and harsh labour laws led to a rapid rise in for-profit businesses (Mitchell, 2019). As a result, the ECE sector became increasingly privatised (Mitchell, 2019). The rationale behind privatisation and marketisation is that the resulting competition will increase access, offer choice, encourage competitive pricing, improve quality, and raise accountability (Mitchell, 2017; Vandenbroeck et al., 2023).

However, the increasing privatisation of ECE has also led to for-profit providers or businesses having access to enrolment-based government funding with little accountability to the community for the sustainability of services. This condition where services only have to account for how they spend government funding (and not parent fees) provides a loophole that for-profit providers can exploit to cut costs and maximise profits (Mitchell, 2019). Additionally, a competitive market has led to duplication of services (Mitchell, 2017) and homogenisation of ECE settings, resulting in a lack of diversity or contextual and cultural responsiveness for the communities these services are part of.

Such changing economic and value systems are also the primary causes for the planet's biocultural damage (Ritchie & Skerrett, 2019). There is a growing acknowledgement of how capitalist corporations have eclipsed Western systems of thought and governance. This holds for Aotearoa as well where the effects of neo-liberalism in the form of increased dairying and industrialised agriculture, are felt environmentally, economically, and socially (Joy, 2015).

Within the ECE sector, the affordances given to Environmental and Sustainability Education are likely to vary for each type of service or setting. Since there are significant distinctions between the types of ECE services particularly not-for-profit as opposed to for-profit services that operate primarily as businesses, these affordances are likely to be influenced by the different types of services, ownership, and leadership as found in Aotearoa New Zealand (Ritchie et al., 2010) and the Australian educational context (Almeida et al., 2018).

These processes of profit-making and the resulting environmental challenges have implications for children's cultural and environmental identity development in ECE. This is compounded by the hegemony of Western capitalist ideas that govern these services perpetuating sociocultural and environmental harm through policies that encourage profiteering, competition, materialism, individualistic ways of being, and disconnectedness from the natural environment (Ritchie et. al., 2015). These neoliberal ideologies suppress Indigenous ways (such as te ao Māori and Indian philosophies) of thinking and being which are rooted in collectivism, community welfare, and harmony with nature (Ritchie et al., 2010).

The revival and continuity of these Indigenous ways are crucial in countering the numerous environmental challenges the country is currently facing as a result of economic exploitation of natural resources (Vincent-Snow, 2017). Indigenous Māori cultural beliefs and practices are centred on mutual protection and conservation of people and the natural world (Waitangi Tribunal, 2004). These traditional practices provide a sound and proven foundation upon which contemporary environmental policies and practices can be developed. For instance, the interconnectedness between people, places, and things in te ao Māori can be the driving force behind environmental protection and sustainability agendas and policies, as was evident to an extent in the recent *Environment Aotearoa 2022* report by the Ministry for the Environment Manatū Mō Te Taiao (MfE & Stats NZ, 2022). Ideas of linkages between the past, present, and future as well as connection with ancestors and descendants could highlight and enable an understanding of the urgency of the environmental challenges, especially for future generations. The natural environment and its resources are considered taonga (treasures) for Māori and hence they are responsible for its conservation and protection (Ritchie et al., 2015; Vincent-Snow, 2017). According to Māori beliefs, this is accomplished through restrictions on the overuse of natural resources in order to maintain natural balance and sustain all life on the planet. Such practices can play a significant role in curbing environmental exploitation and regulation of natural resources.

Table 2.1 provides an overview of these various types of ECE services currently available in Aotearoa New Zealand, including their defining features and provisions. All services other than playgroups are licensed or certified by the Ministry of Education.

Table 2.1 *Kinds of Early Learning Services in Aotearoa New Zealand*

Types of Early Learning Services	Features and Provisions
Teacher-led early learning services: 50% of the teaching staff must be qualified and certified.	<p>Kindergartens</p> <p>Not for profit, community based.</p> <p>Managed by the Kindergarten Associations.</p> <p>Generally, for children between 2-5 years with morning and afternoon sessions.</p> <p>Some offer all-day or flexible sessions.</p> <p>100% qualified and certified ECE teachers.</p>
	<p>Education and Care Services</p> <p>Privately owned / community owned / run by organisations for employees / corporate owned.</p> <p>From birth to primary school age.</p> <p>All-day flexible-hour programmes.</p> <p>Can have a particular language or cultural base.</p>
	<p>Home-based Education and Care</p> <p>Managed by licensed home-based services with registered ECE teachers as coordinators.</p> <p>For groups of 4 children between birth to 5 years.</p> <p>At an educator's / child's home.</p>
	<p>Te Kura (Correspondence School)</p> <p>For children between 3 and 5 years who cannot attend an early learning service.</p>
	<p>Māori-medium early learning services</p> <p>Bilingual Early Learning Services</p> <p>Services that use te reo Māori between 50 and 80 percent of their teaching time</p> <hr/> <p>Immersion Early Learning Services</p> <p>Services that use te reo Māori for over 80 percent of their teaching time.</p>
Whānau-led early learning services: parents/whānau involved and trained to build community networks.	<p>Te Kōhanga Reo</p> <p>Managed by the National Kōhanga Reo Trust.</p> <p>Not-for-profit / community based.</p> <p>Māori immersion early learning services.</p> <p>For children from birth to school age.</p>
Parent-led services	<p>Playcentres</p> <p>Managed by the New Zealand Playcentre Federation and regional Playcentre Associations.</p> <p>Run cooperatively by parents and member families.</p> <p>For children from birth to school age.</p>

	Playgroups	Community-based groups run by parents and whānau volunteers. 4 hours per day sessions generally in community halls. Not licensed but can be certified. Parents and whānau trained by the Ministry of Education.
	Ngā Puna Kōhungahunga	Playgroups that encourage learning in and through te reo Māori (the Māori language) and tikanga Māori (Māori ways of doing including practices, customs, and rituals).
	Pasifika Island Playgroups	Playgroups focussed on developing and maintaining Pasifika languages and cultures including Samoan, Tongan, Cook Island, Niuean, Tokelauan, Tuvaluan and Fijian.

Note. Compiled based on information provided at <https://parents.education.govt.nz/early-learning/early-childhood-education/different-kinds-of-early-childhood-education/> and <https://www.educationcounts.govt.nz/publications/ECE/maori-participation-in-early-learning>
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This section has provided an overview of ECE globally and early learning and the recent trends in ECE services in the Aotearoa New Zealand context. The following section describes the ECE curriculum framework that has been designed for, and is applicable to, all early learning services within the country.

2.3.1. Te Whāriki: The Aotearoa New Zealand Early Childhood Curriculum Framework

Te Whāriki, He whāriki mātauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum is the overarching bicultural curriculum framework for ECE in Aotearoa New Zealand, originally published by the Ministry of Education in 1996 and revised in 2017 (MoE, 2017). The curriculum document is viewed and held in high esteem internationally for being the first bicultural framework that honours Indigenous cultures (Tesar, 2015), as it reflects the country's "bicultural foundation, multicultural present and the shared future" (MoE, 2017, p. 2).

The curriculum framework talks about culturally-responsive environments and equitable learning opportunities for all children based upon the Treaty of Waitangi. *Te Tiriti o Waitangi* / *Treaty of Waitangi* was an agreement between the British Crown and Māori chiefs in 1840.

The Treaty is Aotearoa New Zealand's founding document upon which the Māori and Pākehā (New Zealanders of European descent) relationship was built as citizens of Aotearoa New Zealand. In the light of achieving equitable outcomes for Māori, *Te Whāriki* acknowledges and integrates the two predominant cultures of the country, Māori and Pākehā (New Zealanders of European descent). Additionally, the Treaty is viewed as reflecting the inclusion of the various immigrant cultural groups that have become a part of the Aotearoa New Zealand cultural context. The curriculum framework interprets this integration and inclusion as “a commitment to live together in a spirit of partnership and the acceptance of obligations for participation and protections” (MoE, 2017, p.3). This interpretation of the Treaty in the form of the 3 Ps (partnership, participation, protection) is based on the work of the Royal Commission on Social Policy (1987, as cited in Ritchie, 2018). This adoption and widespread take-up of the 3Ps is said to lack true acknowledgement of the commitments contained in the Māori version of *Te Tiriti* (Ritchie, 2018; Te Puni Kōkiri, 2001). It has been noted that commitment to *Te Tiriti* must be implemented through a deeper understanding of this Māori version of the Treaty (Mason, 2003; Ritchie, 2018).

With reference to ECE and *Te Whāriki*, a meaningful connection with *Te Tiriti* implies commitment to kawanatanga or honourable governance (Article 1) of ECE; Article 2 - ensuring that Māori as tangata whenua uphold their tino rangatiratanga (Māori self-determination) over their whenua (lands) and taonga katoa (all things of value); and Article 3 - that Māori have equal citizenship as non-Māori (Ritchie, 2018). These provisions are reflected in the ECE curriculum document through commitment to te reo Māori, “equitable opportunities to learn”, honouring equal citizenship and “culturally responsive environments” (MoE, 2017, p. 3; Ritchie, 2018). Teachers are expected to honour and promote “learner identity” through the inclusion and honouring of children’s “cultural ways of knowing and being” (MoE, 2017, p.12). For Māori, this means the teachers need to understand children’s “whakapapa connection to Māori creation”, use of te reo Māori in the ECE setting, and the interweaving of “te reo Māori and tikanga Māori into the everyday curriculum” (MoE, 2017, p. 12; Ritchie, 2018). As has been highlighted in recent literature (Ritchie, 2018; Ritchie & Skerrett, 2019), the original curriculum document (MoE, 1996) prompted teachers to reflect upon ways in which *Te Tiriti o Waitangi* was reflected in the everyday curriculum and the impact it has on children and adults. This notion was not explicit in the revised curriculum version of 2017, a significant omission in this regard (Ritchie, 2018). However, a related

noteworthy step in this direction has been the development of regulated *Te Whāriki* curriculum pathways that include a new bilingual pathway (early learning curriculum framework) for Māori language early learning services, in addition to mainstream and Te Kōhanga Reo National Trust services (MoE, 2023a). All early childhood services and certified playgroups will be required to implement the framework from 1 May 2024 (MoE, 2023a).

The revised curriculum framework (MoE, 2017) is written in English and Māori and is underpinned by sociocultural theories. It draws upon the developmental perspectives of Bronfenbrenner, Vygotsky, and Bruner; kaupapa Māori (a Māori approach that assumes the normalcy of being Māori) theory; Pasifika approaches to early learning; and critical theory perspectives (MoE, 2017). The curriculum has been designed for use across all Aotearoa New Zealand ECE settings including Kōhanga reo, licensed Māori language immersion education and care services providers. Although bicultural in nature, the document considers the multicultural nature of Aotearoa New Zealand society and provides for the inclusion of all immigrants and cultures within ECE (MoE, 1996, 2017). However, the broader ‘bicultural’ framing of Aotearoa New Zealand that the curriculum draws upon, has been critiqued in favour of a ‘Tiriti-based’ approach (Chan & Ritchie, 2020, 2023). Within the educational context such an approach would be reflected through the 3 Articles of *Te Tiriti*, implying honourable governance, upholding Māori tino rangatiratanga over their whenua taonga katoa, and full or equal citizenship (Ministry of Justice, 2016; Ritchie, 2018). A 4th Article is recognised as an oral clause in *Te Tiriti*. This Article of wairuatanga refers to equal standing for Māori spiritual beliefs and religious freedom (Berghan et al., 2017).

However, in practice, with addition to the lack of attention to the power differentials between the two treaty party signees (the British and the Māori), another challenge is the belief that the term ‘bicultural’ implies Māori and Pākehā, only the two dominant cultures of the country, while not including the diverse cultural and linguistic groups that reside here as well (Chan & Ritchie, 2023). Integrating te ao Māori knowledges and honouring a ‘Tiriti-based’ approach facilitates the inclusion of not only the two primary cultures of Aotearoa New Zealand but also the diverse migrant cultures, ethnicities, and languages that are part of the ECE context (Chan & Ritchie, 2023; Ritchie, 2018). This is particularly significant with reference to Article 3 that refers to equal citizenship for Māori, Pakeha and all other subsequent settlers

(Chan & Ritchie, 2023; Human Rights Commission, 2023), including the diverse cultures that are a part of the ECE context.

Te Whāriki or the woven mat is a metaphor for the ECE curriculum. The whāriki allows for diverse patterns through the interweaving of multiple knowledge bases, worldviews, beliefs and values (Paul-Burke & Rameka, 2015). It represents the multicultural context of ECE in Aotearoa New Zealand with children growing up as competent and confident learners with a strong cultural identity (p. 6). The curriculum document is not a prescriptive document (Tesar, 2017; Tyler-Merrick et al., 2019), but a framework that works as a guide for early learning services to adapt and implement as it best suits their context (MoE, 2017). ECE teachers are expected to work with whānau (extended family), parents, children, and communities to weave the principles, strands, and goals to suit their learning context (Ritchie, 2015). The open curriculum framework includes ECE pedagogical Principles, Strands, Goals, Learning outcomes, Pathways to School and Kura (Māori immersion schools), kaiako (as teacher/s are referred to in *Te Whāriki*) responsibilities, underpinning theories and assessment and evaluation guidelines. Each ECE setting uses the framework to develop their own context-specific curriculum philosophy and practices.

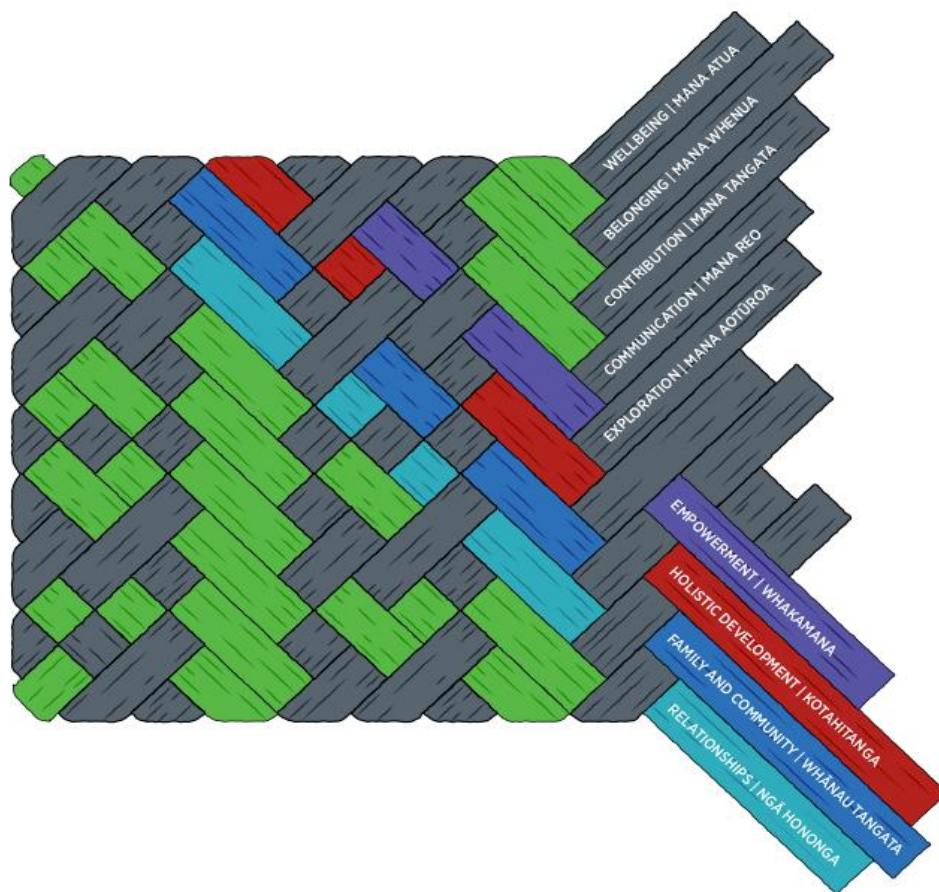
The curriculum Principles are interwoven with the curriculum Strands that form the basis for the framework as seen in Figure 2.1. The framework is underpinned by four foundational Principles | Kaupapa whakahaere that lay out the expectations from all early learning services and work as a guide for pedagogy and practice (MoE, 2017, p. 17):

- Empowerment | Whakamana: Early childhood curriculum empowers the child to learn and grow.
- Holistic development | Kotahitanga: Early childhood curriculum reflects the holistic way children learn and grow.
- Family and community | Whānau tangata: The wider world of family and community is an integral part of early childhood curriculum.
- Relationships | Ngā hononga: Children learn through responsive and reciprocal relationships with people, places, and things.

The Strands, Goals and Learning outcomes | Taumata whakahirahira together constitute the holistic framework (MoE, 2017, p. 22). The five Strands make up the five learning and development areas in ECE including:

- Wellbeing | Mana atua: The health and wellbeing of the child are protected and nurtured.
- Belonging | Mana whenua: Children and their families feel a sense of belonging.
- Contribution | Mana tangata: Opportunities for learning are equitable, and each child's contribution is valued.
- Communication | Mana reo: The languages and symbols of children's own, and other cultures are promoted and protected.
- Exploration | Mana aotūroa: The child learns through active exploration of the environment.

Figure 2.1 *Te Whāriki* Curriculum Principles and Strands



Note: Reprinted from Te Whāriki, He whāriki mātauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum (p. 11).

<https://tewhariki.tki.org.nz/en/key-documents/te-whariki-2017/the-whariki/>

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Each Strand consists of the following components:

- Goals: guidelines for kaiako (teachers) that outline the pedagogies and environments to facilitate children’s learning and development.
- Learning outcomes (made up of knowledge, skills, and attitudes): highlight the valued dispositions or tendencies to react to situations in particular ways.
- Learning dispositions refer to the readiness, will and ability of children to learn and construct learner identities. When applied across contexts and time they support lifelong learning. Learning dispositions given in *Te Whāriki* include courage and curiosity (taking an interest), trust and playfulness (being involved), perseverance (persisting with difficulty, challenge, and uncertainty), confidence (expressing a point of view or feeling) and responsibility (taking responsibility). Other learning dispositions include reciprocity, creativity, imagination, and resilience (p. 23). Many of these dispositions reflect the dominant and more commonly cited dispositions that characterise western education.
- Working Theories: ideas and understandings children develop as they use their existing knowledge base to make sense of new experiences (p. 23).
- Examples of practices that promote the Learning outcomes for various age groups and Considerations for Leadership, Organisation and Practice.
- Pertinent Questions for Reflection that kaiako (teachers) can use to support reflective practice.

The bicultural framing of the curriculum recognises that “All cultural groups have beliefs, traditions, and child-rearing practices that place value on specific knowledge, skills, attitudes, and dispositions (p. 20). Although the curriculum document refers to te ao Māori learning dispositions in *Te Whatu Pōkeka* (MoE, 2009), it does not expand upon them. It makes mention of learning dispositions such as rangatiratanga (autonomy, leadership, control, independence), whakatoī (daring), hūmārie (humility, gentleness, peacefulness) and whakahī (pride) among others (MoE, 2017). *Te Whatu Pōkeka* (MoE, 2009), an exemplar project on

kaupapa Māori assessment for learning, describes learning dispositions and their relevance in te ao Māori. Māori children are seen as having their own mana (potential and spiritual power), mauri (living essence), and wairua (spiritual self). Their learning and assessment reflect values of tikanga Māori such as manaaki (to nurture), aroha (to respect), awhi (to embrace), tautoko (to support), and tiaki (to care for). The findings highlighted other learning dispositions that are valued in te ao Māori. This recognition of cultural specificity and diversity in the nature of learning dispositions implies that teachers are required to work with whānau and parents to identify and facilitate culturally-derived dispositional aspirations for their children.

With this overview of the early learning context and the curriculum framework in Aotearoa New Zealand, I now provide a brief overview of environment and sustainability as a part of ECE globally. The next section focuses on the specific subject of Environmental and Sustainability Education within ECE, the evolution of the field, related research, and the developmental implications. This is followed by an in-depth discussion on the notion of Environmental and Sustainability Education and kaitiakitanga with reference to the early learning curriculum framework in Section 2.5.

2.4. Early Childhood Environmental and Sustainability Education

Although Environmental and Sustainability Education are considered lifelong learning processes, early childhood has been identified and widely acknowledged as a critical period for the development of environmental attitudes, behaviours, and connectedness (Engdahl, 2015; Samuelsson & Kaga, 2008; Wals & Benavot, 2017; Wilson, 2018). The North American Association for Environmental Education developed the *Guidelines for Excellence Early Childhood Environmental Education Programs* to highlight the significance of this developmental stage (NAAEE, 2016). Early childhood is the time when foundations of environmental values and attitudes are laid and hence the need to introduce ESD ideas as early as possible in ECE.

An international project by L'Organisation Mondiale pour l'Éducation Préscolaire (OMEP) or the World Organisation for Early Childhood Education (2009-2014) was a significant study aimed at promoting Environmental and Sustainability Education in ECE. Spread across 28 countries, including Aotearoa New Zealand, the aim was to increase awareness about

Education for Sustainability among young children, OMEP members, and the international early childhood community from a child-oriented perspective (Engdahl, 2015). Evidence showed that Environmental and Sustainability Education were integral to quality ECE. The study also found that young children were knowledgeable and aware of environmental and sustainability concerns thus making a case for early intervention and nurturance of environmental values and attitudes.

Although Environmental components have been included in ECE across many countries since the 1970's (Engdahl, 2015), in the 2000s there was an increased focus on the role of ECE for a sustainable society. The discourse reiterated the importance of early years in education for sustainability. The rationale for a focus on early childhood for sustainability was that values, attitudes, behaviours, and skills acquired in this developmental stage have a life-long impact. Education for Sustainable Development (ESD) continued to be a focus area globally, for instance through the declaration of 2004-2015 as the Decade of Education for Sustainable Development (UNESCO, 2005), a series of international conferences and workshops held in Göteborg, Sweden (Samuelsson & Kaga, 2008), and as a focus of OMEP agenda. In 2010, OMEP published a book titled *Education for Sustainable Development in the Early Years* by (Siraj-Blatchford et al., 2010) to facilitate Education for Sustainability practices in ECE. The book compiled examples and themes from ECE practice as a tool to support practitioners' understandings and implementation of Education for Sustainability in ECE. It also included several resources and links for teachers in the field.

Within the context of ECE, the term Environmental Education (EE) has been replaced by Early Childhood Education for Sustainability (ECEfS) (Davis & Elliott, 2014; Wilson, 2018). The change reflects the need to move from studying the environment as something separate from human beings towards a relational and reciprocal orientation between the natural world and humans, and the environment and the concept of sustainability (Wilson, 2018).

The significance of the early years in Environmental Education has also led to numerous approaches and orientations (Ardoin & Bowers, 2020; Ernst & Burcak, 2019). Early childhood Environmental Education is envisaged as education that employs environmental approaches to facilitate skills, values, and dispositions for promoting sustainability (Ernst & Burcak, 2019). Nature-based ECE programmes focus on the curriculum inclusion of real-

world natural experiences that support developmental benefits and contribute to the holistic wellbeing of children (Chawla, 2015; Wilson, 2018). Some Early Childhood Environmental Education approaches highlight the importance of outdoor play experiences. Others promote a participatory and transformative approach that prioritises children's agency in the process (Ärlemalm-Hagsér & Sandberg, 2013; Davis & Elliott, 2014; Samuelsson & Kaga, 2008). A broader conceptualisation is adopted by organisations like the NAAEE (2016) with the aim to educate children to become 'environmentally responsive youth and adults' (p. 3). Thus, although there are numerous variants and approaches to Environmental and Sustainability Education, the common goal is to engage children in meaningful environmental learning experiences to foster a sense of genuine care, respect, responsibility for the natural environment and the development of environmentally positive approaches to ensure sustainability for the planet (Ardoin & Bowers, 2020; Davis & Elliott, 2014; Wilson, 2018).

2.4.1. Early Childhood Environmental and Sustainability Education Research

In terms of research in the field, Education for Sustainability in ECE was a seriously under researched area until 2010 (Siraj-Blatchford et al., 2010). Davis's seminal review of research on ECEfS between 1996-2007 showed that there was a research "hole" during that time (Davis, 2009, p. 232). Davis specifically identified research on Environmental Education or Education for Sustainability programmes and studies that focused on young children's active participation in the process. Of the literature analysed, most studies investigated education *in* the environment (children's relationship with nature), some discussed education *about* the environment (children's understanding of environmental issues), and hardly any explored education *for* the environment (children's learning and capabilities in response to sustainability issues). Davis also made recommendations to address this paucity of research in Education for Sustainability through increased research, funding, and capacity building.

In the following years, Davis's (2009) seminal review was used as a reference point for several similar studies. Researchers acknowledged that there was slow but sure growth in this area, and it was receiving increased attention (see for example, Duhn, 2012b; Siraj-Blatchford, 2009). Another major research review on Education for Sustainable Development (ESD) in ECE covered literature from the period between 1996 and 2013 (Hedefalk et al., 2015) including all of the journals used by Davis in 2009. This latter review showed a growing interest in the field of ESD in ECE, with a significant increase in the number of articles on

sustainability. While Davis's (2009) research was critical in highlighting the dearth of research in this field, this review went a step further and focussed on researchers' definitions of ESD, implementation of ESD, major research findings, and perspectives on children's agency in ESD. Similar to Davis's findings (2009), this review also revealed that ESD in ECE was viewed in terms of education *in*, *about*, and *for* the environment. In addition, and in keeping with the global shift in discourse at the time, ESD was now perceived as three dimensional with the inclusion of economic, social, and environmental sustainability. This review showed that in contrast to Davis's findings, children's agency in ESD was being increasingly researched.

In 2015, Somerville and Williams conducted another comparative review using the same journals (from 1996-2007) which Davis used in 2009 to see whether the Sustainability Education research base and practice had changed in the five years since Davis's review. The subsequent review showed a significant increase in research being conducted and literature being published, with the number of articles published in the field having doubled. The literature was specifically analysed for the various types of methodological and theoretical orientations used. The analysis revealed that research methodology ranged from Positivist to Interpretive, Critical and Post-human. The interpretivist studies were informed by the discourses of connections to nature or a rights perspective (Somerville & Williams, 2015). A significant finding of this review was the increasing number of post-human studies in the field of early childhood Sustainability Education, characterised by the questioning of Western perspectives on humans and nature (Ritchie et al., 2010).

A further review focused on theories and methodologies used in Early Childhood Environmental Education research conducted by Green (2015) using 36 studies between 2004 and 2014. This review focussed specifically on children's positioning in research frameworks and methodologies. The review showed that studies were moving away from research *on* children's perspectives towards more participatory methodologies of research *with* and *by* children. Thus, although there was a shift towards children's agency in environmental research, their participation needed to become central to the research process to bring their voices to the forefront. Green's review continued the discussion on children's agency and rights in Environmental Education research in ECE and added to the reviews significantly by highlighting additional methodological trends and issues in the field.

A more recent exhaustive literature review on empirical studies of Early Childhood Environmental Education (ECEE) programmes (Ardoin & Bowers, 2020) spanned 25 years from 1995 to 2018 and reviewed 66 studies in-depth. The review found that increasing environmental challenges and growing interest in the benefits of education in nature had resulted in a significant increase in environment and sustainability research and practice in ECE. Most of the studies reviewed focussed upon cognitive, socioemotional, and environmental literacy development. Fewer studies explored physical, language and literacy development. Most of the literature appeared to highlight the effectiveness of play-based nature rich programmes. This review identified the understudied age group (birth to two years) in this field. Along with specific environmental outcomes of the ECEE programmes, it added to the existing research base by broadening the focus to non-environmentally related holistic implications such as physical, cognitive, socio-emotional, language and literacy development. A significant contribution of this review was highlighting the need for ECEE in nonformal learning environments. These landmark literature reviews since 2009 are evidence that ECEE is an increasingly researched area today.

The field has also witnessed an evolution of thinking about the themes that underpin ECE, starting with Davis's seminal review on Early Childhood Education for Sustainability (ECEfS) that looked at education *in*, *about*, and *for* the environment as that was the doctrine at the time. The field then transitioned into ESD to include socioeconomic development and sustainability into the equation. There was also significant progress in terms of the variety of theoretical and methodological frameworks being used to study the topic of Environmental and Sustainability Education with children's agency in the process becoming a central theme. In recent years, a strong theme that has emerged is thinking about connections between humans and the natural environment, and the specific developmental implications of these connections in the early years.

Additionally, in the past, ECEfS literature has typically been based upon the ideas and practices of education *in*, *about* and *for* the environment (Davis, 1998, 2009). If Environmental and Sustainability Education are to go beyond learning *about* the environment (knowledge) and being *in* the environment (nature-based play), it needs to be centred upon education *for* the environment (reciprocal relationship and sustenance). This form of

education would require a stronger affective component to facilitate strengthening of human and more-than-human relationships through an exploration of intrinsic components and connections such as those of being and identity. A significant fourth dimension in ECEfS that needs equal attention is education *with* the environment (Kelly et al., 2013), particularly from Indigenous perspectives where a relationship with and respect for the natural environment enable a sustained connection between ecology, sustainability, and education. Thus, Environmental and Sustainability Education must be aimed at education *for* and *with* the environment by strengthening relationships between humans and more-than-humans and facilitating a sense of respect and care for the natural world in the early years (Kelly et al., 2013; Wilson, 2018).

These recent perspectives appear to reflect the original ideas of environmental concern and stewardship put forth by Rachel Carson in *Silent Spring* (1962), often considered the beginning of the modern environmental movement. Escalating environmental challenges have compelled us to realise and revisit the need to go back to nature and nurture human-environment relationships for a sustained, or possibly any, future at all. Sustainability has become an issue of survival and not of choice for the planet (Wilson, 2018). Hence, there has been a noticeable interest and urgency to research environmental and sustainability pedagogies and practices in ECE. Additionally, there appears to be an increasing focus on human-nature relationships and connections within the field of Environmental and Sustainability Education, where examining one's own identity in connection with the natural environment seems to be the starting point of any such endeavour. Only when there is an awareness, understanding and realisation of that connection can humans feel an intrinsic motivation towards respecting the planet for environmental and socioeconomic sustainability.

2.4.2. Developmental Impacts of Early Childhood Environmental and Sustainability Education

Research has long provided evidence of the benefits of Environmental and Sustainability Education (Chawla, 2015; Wilson, 2018). The need and value of early connections and interactions with the natural environment have been studied from varied perspectives including the development of appreciation for the natural world and holistic developmental benefits including physical, health, cognitive and socio-emotional development (Ardoin & Bowers, 2020). The most significant effects of environmental interactions or education in the

environment can be seen on the holistic development of children, where several aspects of development and learning are influenced positively with being in the natural environment (Pelo, 2014b; Wilson, 2018).

Overall, there is a consensus on the need for children to make connections with the natural environment. Within that, there are a range of possible developmental benefits that can be organised under the head, hands, and heart principle (Sipos et al., 2008; Tilbury, 1995) based on the influence of environmental interactions on the cognitive, affective, and psychomotor learning domains of Bloom's taxonomy (Bloom et al., 1969). The cognitive domain includes the aspect of knowledge gain and the development of intellectual abilities and skills. The affective domain includes aspects of interest, attitudes, values, appreciation, and adjustment. The domain of manipulative or motor skills relates to physical abilities and skills. According to Tilbury (1995), the head/cognitive domain includes education *about* the environment while the heart/affective domain coincides with education *in* the environment. I would add that the psychomotor domain would encompass education *in* and *for* the environment, whereas education *with* the environment would fall under the head/cognitive and heart/affective domains.

Table 2.2 is a brief review of studies and literature on the developmental benefits of Environmental and Sustainability Education including nature-based learning and outdoor play. The review includes literature from several countries such as the United Kingdom, United States, Canada, Germany, Iceland, Sweden, Korea, South Africa, Australia, and Aotearoa New Zealand. It is presented under the learning and developmental domains described above.

Table 2.2 *Developmental Benefits of Environmental and Sustainability Education*

Learning Domains	Developmental/ educational domains	Teaching-learning experiences	Developmental implication
Head/ Cognitive	Cognitive development/curiosity (Cutter-Mackenzie & Edwards, 2013; Schutte et al., 2017)	Manipulating natural resources, sensory experiences.	Attention, memory, knowledge about and appreciation for the natural world.
	Knowledge/understanding of the natural world and/or sustainability. (Cutter-Mackenzie & Edwards, 2013)	Direct experiences in nature, experiencing weather, scientific reasoning, inquiry, use of logic.	Understanding of the natural world, human-nature interconnectedness, how it works, how to sustain it, our place in nature.
Hands/ Psychomotor	Physical development / health (Twohig-Bennett & Jones, 2018)	Exploration of the natural physical spaces, physical activities, risky play.	Motor skills, manipulative skills, non-locomotive skills, sense of efficacy, confidence, physical fitness/health.
	Life skills/adaptive skills/risk-taking (Ärlemalm-Hagsér & Sandberg, 2013)	Overcoming challenges in the natural environment.	Independence, self-help, adaptability.
Heart/ Affective	Emotional development/Mental health (Bang et al., 2018; Bohling-Philippi, 2006; Tillmann et al., 2018)	Emotionally positive connections and experiences with nature and others, sense of respect, care, and affinity with nature.	Reduced stress, healthy sense of well-being; developing their identity as nurturers.
	Social development (Bang et al., 2018)	Communicating with peers and adults, discussions about natural spaces and events, cooperative play.	Communication skills, cooperation, group work, behaviour regulation, understanding of social norms.
	Spirituality/connections with nature (Ärlemalm-Hagsér, 2013; Duhn, 2012b; Kelly et al., 2013; Larimore, 2016; Ritchie, 2010b; Robinson, 2019)	Exploration of the natural world, positive experiences.	Sense of joy, awe, insight, respect, love and care for the environment, lifelong connectivity/relatedness with nature.
	Wonder/creativity/imagination (Robinson, 2019)	Developing awareness and enjoyment of beauty and wonder in nature, familiarity with place, encouragement of curiosity and questions.	Being intuitive, being one with nature.
Holistic/ multiple domains of development	Studies with evidence of holistic developmental benefits or for multiple domains of development (Bang et al., 2018; Campbell & Speldewinde, 2019; Chawla, 2015; Ernst, 2014; Knight, 2011; McClain & Vandermaas-Peeler, 2016; McClintic & Petty, 2015; Müller et al., 2017; Norðdahl & Jóhannesson, 2016; Papatheodorou, 2013; Ritchie, 2013b; Schirp & Vollmar, 2013; Vincent-Snow, 2017; Wilson, 2018)		

Within the context of Environmental and Sustainability Education, the posthumanism perspective has emerged as the most significant critique of humanism, challenging the dominance and centrality of humans above other life forms. Posthumanism calls for a reconsideration of human-environment relationships and nature-culture binaries (Bayne, 2018) where humans are viewed as part of rather than separate from the natural world (Weldemariam, 2017). For instance, posthumanism is concerned with environmentalism, deep ecology, and animal rights (Ferrando, 2021). Posthumanist approaches have increasingly been used to study children's relationships with the natural environment and other living beings (see for example, Duhn et al., 2017; Malone, 2016; Pacini-Ketchabaw et al., 2016; Rautio & Jokinen, 2016; Taylor, 2017). These studies have focussed primarily on new materialism, child-animal relations, and Indigenous-non indigenous intersections (Somerville, 2020), some of which are described further in Section 2.6.5.

While this is not an exhaustive review of literature, Environmental and Sustainability Education has clearly been found to be critical for all the three developmental and learning domains. As is evident from the table, the affective domain appears to be an increasingly researched aspect within Environmental and Sustainability Education in ECE. Education *in*, *about*, *for* and *with* the natural environment seems to have a significant influence on children's relationships with and connections to nature. This sense of wonder and joy that enables children to bond with the environment is substantially inspired by the attitudes, dispositions, and values that they see reflected in their interactions with their teachers (Pelo, 2014; Ritchie, 2015; Wilson, 2018). Thus, teachers' affective connections with the natural environment could have a significant impact on children's affective learning domain within Environmental and Sustainability Education (Almeida et al., 2018; Kelly et al., 2013). My research explores similar elements of connectedness between children's and teachers' affective domains within Environmental and Sustainability Education.

Following this overview of the field of Environmental and Sustainability Education in ECE, I now turn to what Environmental and Sustainability Education looks like in the Aotearoa New Zealand context according to the literature.

2.5. Environmental and Sustainability Education: Aotearoa New Zealand ECE Context

In Aotearoa New Zealand, as Environmental and Sustainability Education is not a mandatory requirement in ECE, it is open to implementation by each early learning service/management/teacher, and it is not widespread across the sector (Croft, 2017). The locally developed Enviroschools programme (Toimata Foundation, 2023) established in 1993 (see Section 2.2.3) is the most prominent and successful environmental and sustainability programme to date. It draws upon Māori history, culture, and perspectives to support Enviroschools Kindergartens adopt and strengthen sustainability practices (Toimata Foundation, 2023). Although Enviroschools is a successful programme, its implementation varies widely across the diverse range of ECE settings across the country (Alcock & Ritchie, 2018; Bolstad et al., 2015). Although the Enviroschools Programme is not available to all ECE settings, even if it was to be made available more widely, there is a financial and logistical commitment (teachers, time, resources, infrastructure) that not all services would be willing to or be able to afford. It is often due to these challenges that private for-profit, community-based and not-for-profit services (that are not ‘state’ kindergartens) are not able to sign up for this programme.

Yet, despite no prescribed environmental and sustainability programme or component in ECE services, and practical issues that prevent their participation in the Enviroschools Programme, numerous private for-profit, community-based and not-for-profit services include environmental and sustainability components or learning experiences into their curriculum for young children. For instance, across Aotearoa New Zealand, excursions to natural spaces and areas of forest, bush, park, or farm are characteristic of ECE settings. Variations of these outdoor natural explorations are often referred to as ‘bush-kindy’ or ‘forest kindy’ (kindy being the vernacular for kindergarten). However, these are not generally full day programmes beyond the ECE setting gate, but bounded visits where children and teachers spend time in natural spaces. Although the idea of using the outdoors as a place of learning is not new for Aotearoa New Zealand, international programmes such as the Forest Kindergarten movement in Scandinavia and the United Kingdom (Dean, 2019; Knight, 2013; O'Brien, 2009; Robertson et al., 2009), and the growing awareness of Environmental and Sustainability Education have led to an increased interest in, and practice of, these ideas within the country (Kelly et al., 2013).

Early childhood Education for Sustainability was a “virtually untouched” (Duhn, 2012b, p. 23) research topic in the Aotearoa New Zealand ECE discourse up until as recently as 10 years ago. However, the *Environmental Education in New Zealand Schools Research Update* (Bolstad et al., 2015) reported a notable rise in Aotearoa New Zealand-based research on Environmental Education/Education for Sustainability theory and practice in schools and ECE as compared to 2002-2003. The data also showed that Aotearoa New Zealand Education for Sustainability literature frequently underscored the importance of approaches that acknowledge the Treaty of Waitangi, the country’s bicultural heritage, and the significance of te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals) in forming a local understanding of environment and sustainability. A similar trend has been visible in the ECE context with an increase in research, where te ao Māori (the Māori world) forms the basis for understanding and including Environmental and Sustainability Education within ECE (see for example, Alcock & Ritchie, 2018; Kelly et al., 2013; Ritchie et al., 2010; Vincent-Snow, 2017). Several of these studies focus on Environmental and Sustainability Education based on *Te Whāriki* (MoE, 2017) and kaitiakitanga as kaupapa Māori (a Māori approach that assumes the normalcy of being Māori).

Research studies have focussed on varied aspects of the field, such as Indigenous (Māori) perspectives on Environmental and Sustainability Education (Alcock & Ritchie, 2018; Paul-Burke & Rameka, 2015; Ritchie et al., 2015; Vincent-Snow, 2017); ecological sustainability through an ethic of care from Māori worldviews (Ritchie, 2010b); critical pedagogies of place and local traditional knowledges in teaching practice (Duhn, 2012b; Duhn & Ritchie, 2014; Ritchie, 2015); localised eco cultural literacies and pedagogies based on traditional Indigenous sustainability practices (Ritchie, 2017); teachers’ understandings of, and role in, environment and Sustainability Education (Ritchie, 2010a; Ritchie, 2013a; Ritchie, 2015, 2017; Ritchie & Veisson, 2018); environmental awareness and competency building for children, teachers, families, and communities (Duhn et al., 2010; Ritchie, 2010a; Vaealiki & Mackey, 2008); and outdoor and nature-based education (Alcock & Ritchie, 2018).

A significant study in this field, and the first of its kind in Aotearoa New Zealand, was the Teaching and Learning Research Initiative (TLRI) funded research project *Titiro whakamuri, hoki whakamua – Caring for self, others and the environment in early years’ teaching and*

learning (Ritchie et al., 2010). The researchers employed Western and Māori/Indigenous perspectives to investigate how teachers worked with the notion of ecological sustainability in their pedagogy and curriculum at 10 ECE settings across Aotearoa New Zealand. The overall aim was to build a culture of ecological sustainability practices in ECE. The project included a focus on the relationship between ‘the global’ and ‘the local’ resulting in the development of ‘pedagogies of place’ (Duhn, 2012a, p. 23). Indigenous pedagogies were central to the conceptualisations of place-based pedagogies for ecological sustainability (Ritchie et al., 2010). The idea of ‘place’ as central to ecological sustainability was evident in the teachers’ narratives. The research also showed that developing a sense of place was an effective strategy that enabled teachers to overcome the challenges of making connections between global ecological issues and local environmental concerns. Overall, the project (Ritchie et al., 2010) demonstrated the significance of ‘pedagogies of place’ for ecological sustainability, integrating te ao Māori notions of kaitiakitanga and manaakitanga (the process of showing respect, generosity, hospitality, and care for others).

The *Ngahere Project* (Kelly et al., 2013) was an action research study that investigated outdoor nature-based learning across six ECE settings in the North Island. The study revealed that natural environments both within and beyond the gates of the early learning contexts were stimulating contexts for learning *in, about, for* and especially *with* the environment. In addition, the teachers made connections between sustainability, Māori views of ecology (relationship and interconnectedness with the natural environment and place) and *Te Whāriki*, adding the significant dimension of education *with* the environment to Early Childhood Education for Sustainability. Like the TLRI Project discussed above (Ritchie et al., 2010), this study also highlighted the need to further evolve an Indigenous Environmental and Sustainability Education framework for Aotearoa New Zealand, drawing upon unique contextual Māori approaches and *Te Whāriki*. However, the *Ngahere Project* data also indicated that the environmental programmes were not accessible by all children across the country. Other than kindergartens that were part of the Enviroschools Programme, it was only due to the personal, professional, ethical, financial, and philosophical commitments and initiatives on the part of selective ECE settings, directors, managers/head teachers, and teachers that nature-based programmes were operating in the country. These authors concluded that a country-wide commitment was required in policy and practice at all levels for such programmes to be available for all ECE settings. The findings also reflected a need

for professional development programmes, targeted funding, mentoring and additional support was necessary if environmental programmes were to become a part of the ECE practice across all licensed services in the nation.

Thus, Environmental and Sustainability Education in ECE focussed on Māori knowledge and worldviews, nature-based learning, and outdoor education has become an increasingly researched area in Aotearoa New Zealand. Yet, there is considerable scope to delve into and study unexplored dimensions in this context. While much of the literature to date has focussed on environmental and sustainability pedagogies and practices by teachers for children, or teachers' understandings and roles in the process, only one of the articles (Ritchie, 2013a) highlighted the idea of teachers' personal sense of connection and relationality to the natural environment. This indicates a clear research 'gap' with very few studies exploring teachers' sense of self and identity in relation to the natural environment as a critical facilitating factor in early childhood Environmental and Sustainability Education. The research that is the subject of this thesis was in part precipitated by a desire to address this noticeable 'gap'.

It is noteworthy that the ECE curriculum framework *Te Whāriki* and the Māori idea of kaitiakitanga have been central to the research and literature on Environmental and Sustainability Education in Aotearoa New Zealand ECE. A better understanding of the various Māori interpretations of kaitiakitanga and how environmental and sustainability aspects feature in the curriculum framework requires further exploration as follows.

2.5.1. Kaitiakitanga

The Māori concept of kaitiakitanga is often equated with 'environmental stewardship' and hence used commonly with reference to Environmental and Sustainability Education. This common translation, although accepted generally in English texts, does not convey the authentic or accurate meaning and depth of the concept as inherent in Māori culture and worldview. The concept can only be truly understood within the context of te ao Māori and mātauranga Māori (Māori knowledge, culture, worldview), tikanga (customs), and language (McAllister et al., 2023). As an Indian researching in Aotearoa New Zealand, my limited understanding of the term is from an outsider perspective, more likely to reflect the English translation of the concept, and the explanation provided in *Te Whāriki*. Within this section I

attempt to provide a brief understanding of the idea as given by Māori researchers and scholars.

The meaning of kaitiakitanga in te ao Māori is said to extend beyond a passive environmental guardianship and stewardship to an active responsibility to care for the environment (Waitangi Tribunal, 2004). The concept implies “mutual nurturing and protection of people and their natural world” (Waitangi Tribunal, 2004, p. 8). It is referred to as the “traditional cultural system that upholds ecological conservation” (Ritchie et al., 2010, p. 38). For Māori, kaitiakitanga is a tikanga (a custom or a correct way of doing things) passed on through oral culture, rather than a definition (McAllister et al., 2023; Nolan, 2022).

In the Māori worldview, te ao mārama (the physical world), te taiao (the natural world) and te ao wairua (the spiritual realm) are interconnected, and hence a fundamental feature of kaitiakitanga is wairuatanga or spiritual connectedness with the natural environment (Ritchie et al., 2015). Māori as tangata whenua or Indigenous people of the land consider themselves part of the land, where the land is a link between the past, present and the future (Nolan, 2022). They view themselves as descendants of nature and hence owe this responsibility to tipuna (ancestors) and uri (descendants) where different tribes exercise kaitiakitanga (care-taking) of the natural environment in their respective geographic regions (Ritchie et al., 2015).

It has also been argued that while all people can practice kaitiakitanga, only Māori who are mana whenua can be kaitiaki (guardian/steward) of their whenua (McAllister et al., 2023). Kaitiakitanga is understood as the safeguarding of this relationship with the land. The term has been described as ‘the exercise of guardianship’ (Mead, 2016, p. 12); “guardianship” with ‘kai’ meaning to carry out an action and ‘tiaki’ meaning to guard (Nolan, 2022, p. 2); “reciprocal and balanced relationship with Papatūānuku (Earth mother) where people have user privileges, not ownership rights” (McAllister et al., 2023, p. 3); a holistic Māori worldview that “considers the well-being of natural resources to be directly related to the well-being of the people” (Paul-Burke & Rameka, 2015, p. 2); and “a Māori cultural practice of caring for and regulating interactions with the environment” (Forster, 2023, p. 243). Hence, kaitiakitanga is based on an understanding that all elements of the world are interrelated and the survival of all depends upon this interconnectedness (Paul-Burke & Rameka, 2015). It is a

"biological-cultural" or "bio-cultural" (Paul-Burke & Rameka, 2015, p. 3) perspective that is based on the interactions between people and their bio-physical contexts.

Researchers discuss various central concepts that make up the holistic notion or process of kaitiakitanga, which do not have literal English translations: mana, tapu/rāhui, and mauri (Nolan, 2022; Paul-Burke & Rameka, 2015). According to these Māori scholars, mana refers to the status or presence held by a person, place (such as a mountain or a river) or items referred to as taonga (treasures such as books, for example), by virtue of their action in the larger community. Tapu is when a person, place or taonga is considered sacred, requires restriction, and a breach of which is considered a serious violation (for example, a great leader or a battleground). Rāhui is a more temporary form of tapu that is for a limited period of time, where restrictions ensure sustainable practices and reciprocal relationships with the natural environment as a form of kaitiakitanga (Nolan, 2022). Mauri is the life force or essence of people, places (such as forests) and objects (such as tangible heritage).

In addition to the ideas of mana and mauri, some scholars (see for example, McAllister et al., 2023; Paul-Burke & Rameka, 2015) describe kaitiakitanga in relation to whakapapa, rangatiratanga, manaakitanga, and whanaungatanga. Whakapapa is the relational, sequential, and networked system of genealogical connections among the living world and the cosmological domain. It places Māori within an environmental context, as part of it rather than separate from it, and hence an understanding of kaitiakitanga begins from whakapapa. Rangatiratanga means sovereignty, self-determination, right to exercise authority. For Māori, the whānau (family), iwi (tribe), and hapū (sub-tribe) are sovereign authorities who have the right to manage and interact with the environment. Thus, kaitiakitanga is a manifestation of rangatiratanga as also provided for in Article 2 of *Te Tiriti o Waitangi* (Human Rights Commission, 2023; McAllister et al., 2023; Ritchie, 2018). Manaakitanga reflects the mutual and reciprocal relationship as the core of kaitiakitanga. It signifies the interdependence of people, places, and things in the world. Whanaungatanga or relationships denotes the Māori understanding of the natural world and its interconnectedness to humans and all forms of being (Paul-Burke & Rameka, 2015). As is evident from the literature discussed here, kaitiakitanga (and kaitiaki) is a significant part of te ao Māori with diverse and complex understandings and interpretations that go beyond a simplistic translation to environmental stewardship.

Aotearoa New Zealand ECE, and Environmental and Sustainability Education are based on several such understandings of te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals). *Te Tiriti o Waitangi | Treaty of Waitangi* recognises and affirms Māori as tangata whenua (Indigenous Māori people of the land). Te ao Māori is based on strong spiritual connections to the land and place. People's spiritual connectedness and reverence for Papatūānuku (the Earth Mother), Ranginui (the Sky Father), and their offspring the Atua/Gods of the forests, seas, winds, and cultivated and uncultivated foods, are upheld. The forests, forest creatures, and humans are all descendants of Tane Māhuta, the Atua/God of the forests (Alcock & Ritchie, 2018; Paul-Burke & Rameka, 2015; Ritchie, 2013a).

In te ao Māori, Atua are described as Gods or deities (McAllister et al., 2023; Ritchie, 2016) and ancestors of continuing influence (Moko-Painting et al., 2023). Atua and ira tangata (humans) are the kaitiaki (guardians) of these natural ancestors that form the natural environment and have an obligation to ensure the sustainability of the ecosystem for future generations using mātauranga Māori or Māori knowledge (Paul-Burke & Rameka, 2015; Ritchie, 2017). They believe in and practise kaitiakitanga, and management of natural organisms and their environment based on the notions of reciprocity, connectivity, and relationships (whanaungatanga) where the well-being of humans and the natural world is interdependent (Paul-Burke & Rameka, 2015; Ritchie, 2017). Children are also encouraged to take on the role of kaitiaki for the natural environment and its sustenance. In this way, Māori approaches to learning make connections between heart, head, hand, and place; thus, making affective learning through minds, bodies and hearts central to ECEfS in Aotearoa New Zealand (Kelly et al., 2013). These Māori worldviews lay the foundation for contemporary ECE curriculum and practice in Aotearoa New Zealand, including Environmental and Sustainability Education.

2.5.2. Te Whāriki and Kaitiakitanga

Although *Te Whāriki* does not make an explicit reference to 'Environmental and Sustainability Education' or related nomenclature, the place and significance of the natural environment in children's learning and development is evident in the revised curriculum document (MoE, 2017). Environmental and Sustainability Education ideas can either be

viewed as implied or explicitly visible in the document. Although the curriculum provides guidance and suggestions of ways that Environmental and Sustainability Education can be made a part of early learning, its non-prescriptive nature leaves the actual inclusion and implementation up to each ECE service. Within this context, teachers dedicated to environment and sustainability have taken initiatives to implement and encourage environmental practices across early learning services in the country (Kelly & White, 2012).

In terms of indirect implications, the curriculum framework recognises holistic and interlinked cognitive, physical, emotional, social, cultural, and spiritual dimensions of development in relation to the natural environment. The natural environment enables children to build upon prior knowledge, experience their place through their senses, and develop empathy, while maintaining a sense of awe and wonder for nature. Some of the ways in which this is implied in the curriculum are discussed next. Children's holistic wellbeing is viewed as interdependent with that of kaiako (teachers), parents and whānau (extended family). They need to make connections with and across their various communities and settings. The natural environment is one such pervasive setting that needs to be considered and integrated into the child's early learning experiences. These connections and relationships enable children to interact with significant others to test the knowledge they have created and shared within their ECE settings and create working theories and put them into practice (MoE, 2017, p. 21). They can learn about the natural environment through various experiences and use these experiences to create their own ideas and theories. The framework acknowledges that children are curious and still finding their footing in an unfamiliar world (MoE, 2017, p. 32). This curiosity can make them eager and prepared to develop a sense of belonging in their place (MoE, 2017, p. 31). This place includes the natural environment. They can make connections between all forms of life that share this habitat, and in turn, these connections are affirmed and extended. Children develop a sense of respect for the natural environment that derives from Māori worldviews (MoE, 2017, p. 31). Children should get opportunities to learn the stories and symbols of their own and other cultures, which facilitates the development of imagination, a key learning disposition stated in the document (MoE, 2017, p. 41). This disposition provides children with opportunities to exercise their creativity in traditional ways as they experience and care for the environment artfully (Kelly et al., 2013) and express their working theories about the environment through artistic mediums.

In terms of explicit environmental features of the framework, the most significant and visible change took place when the framework was revisited two decades after its inception. While the original document (MoE, 1996) talked about several ideas like children's relationships with the natural environment and respect for the living and non-living environment, the Māori term *kaitiakitanga* was not a part of the original curriculum document. Among other rationale, *Te Whāriki* was refreshed (MoE, 2017) with the goal of an increased kaupapa Māori approach within the framework (Te One & Ewens, 2019). These attempts were visible in the inclusion of the Māori term *kaitiakitanga* and hence this notion appears repeatedly in the refreshed curriculum framework (Ritchie & Skerrett, 2019). Within the revised curriculum, *kaitiakitanga* has been defined as “guardianship, environmental stewardship” (MoE, 2017, p. 66).

Arguments have been made for the perceived inadequacy or authenticity of these changes especially with reference to Environmental and Sustainability Education. As pointed out by Ritchie and Skerrett (2019), the revised version of *Te Whāriki* only mentions the term ‘sustainability’ once with reference to links to the New Zealand Curriculum (MoE, 2017, p. 54) and does not include links to the UNESCO (2015) Sustainable Development Goals, specifically Goal 4.7 (discussed in Section 2.3.). Although this may be viewed as an inadequate inclusion of environment and sustainability ideas within the framework, it could also be interpreted as a progressive development over time. At the time of the framework's revision (MoE, 2017), the significance of including environmental and sustainability education into the curriculum might have been beyond the scope of the agenda with other ideas gaining precedence. The revised document (MoE, 2017), although yet not ideal in this space, can be seen as a step towards more explicit inclusion of environment and sustainability ideas. For instance, the revised framework now includes terms and ideas such as *kaitiakitanga* and sustainability. The Principles and Strands reflect various interpretations of how these notions can be understood, included, and implemented within ECE. These may be viewed as some positive developments within the revised document.

Another critique could be that the notion of *kaitiakitanga* is defined simply as guardianship/environmental stewardship, a translation that does not do justice to the depth and complexity of the idea. However, it might be speculated that the goal of including this term within the document was likely to introduce the Māori idea of *kaitiakitanga* into ECE,

rather than enable an in-depth understanding of its diverse definitions and interpretations in te ao Māori. Such a definition might have been perceived as appropriate to the curriculum and context as it would enable teachers from all cultural backgrounds to understand and interpret this idea of kaitiakitanga and include it within their teaching and learning.

An encouraging feature of the curriculum framework is bicultural in nature it includes te ao Māori (the Māori world), acknowledging tangata whenua (Indigenous Māori people of the land) and their spiritual connection to the natural environment. In terms of connections to past, present, and future, the spiritual dimension is integral to a Māori perspective of relationships to maunga (mountain), awa (river), moana (sea), whenua (land) and marae (the complex of buildings and land associated with a hapū or sub-tribe). Thus, from an Indigenous perspective children are connected to the land and their identity is derived from the natural environment they inhabit (Duhn, 2012b; Vincent-Snow, 2017). Accordingly, the notion of kaitiakitanga binds people with the environment and children can be considered kaitiaki (custodians) of the natural environment.

It could be said that kaitiakitanga is highlighted in certain sections of the revised document. Principle 4 Relationships | Ngā hononga (MoE, 2017, p. 21) states that children must develop responsive and reciprocal relationships with people, places, and things, as also included in the learning outcomes for Strand 2: Belonging | Mana whenua (MoE, 2017). The Māori perspective of connections to past, present, and future and whakapapa (lineage/genealogy/ancestry) are considered integral to this process. Strand 2: Belonging | Mana whenua (MoE, 2017) outlines the need to show respect for Māori worldviews about the natural environment and connections to the land. Children must have opportunities to learn about the wider world, make connections between people, places, and things, and take part in caring for the place. The idea of kaitiakitanga features prominently in Strand 5: Exploration | Mana aotūroa (MoE, 2017, p. 46) where the child learns through active exploration of the environment. It highlights diverse ways in which children and their whānau understand and respect the environment, including reverence for Papatūānuku (the Earth Mother), Ranginui (the Sky Father) and Atua Māori (Māori Gods or deities). Children are encouraged to develop and refine working theories about the natural, social, physical and material worlds. This leads to “a sense of responsibility for the living world and knowledge about how to care for it” (MoE, 2017, p. 47).

Te Kete Ipurangi (TKI) or the online knowledge basket is Aotearoa New Zealand's bilingual education website (Ministry of Education [MoE], 2023b) that provides teaching strategies and resources for the country's schools and students. *Te Whāriki* online is the dedicated ECE professional learning and development portal that includes a section focussed explicitly on the topic of Te toitūtanga Sustainability or Environmental Education for Sustainability (EEfS) as part of the Belonging | Mana whenua Strand. It is important to note that Te Kete Ipurangi makes mention of environmental identity specifically, an idea not mentioned earlier in any ECE curriculum documents. The three dimensions of EEfS are recognised as education *in*, education *about*, and education *for* the environment, where the last dimension is considered the most critical (MoE, 2023b). The dimension of education *for* the environment includes deeper learning with the development of an environmental identity in the early years, as a strong environmental identity is linked with a positive orientation towards the natural world where children make connections with environmental issues and take an active role within that context. The third dimension emphasises the encouragement of a sense of curiosity and wonder and opportunities for inquiry. Education for the environment also highlights the need for an understanding of kaitiakitanga through place-based education, tikanga Māori (Māori ways of doing including practices, customs, and rituals) and mātauranga Māori (Māori knowledge); weaving the curriculum to suit the local environment, history of the place and local hapū (sub-tribe). However, education *with* the environment does not feature in *Te Whāriki* online.

Therefore, *Te Whāriki* and the *Te Whāriki* online portal reflect connections between children's learning, their relationship with the natural environment, and their place of being. These relationships could form the basis for Environmental Education through an ethics of care and a sense of kaitiakitanga (Kelly et al., 2013; Ritchie et al., 2010; MoE, 2017). The Aotearoa New Zealand ECE context borrows from the nation's uniquely Indigenous Māori worldview where interconnectedness with nature is inherent in the culture, rather than a separate educational component as in the western environmental and sustainability worldview. Broadly, as competent and confident learners (MoE, 2017, p. 5) children are considered active surveyors of their world. The curriculum views children as explorers who make sense of the natural, social, physical, material, and spiritual worlds. Children can realise that there are varied ways of knowing the world, being in it, and respecting it. The goal is to encourage a

sense of responsibility for the living world and knowledge about how to care for it (Ritchie, 2013a, 2013b). It is envisaged that this sense of responsibility would involve children developing their own ideas, acting upon them, and making judgements about environmental matters; hence furthering their sense of agency and belonging in their place of being. Adults or teachers within the early learning context play an important role in this process as described in the next section.

2.5.3. The Role of Teachers in Environmental and Sustainability Education

Given the importance of early learning for Environmental and Sustainability Education, ECE teachers become key players in the critical wider socioecological transformation that can address the current environmental crisis (Ritchie, 2017; UNESCO, 2012). Although children have a natural sense of wonder and curiosity for the environment; an aware, interested, and inclined adult alongside them can encourage and facilitate these connections (Orr, 1992; Wilson, 2018). Along with children's innate curiosity and connections with the natural environment, significant others play an important role. According to Carson (1956, p. 46) "If a child is to keep alive his inborn sense of wonder... he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in."

Teachers can take on the key role of facilitators to create opportunities for children's learning *in, about, for* and *with* the natural environment. Their guidance and support are important in creating an open and trustworthy space where children feel confident to express their ideas and understanding of environment and sustainability. It has also been argued that ECE teachers have an ethical responsibility to practise and encourage empathetic relationships between children and the more-than-human world around them (Ritchie, 2015). Teachers' positive environmental attitudes and behaviour can demonstrate this care and respect for the environment (Wilson, 2018) as children understand and make meaning of the natural world based on the knowledge, perspectives, and practices they see and experience through their routine dialogues and learning experiences in the ECE context (Ärlemalm-Hagsér & Sandberg, 2013).

For teachers to fulfil this responsibility, some researchers emphasise the importance of environmental knowledge in the process. The quality of ecological knowledge or literacy is critical to the educational process (Orr, 1992; Thomashow, 1995). This environmental

knowledge prerequisite indicates a need for ecologically aware teachers (Croft, 2017) who are informed and inclined to engage in intentional and reciprocal Environmental and Sustainability Education pedagogies. Conversely, researchers also suggest that teachers' own sense of wonder could be considered more important than knowledge of the natural world to inspire children (Pelo, 2014b; Wilson, 2018). From Carson's perspective (1956), it was more important for teachers and children to feel than to know when it comes to the natural environment. Environmental knowledge and facts of life alone may not be meaningful unless they are accompanied by a deep sense of kinship and self-relatedness with the natural world (Capra, 2007; Orr, 1992). Thus, teachers' environmental knowledge, awareness, sense of wonder, and confidence become critical components in planning and implementing Environmental and Sustainability Education components and facilitating children's environmental experiences in ECE.

Nevertheless, all teachers may not come to the ECE context equipped with these skills and ideas. Teachers enter the ECE profession with backgrounds in varied disciplines. Migrant teachers especially may have diverse educational and professional backgrounds wherein Environmental and Sustainability Education may have featured minimally or not at all. The teachers may require capacity building in the area of Environmental and Sustainability Education specifically for the Aotearoa New Zealand ECE context. These prerequisite capacities that would enable teachers in this process can be considered under the head, hands, and heart principle (Sipos et al., 2008) discussed in detail within Section 2.4.2. The head principle would include the environmental and sustainability knowledge and awareness, particularly in relation to the Aotearoa New Zealand context, that teachers would require to incorporate such elements into the curriculum. The heart aspect would be the teacher's personal sense of connection or interest in environment and sustainability or sense of wonder, which is connected to their experiences and values, which in turn are connected to culture (Ando et al., 2007; Clayton, 2012; Sarigöllü, 2009; Schultz, 2002). The hand domain would include the teachers' skills, confidence, and actions in integrating environmental and sustainability components into daily curriculum and practice.

Only if teachers are aware of, and have, opportunities to explore these three domains of knowledge about, sense of connections with, and confidence to act for the environment and sustainability, might they be able to understand and hone these qualities and skills within themselves and in turn, identify, understand, and encourage them with children (Pelo, 2009,

2014b; Wilson, 2018). Thus, a cognisance of their own environmental perceptions and attitudes would better enable teachers to support children's exploration and learning *in, about, for, and with* the environment (Wilson, 2018). This process would require an exploration of their identity and environmental teaching philosophies through self-reflection. Teacher identity is a critical component of the learning environment where teachers not only teach the subject content but also bring themselves into the equation when their teaching is defined by their sense of self (Raus & Värri, 2017). It can also be argued that, as teachers form an integral part of children's microsystem (Bronfenbrenner, 1979), their identity would have a significant impact on children's identity. Thus, it would be valuable to learn more about the transition process that teachers undergo from various educational and professional backgrounds into ECE or from one cultural context to another with reference to Environmental and Sustainability Education. It would also be beneficial to inquire into the kind of opportunities teachers require in order to build and use their knowledge, skills, capabilities, environmental relatedness to plan and implement environmental aspects into the curriculum. On the other hand, migrant teachers bring their own knowledge, skills, connections with the natural environment from their home cultural contexts (Eames & Cutter-Mackenzie, 2017; Esteban-Guitart & Moll, 2014). These philosophies and capabilities could be shared among their ITE ECE cohorts and professional teaching teams to bring in diverse environmental and sustainability perspectives that enrich the ECE context.

In terms of research, although there has been a significant increase in studies on Environmental and Sustainability Education in ECE, the focus has been on Early Childhood Education for Sustainability or Education for Sustainability Development (ESD) programmes, pedagogies, and practices, with increasing attention on children's participation and agency in the process and connections with the natural environment. The role of adults, in this case teachers, has yet to be addressed substantially. Teachers' involvement and agency in the process, professional learning opportunities and implications, and teachers' own connections with the natural environment are areas that need further research. My study endeavoured to add to this area of research in the context of Aotearoa New Zealand ECE. Hence, the following sections focus on the role of ECE teachers and culture in Environmental and Sustainability Education or the development of kaitiakitanga in accordance with *Te Whāriki*, the Aotearoa New Zealand ECE curriculum framework (MoE, 2017).

2.5.4. Te Whāriki and the Role of Teachers in Developing Kaitiakitanga

Internationally, early learning curricula have been evolving in the past three decades with frameworks affording teachers increased agency and flexibility in planning and implementation. Such curricula provide teachers with opportunities to think, reflect, and innovate (Samuelsson & Park, 2017). *Te Whāriki* (MoE, 2017) is one such curriculum. The revised version of *Te Whāriki* reflects renewed focus on adult or kaiako (as teacher/s are referred to in *Te Whāriki*) responsibilities within Aotearoa New Zealand ECE (MoE, 2017). The nonprescriptive curriculum framework enables, supports, and encourages kaiako to develop their own context-specific curriculum philosophy and practices. This openness gives early learning service providers and kaiako the responsibility and opportunity to adapt and implement ‘local’ curriculum as seen fit for their setting.

Accordingly, the extent to which Environmental and Sustainability Education is a part of early learning is determined by each early learning service, the management, and kaiako. However, there are several external factors such as type of service (private/corporate/for-profit/not-for-profit/kindergarten), government funding/support, resource availability, and infrastructure among others, that also influence the decision to include, prioritise, or exclude Environmental and Sustainability Education pedagogy and practice into a service’s specific local curriculum.

Additionally, given the nonprescriptive nature of the framework, kaiako shoulder significant responsibility for implementing the curriculum, bringing into focus the need for new and varied knowledge, skills, and attitudes (Williams et al., 2016 as cited in Samuelsson & Park, 2017). *Te Whāriki* recognises kaiako as key resources in ECE, where their primary responsibility is “thoughtful and intentional pedagogy” (MoE, 2017, p. 59), including provocations to facilitate children’s learning and development. The fact that the curriculum Principles | Kaupapa whakahaere are a guide rather than a prescription for pedagogy and practice implies that kaiako need to take up the responsibility of increased intentional teaching practices (Chan, 2019). Intentional teaching refers to “the purposeful and deliberate actions of kaiako, drawing on both their knowledge of individual children and professional knowledge and skills to provide meaningful and appropriate curricular experiences for all children in ECE” (McLaughlin et al., 2016, p. 176).

Intentional teaching requires kaiako to have a clear and deep understanding of the curriculum framework, which also necessitates the development of cultural competency in their teaching ideas and practices. Kaiako are exhorted by the *Te Whāriki* authors to ensure an inclusive environment that nourishes all cultural identities and encourages connections with the natural environment as an integral component of te ao Māori (the Māori world), the broader Aotearoa New Zealand culture and as a part of children's identities in the country. It is their responsibility to understand “how children and their whānau make sense of the world and respect and appreciate the natural environment” (MoE, 2017, p. 46). They are expected to instil in the children a sense of reverence for and affinity with the environment while creating opportunities for children to develop a sense of kaitiakitanga. They can achieve this through providing continuous and meaningful experiences in the natural environment and making connections with resources drawn from nature.

The curriculum document (MoE, 2017) lays out considerations and guidance for kaiako in the form of expected evidence of children's learning and development; examples of practice that promote learning and development; and most importantly reflective questions for kaiako within each curricular strand. With reference to kaitiakitanga, Strand 2: Belonging | Mana whenua (p. 30) guides kaiako to encourage a sense of kaitiakitanga as they support learners to engage with Papatūānuku (the Earth Mother), encourage an understanding of kaitiakitanga, and provide children with regular opportunities to connect with the natural environment. The questions for kaiako guide their reflection on their kaitiakitanga-focussed pedagogies and practices. Kaiako are required to reflect upon the kind of opportunities they might offer children to respect and care for Papatūānuku, learn more about the local area, deepen relationships with, and become kaitiaki of, their place.

Strand 5: Exploration | Mana aotūroa (MoE, 2017, p. 46) also refers to the teacher's role in the development of kaitiakitanga. Kaiako are expected to support children in making sense of the world through exploration, be conscious of diverse ways of being and showing respect for the environment, as they learn more about kaitiakitanga in te ao Māori (the Māori world). The reflective questions for kaiako include an exploration of children's connections with the natural world with respect to Māori values and through respect for diverse cultural beliefs and worldviews.

Additionally, as detailed in Section 2.5.1, Te Kete Ipurangi (TKI), the *Te Whāriki* online portal (MoE, 2023b), provides professional learning and development resources and teaching strategies for early childhood kaiako. *Te Whāriki online* includes expectations and suggestions for kaiako in supporting Environmental Education for Sustainability (EEfS). The Belonging | Mana whenua Strand, Te toitūtanga Sustainability or EEfS section includes a description of the role of kaiako. Some of the ways in which kaiako are expected to support EEfS effectively is through place-based education highlighting the local context; an understanding of mātauranga Māori; identification of cross-curricula domain knowledge in EEfS, and increased knowledge of, and participation in, environmental and climate change education, policy, and practice.

This significant role that kaiako play in Environmental and Sustainability Education, as outlined in *Te Whāriki* and *Te Whāriki online*, requires input and support to enable development of the requisite knowledge, skills, and competencies. Environmental and Sustainability Education requires kaiako to develop complex knowledges and practices (Ritchie et al., 2010). In order to become place-responsive in their environmental pedagogy and practice, kaiako also need to become familiar with the local context and natural environment from traditional Māori and non-Māori perspectives (Kelly et al., 2013). Studies (see for example, Alcock & Ritchie, 2018; Kelly et al., 2013) have shown that kaiako often require support to make clear and meaningful pedagogical connections between the environmental and sustainability features of the ECE curriculum framework and their related pedagogy and practice.

Therefore, kaiako need to self-reflect upon their practice to review their pedagogical roles in relation to nature-based education (Kelly et al., 2013). They also require opportunities to develop skills that will enable them to think, act, and engage critically with issues of ecological sustainability within the context of Aotearoa New Zealand (Ritchie et al., 2010).

In Aotearoa New Zealand, *Te Whāriki* includes pertinent reflective questions that ECE kaiako might need to consider in order to facilitate children's inter-relationship with nature. However, this process begins with the kaiako themselves exploring their own identification and connectedness with the natural environment. Ritchie (2013a, p. 115) developed a set of such questions that can guide kaiako in the journey of reflection and exploration of environmental and sustainability beliefs and practices within ECE:

- In what ways do I/we personally experience a sense of being connected to nature? How important is it to me/us? How can I/we bring the same connectedness to nature into daily pedagogical practices in the early childhood setting?
- What sustainability practices am I/we currently aware of? What more could I/we introduce into the daily life at home and in early childhood care and education settings?
- How well am I/are we informed of Kaupapa Māori (a Māori approach that assumes the normalcy of being Māori) constructs in relation to caring for Papatūānuku and Ranginui? How can I/we foster relationships within our communities, whereby we can learn more from tangata whenua (Indigenous Māori people of the land) about the specific stories and conservation practices in the area?
- How can I/we find out more about local community groups committed to sustainability activism?

These questions enable kaiako to reflect upon their own environmental connections from a te ao Māori perspective which could then enable the facilitation of children's environment identity development. For my research, the first reflection question holds particular significance. The question addresses teachers' reflection upon their connection to the natural world, the significance of these connections and how these connections influence their ECE teaching philosophy and practice. These are the tenets within my research questions, where I aimed to interpret teachers' perspectives of their sense of self in relation to the natural environment, how culture influences these environmental identities, and how this influences their teaching. Some of these complexities are briefly highlighted in this next section.

2.5.5. Teachers, Culture, Early Childhood Environmental and Sustainability Education

Globally, there is increasing recognition of, and discussion about, the interrelatedness and interdependence of environmental and cultural dimensions of sustainability (Miller, 2014). The Gothenburg Recommendations on Education for Sustainable Development identified the 'promotion of intercultural understanding and recognition of interdependency' as one of the primary characteristics of effective ESD pedagogy in ECE (Samuelsson, 2016, p. 13). Interdependence can be interpreted and included in the curriculum in several ways including the interrelationship between children, between children and teachers, and between people and the natural environment.

Given the increasingly multicultural nature of ECE settings globally, it becomes important to encourage and include culturally-diverse worldviews within the curriculum and teaching practice. Reflective practices that facilitate culturally-centred introspection and self-review for teachers is a significant step in this process. Educators who are committed to reflective practices can provide even greater support for children to act as change agents (Davis, 2009; Davis, 2010) around the multiple dimensions of environment and sustainability. The more aware teachers are of their own cultural identities and influences, the more effectively they can support the cultural identities of children from diverse ethnic and cultural backgrounds. Additionally, Environmental and Sustainability Education must be planned and implemented in accordance with the cultural context (see for example, Alcock & Ritchie, 2018; Ritchie et al., 2010). This tailoring of education to the context is even more significant in contexts where early childhood programmes and settings include multi-ethnic families in bicultural or monocultural settings, such as in the case of Aotearoa New Zealand. The *Te Whāriki* authors specifically lay down expectations for teachers to support and guide children's learning and development, by taking into account the integral and interconnected aspects of identity, culture, and language (MoE, 2017, p. 12). For migrant teachers, their diverse cultural orientations become significant factors in a multicultural ECE context where an additional dimension of their home and host identities and cultures exists.

Section 2.5 has discussed the role of teachers in Environmental and Sustainability Education and the development of kaitiakitanga with reference to *Te Whāriki*. The curriculum framework presents both opportunities and challenges for this role. In *Te Whāriki* and *Te Whāriki* online, teachers' roles and responsibilities in ECE Environmental and Sustainability Education are outlined. With this background on Environmental and Sustainability Education and the role of teachers and the significance of culture within, I now explore the notion of environmental identity in the global and local context.

2.6. Environmental Identity

The human-environment relationship has been studied through the construct of an environmental identity. This section begins with a brief introduction to the human-environment relationship as the rationale for an environmental identity. The next subsection includes a detailed discussion of the various conceptualisations of environmental identity in literature reviewed for this research. These conceptualisations are followed by a description of the role and impact of environmental identity in Environmental and Sustainability Education

with a focus on ECE. The section concludes with a review of relevant literature on teachers and environmental identity.

2.6.1. Human-Environment Relationship

Naess (1994, p. 146) clearly and precisely summarised how and why there emerged a critical need for revisiting human-earth relationships in the Anthropocene:

As long as there were moderate number of humans with moderate means to interfere with the richness and diversity of life on Earth, it did not matter much for the planet how they conceived their relation to the Earth. But now, with an enormous number of people, and a practically infinite capacity for destruction, how they feel about nature is of great importance.

Social-economic-environmental sustainability, which came to be the hallmark of Education for Sustainable Development (ESD), was recognised as a by-product of a respectful and reciprocal human-environment relationship. The United Nations scientific report blueprint for tackling climate change, biodiversity loss and pollution within the framework of the Sustainable Development Goals (UNEP, 2021, p. 101) acknowledged that “Transforming humankind’s relationship with nature is the key to a sustainable future”. As part of this relationship, learning *in, about, for* and *with* the natural environment facilitates a better understanding of, and appreciation for, nature which in turn leads to the development of an ethics of care and concern for the natural world (Orr, 2004). As has become evident over the past several centuries, humans will only care for all that is connected to them, their wellbeing, and their progress (as perceived in the modern world). Thus, only once humans make those connections between their identity and the environment, will care for it follow.

2.6.2. What is Environmental Identity?

Nature and identity by themselves are constructs that have been defined in varied ways, making environmental identity a complex idea with no one rigid definition. In general, environmental identity focuses on an individual’s or group’s connections with and attitudes towards the natural environment. It is concerned with who we are in relation to the natural world. It has several definitions based on a variety of disciplinary and theoretical perspectives (Clayton, 2003).

Whilst the various conceptualisations of environmental identity differ in nomenclature and elements of emphasis, three common themes are evident in the research literature. First, there is widespread consensus on the definition and understanding of environmental identity as a sense of self in relation to the natural environment. As a psychosocial construct in relation to the natural environment, environmental identity has been defined and studied in various ways. It has been termed: environmental identity (Clayton, 2003; Clayton, 2012; Weigert, 2008); environment identity (Stets & Biga, 2003); ecological identity (Thomashow, 1995); environmental self (Cantrill, 1998); and ecological self (Bragg, 1996; Naess, 1994). Researchers ascribe their own meanings to these terms. For instance, it could be described as the way individuals view themselves or extend their sense of self in relation to the natural environment (Thomashow, 1995). Alternatively, in their environmental identity model, Stets and Biga (2003) conceptualise environmental identity as a person's identity or the meaning one makes of the self in relation to the environment.

An environmental identity encompasses an individual's "knowledge of, reverence for, and actions towards the environment" (Broom, 2017, p. 34). Just like all other identities of a person, it is a product and a force (Clayton, 2003). It is a product in the form of a set of beliefs about the self in relation to the natural environment, that in turn becomes a force or the motivation for particular ways of interacting with the world (Clayton, 2003). Thus, environmental identity is influenced by experiences and in turn influences behaviour and action. It is borne out of emotionally significant experiences and connections that affect the sense of self in relation to the environment (Clayton, 2003). Studies have shown how environmental values and attitudes have been incorporated into identity because of experiences in specific contexts. For instance, visiting or working at zoos and aquariums created a sense of shared identity with animals and increased connection with nature (Clayton et al., 2009; Ernst, 2018; Schultz & Tabanico, 2007); and gardening provided opportunities to spend time in and appreciate nature (Clayton, 2007; Kiesling & Manning, 2010). Similarly, according to Thomashow (1995, p. 3), an ecological identity refers to "all the different ways people construe themselves in relationship to the earth as manifested in personality, values, actions, and sense of self". People understand and interpret themselves in relation to the Earth and environment in different and unique ways. They develop this understanding in terms of their identities, self, values, and behaviour with reference to the environment. This process is the basis for their environmental identities. Thus, an individual's concern with the natural

environment is fundamentally linked to the extent to which they view themselves as part of the environment (Schultz, 2000).

A healthy environmental identity denotes a person's heightened awareness of self as being part of the natural environment (Wang, 2017; Wilson, 2018) and impacts one's personal, social, and political behaviour significantly (Clayton, 2003). In contrast to egocentric thought, it is characterised by eco-centric thought where everything in the world is seen in relation to, rather than separate from each other (Wilson, 2018). Egocentric thought is rooted in an anthropocentric view that places humans at the centre of the planet's existence, whereas eco-centric thought is characterised by a non-dual relationship between the self and the natural world (Elliott & Young, 2016; Wang, 2017). It enables us to think of the world's needs as aligned rather than those of humans as paramount to be fulfilled by other beings and the environment only as resources. Similarly, a decreased perception of human-nature separation will bring about an increase in human-nature connectedness. A high degree of relatedness and connection can result in a strong and positive sense of self. This relatedness could be a sense of unity with the other or as part of the natural environment, also understood as spirituality or deep ecology (Naess, 2008; Naess & Jickling, 2000) where humans and the environment are understood as a relational, intrinsically connected entity rather than a segregated image. The extent to which a person identifies themselves as part of the natural environment determines whether their description of it includes elements such as themselves, nature, and man-made environment (Blatt, 2013). The more one identifies as being one with the natural environment, the more likely they are to describe all the elements as one, and the more one sees themselves as separate from it, the more likely they are to describe selected elements separately.

A second theme is that an environmental identity is the confluence of personal and environmental interests and can be individual and collective in nature. Thus, environmental identity is the way in which individuals connect their personal identities to nature. Similarly, the ecological self as described by Naess (1994) is a sense of self that extends beyond a personal self to the natural world where the interests of both are aligned. It is a deepened sense of self based on the understanding that a destruction of the natural environment is in essence a destruction of the self. Wilson (1996) described the ecological self as denoting a person's connections with and attitudes towards the natural environment or in other words, the way an individual extends their sense of self in relation to the natural environment. An environmental identity also includes a "person's connection to the earth, perceptions of the

ecosystem, and direct experiences of nature” (Thomashow, 1995, p. 3). Humans construct their environmental identity with reference to their being in the environment and their relationship with it. Pelo (2009) takes a distinctive view and focusses on a sense of place as an integral component of environmental identity by defining it as beginning with a sense of identification with and belonging in a place, extending towards a broader connection with the natural environment as a whole.

An environmental identity has also been considered a reflection of the extent to which people believe environmentalism to be a part of who they are (Gatersleben et al., 2014). For instance, Clayton’s (2012) review of studies that explored identity as a concept in relation to the natural environment, found that identity was recognised as a crucial psychological construct relevant to environmental issues. Along the same lines, Chawla (2009) described an environmental identity as the extent to which children define themselves as part of nature and consider caring for nature as part of their role in the world. Accordingly, only when environmental affinity is part of one’s identity can it bring about care and action for the environment.

In terms of individual and collective identities, it is argued that people have multiple identities, personal/individual and social/collective, that vary in salience and significance in a lifetime and across sociocultural contexts (Clayton, 2003; Clayton, 2012). These identities become more or less prominent depending upon the immediate context at the time and our past experiences (Clayton, 2003). Environmental identity too can be considered in terms of an individual identity, and a collective or group identity, where the human-environment relationship forms a part of both these identities (Clayton, 2003). It exists on multiple levels and can be influenced by education through a directing of environmental attitudes and behaviour.

Sauvé (2009) makes a direct and significant connection between this dual nature of environmental identity to Environmental and Sustainability Education. The ultimate goal of Environmental and Sustainability Education can be understood as realising our task of being as humans, in relationship with our *oïkos*, the connections between the human and the more-than-human world (Sauvé, 2009), in other words, our environmental identity. The term "ecosystem" is derived from the Greek word "*oïkos*" which means a "house", a dwelling place with the inhabitants living together and interacting with each other in some definite ways, or our shared ecological spaces of being. Within the context of environment and sustainability,

oïkos signifies our being in a shared environmental home defined by our interactions and interconnectedness. This 'being', or identity is inseparable from the 'here' or the place, as both are affected and transformed by the other. Since all inhabitants of the planet dwell together, live together in a shared ecological space, Environmental and Sustainability Education is in a sense about "being here together" (Sauvé, 2009, p. 326). The 'together' implies various aspects of being - being here together with all inhabitants of the planet, the social aspect of being here with all humans to take collective social action for our shared place, and a critical engagement aspect that requires a reconstruction of our identities and responsibilities (Berryman & Sauvé, 2016; Payne, 2009; Sauvé, 2009, 2017).

In the third and final theme, environmental identity is mediated by personal and social experiences. According to Cantrill (1998), an environmental identity is one's beliefs about their association with the natural world mediated by personal history. Similarly, Weigert (2008) adds a social element to environmental identity by defining it as an understanding of oneself in relation to the natural environment, as a result of social experiences. Stapleton (2015) defined environmental identity as a facet of one's complete identity that is foregrounded with varying focus at various times. It is considered a flexible and dynamic social construct that is constantly recreated through social interactions. This environmental self, expands and matures over time depending upon contextual factors such as place, socioeconomic status, cultural background, ethnic group, social values, age, and educational experiences (Wilson, 2011). Section 2.7. includes a detailed discussion of environmental identity as a sociocultural construct mediated by culture, context, and experiences, specifically with reference to my research.

In summary, a comprehensive definition of environmental identity by Clayton (2003) brings together the various themes discussed above. According to Clayton, an environmental identity is part of how people form their self-concept, "a sense of connection to some part of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that affects the ways in which we perceive and act towards the world; a belief that the environment is important to us and an important part of who we are" (pp. 45-46). This definition recognises the dynamic nature and multiple meanings of environmental identity. For clarity and consistency in this thesis, I henceforth use the term environmental identity as an umbrella term for the various nomenclature and definitions of this concept, unless otherwise specified.

Following this brief overview of the various definitions and conceptualisations of environmental identity and its salient features, I now consider the significance of environmental identity as recognised globally and within the Aotearoa New Zealand context. Hence my question – why is environmental identity important?

2.6.3. Why is Environmental Identity important?

In terms of research globally, identity had been primarily perceived and studied in relation to other humans and the man-made environment, with little attention to the natural environment and more-than-human world. The deep connections between identity, the natural environment, and Environmental and Sustainability Education were not a highly researched area up until the early 2000s (Clayton & Opatow, 2003; Payne, 2001). There was then a call for broader conceptualisations of identity that would include “how people see themselves in the context of nature, how people see animate and inanimate aspects of the natural world, how people relate to the natural world as a whole, and how people relate to each other in the context of larger environmental issues” (Clayton & Opatow, 2003, p. 6). Thus, with a rapidly growing call for environmental action, there was also an increased focus on researching this subject over the next decade and a half (Stapleton, 2015).

Specifically, within the context of Aotearoa New Zealand, environmental identity has become a feature of various national level research and policy documents. The natural environment has been officially recognised and acknowledged as an integral part of the Aotearoa New Zealand identity (MfE & Stats NZ, 2022). An Aotearoa New Zealand identity refers to a general national identity that is recognised but not necessarily held by everyone living in the country. Various elements of the identity are shared by people across the nation. Connections to land, forests, beaches, and waterways are viewed as central to people’s national and cultural identity as inhabitants of the country. The interdependence of the natural environment and people is also given due consideration in terms of research programmes. The Ministry for the Environment along with Manaaki Whenua Landcare Research (2021) have been researching the fundamental relationship between human wellbeing and nature. The research recognises that nature provides many personal and subjective benefits for the human inhabitants of this country. The study attempts to quantify the connection between humans and nature for a tangible understanding and evidence-based decision making. Similarly,

Environmental Health Intelligence New Zealand (2023) monitors population data alongside environmental data to study the interaction between the two and the impact of each on the other. Focussing on the ECE context, the natural environment has been researched from various perspectives that implicitly include components of environmental identity for children and teachers, even though it might not have been termed so. Section 2.4. provides a detailed review of these studies.

With the gradual increase in focus on environmental identity, its significance has been studied and highlighted in literature from varied perspectives. First, an environmental identity enables a deeper understanding of one's relationship with the natural environment, in turn influencing one's attitudes and behaviours. Research has shown that there are several significant impacts of environmental identity on an individual's sense of self and being where there appears to be a strong correlation between environmental identity and the tendency to engage in environmental behaviour (Clayton, 2003; Thomashow, 1995). Another significant influence of an environmental identity is the enhanced ability to take the perspective of and empathise with the natural environment or the more-than-human (Humphreys & Blenkinsop, 2018; Lithoxidou et al., 2017). Environmental identities have also been shown to have strong emotional consequences with a direct correlation to affective well-being (Hinds & Sparks, 2009). Hence, it has been argued that a sense of care and stewardship for the natural world is more lasting and transformative if it affects the individual or is a part of their identity, a part of who they are. Pro-environmental and sustainability behaviour such as energy conservation, recycling, or reducing food waste is extremely important, yet not enough to make up for decades of environmental degradation and human-environment disconnect (Pelo, 2014b). There is a need to go beyond behavioural changes, to a much deeper level of nature-human connectedness and affinity that can primarily be achieved through realigning one's core or identity to the environment. The way we define this core, ourselves, others, and nature determines the personal and emotional element of the human-environment connection (Clayton & Opatow, 2003). It is critical to understand the interdependence between human and other beings in the natural environment (Raus & Värri, 2017).

Second, how one orients oneself to the natural world can also enable an understanding of how global environmental concerns become personal and immediate concerns for the individual. In turn, an environmental identity determines a response corresponding with one's sense of self (Clayton & Opatow, 2003). A strong place-based identity or a strong identification with a

specific place motivates action to protect the natural environment (Clayton, 2012). This motivation may not be strong when the issue appears more distant than personal or more global than local, creating a disconnect between the person and the environmental concern. Similarly, from an economic sustainability perspective, it becomes relevant for group/collective identities to share and regulate the use of natural resources (James et al., 2008), and that might bring about shared environmental concerns and motivation to act for the environment within nations and globally (Buchan et al., 2011).

Third, environmental identity directs environmental and sustainability actions. In a discussion of the historical roots of the developing environmental crisis in the 1960's, historian Lynn White, Jr. (1967 as cited in Dwivedi, 1993) stated that people's action(s) on their environment depend upon their view of themselves in relation to nature. There is evidence to support the notion that people's environmental worldview determines their personality and actions (Thomashow, 1995). Research shows that identity and environment have a bidirectional relationship where one's relationship with the natural environment constructs one's identity and in turn influences their behaviour towards the environment (Clayton, 2012). Researchers also argue that stronger connections with one's environmental identity result in environmental and sustainability-oriented decisions, behaviour, and actions (Raus & Värri, 2017). Hence, positive environmental behaviours/attitudes can be brought about by the formation of an environmental identity (Stets & Biga, 2003). Some studies have found evidence of the relationship between environmental identity, values, and behaviour, where moral values often determine people's environmental behaviour (Bolderdijk et al., 2012 as cited in Clayton, 2012). An identity also impacts behaviour in the way that people are motivated to behave in a particular way if that behaviour is socially and culturally-valued (Clayton, 2012).

Within the Aotearoa New Zealand context, the natural environment is a significant component of the national identity. A crucial and unique feature of the nation's Indigenous worldviews of te ao Māori is the spiritual connection between humans and the natural environment (Ritchie et al., 2015), a belief that is based on intrinsic mutual respect and sustainability. This spiritual interconnectedness between humans and the environment or the interdependence of human identity and the environment are akin to the idea of an environmental identity. This interdependent identity could form the nucleus of environment

and sustainability policy, process, and practice at various levels of governance and education. When people recognise, acknowledge, and identify with these connections, they could be motivated to act for the environment and its sustainability. The nation's identification and spiritual connectedness with the natural environment is also reflected in the early childhood curriculum document *Te Whāriki* through notions of kaitiakitanga, belonging and a sense of place (MoE, 2017). The framework reflects the value associated with environment and sustainability and teachers are expected to facilitate these values among children. For migrant teachers, understanding and encouraging this socially and culturally-valued behaviour may involve transitions and reorientations as they navigate between their home and host cultural contexts, where the natural environment may hold different values.

A better understanding of identity and how it affects behaviour towards the natural world has encouraging research implications and practical implications (Clayton & Opatow, 2003). As a motivator, an environmental identity has a significant impact on the personal and social behaviour of an individual (Clayton, 2003; Clayton, 2012). A better understanding of what makes people passionate about the environment can facilitate positive environmental behaviour. Given the current dire situation we face as a planet, this passion-behaviour connection presents yet another rationale for examining environmental identity as a product and a force. An understanding and practising of a connection between the self and nature may lead to a transformation of worldviews, values, and behaviours. Research has shown that early childhood is a critical period when these connections can be made and encouraged to affect lifelong pro-environmental attitudes and behaviour (see for example Samuelsson & Kaga, 2008; Wals & Benavot, 2017; Wilson, 2018).

Thus, in order to address the current environmental concerns, there is also a need to rebuild our sense of “being-in-the-world” through our environmental identities (Sauvé, 2017, p. 116). For this purpose, it is imperative to understand the ‘ises’ of environmental identity (one’s environmental identity at present) before the ‘oughts’ (a desirable positive environmental identity or the end goal) can be addressed (Payne, 2001, p. 71). Within Environmental and Sustainability Education, the ‘oughts’ signify the kind of environmental identities we believe learners should develop for environmentally-responsible behaviour. These ‘oughts’ of the future make assumptions about the ‘ises’ or environmental identities of the learners in the present. Only once we reflect upon and understand our current environmental identity can we

work towards a positive and desirable environmental identity. Without knowing who we are in relation to the natural world we cannot begin to work towards who we want to be in relation to the natural environment. Who individuals are in their relationship to others, in this case the natural environment, is the first step in attempting to work on who they can be or ought to be in this relationship. There is a need to study and address one's 'is' or current environmental identity as an individual and a learner before researching and planning for the 'ought' or who they ought to be, which is viewed as one of the goals of Environmental and Sustainability Education. Both the 'ises' and the 'oughts' of environmental identity can be explored and addressed through Environmental and Sustainability Education. Following from this idea, the next section looks at the various perspectives on the relationship between environmental identity and Environmental and Sustainability Education.

2.6.4. Environmental Identity in Environmental and Sustainability Education

Environmental and Sustainability Education is concerned with understanding our relationships with ourselves, with other humans, but most importantly with oïkos, our common home or place of being that we share with more-than-human co-habitants. It is instrumental in shaping our individual and collective environmental identity or way of being-in-the-world that in turn determines our commitment towards our oïkos or shared ecological spaces of being (Sauvé, 2017).

To be effective, Environmental and Sustainability Education needs to integrate the three domains of knowledge including content, process, and reflection. Environmental identity is a key component of the reflection domain. It is significant as "it is the personal introspection that drive's one's commitment to environmentalism" (Thomashow, 1995, p. 5). Along with personal growth and awareness, the exploration of environmental identity is a framework for environmental citizenship and educational basis for reflective environmental practice.

The connections between environmental identity and Environmental and Sustainability Education have been defined and conceptualised from diverse perspectives, some generic and some focussing on a particular aspect of the relationship. Sauvé's (1996, 2002) domains of Environmental Education represent the confluence of environmental identity, in the natural world and for the sociocultural context of being. Alternatively, in his idea of environmental literacy, Orr (1992) highlights challenges inherent in Western notions of Environmental and Sustainability Education and how these can be overcome. On the other hand, a sense of place

and the sociocultural context of that place are considered central to Environmental and Sustainability Education within the place-based or place-conscious educational approach. Proponents of the role of significant life experiences (such as Chawla, 2009, 2015; Tanner, 1980) emphasise the importance of nature related experiences as the driving force behind an individual's lifelong connections with nature or environmental identity and stewardship. These conceptual ideas are explored next.

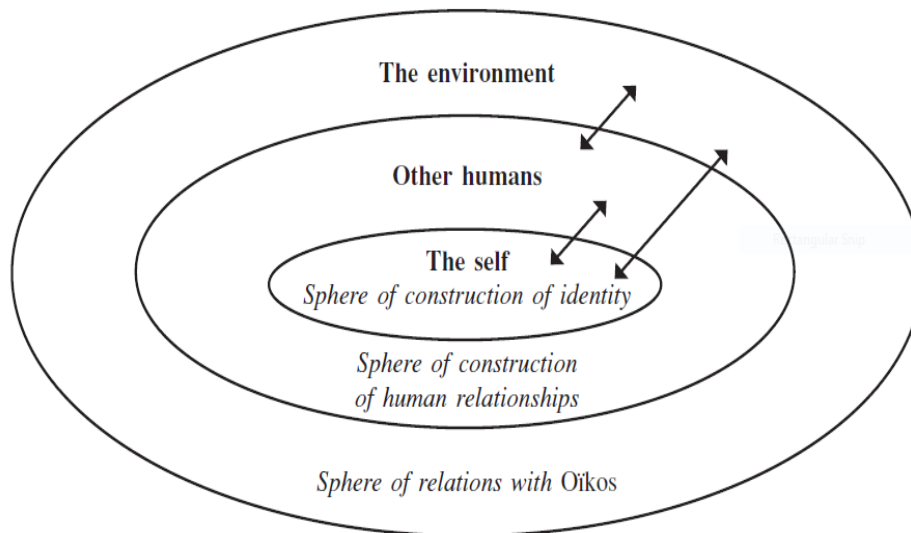
Sauvé's domains of Environmental Education

According to Sauvé (1996, 2002), Environmental and Sustainability Education is about our relationships with the environment, that is primarily based on our conceptions of the environment as determined by culture and context. Sociocultural contexts depict diverse but interlinked and complementary ways of viewing the environment or what Sauvé (1996, 2002) calls the paradigmatic conceptions of the environment: (1) environment as nature to be appreciated, respected, preserved - exploring the close links between identity, culture, and nature; realising our environmental identity or sense of self in relation to the environment; recognising the links between biological and cultural diversity or "bio-cultural" diversity (Sauvé, 2002, p. 1); (2) environment as a resource to be managed; (3) environment as a problem to be solved; (4) environment as a place to live, to know and learn about, to plan for, to take care of; (5) environment as the whole biosphere in which we all live together into the future; and (6) environment as a community project in which to get actively involved. It is important for educators to be aware of these dimensions and the ways in which the environment is viewed, understood, and connected with in various ways.

One of the goals of Environmental and Sustainability Education is to facilitate the development of an environmental identity, a sense of being and belonging in the shared world. According to Sauvé's (2009) ecological vision of human development, the environment is not just a context that includes manageable resources, but rather includes "all levels of being and manifestation" (Sauvé, 2009, p. 330). Environmental identity development takes place through personal and social development of the self in relation to other humans and the environment. Sauvé's model of environmental identity and education (see Figure 2.2) represents the three interrelated spheres of personal and social development (psychosphere, sociosphere, ecosphere). Although Environmental Education corresponds to the ecosphere, it cannot be separated from the other two spheres. The model represents the relationships

between the self and the environment as a basis for Environmental Education. It is the construction of an environmental self: a self that fosters a sense of belonging and commitment to our oïkos, our common home, our house of life, or shared ecological spaces of being (Sauvé, 2009, 2017).

Figure 2.2 *Three Interrelated Spheres of Personal and Social Development*



Note: Reprinted from “Being here together”, by L. Sauvé, in M. McKenzie, P. Hart, H. Bai, & B. Jickling (Eds.), *Fields of green: Restorying culture, environment, and education* (p. 330), 2009, Hampton Press Inc. Copyright 2009 by Hampton Press Inc.

The three spheres include the psychosphere, the sociosphere and the ecosphere.

1. Psychosphere

The sphere of the self consists of our connections with and learning about the world and is closely related to our identity construction. It is the locus of identity construction where one learns to be and define oneself in relationships with the other two spheres. This identity construction is inseparable from, and interdependent upon, the other two spheres including relationship with the environment and the sociocultural context. Identity is constructed within a sociocultural context (sociosphere) and through interaction with places and other life forms (ecosphere) where each sphere influences the other. Environmental Education then becomes a tool to help develop an understanding of these various dimensions of the self and of how they shape our relationship with a place of being or the natural environment.

2. Sociosphere

The sociosphere includes our relationships with other humans, both individuals and groups, within the broader environment. It is the site for developing a sense of belonging and a sense of responsibility towards other beings. It is within this sphere that we develop an awareness about our cultural context which in turn determines how we relate to the environment. Our interpersonal and social relationships within a reference culture shape our relationship with the environment. It is also within this sociosphere that we experience difficulties and advantages of living and working with others. Successful negotiations of these difficulties and advantages results in an increased awareness of our reference culture and a sense of belonging. This interface between the sociosphere and the ecosphere becomes the site of environmental citizenship where one learns about ideas such as peace, rights, intercultural and international solidarity, which Sauvé (2009, p. 332) describes as “being here together”.

3. Ecosphere

The ecosphere is comprised of the biophysical elements of the environment and is specific to our relationship with the *oikos* or our shared ecological place of being. It is also the specific domain of Environmental Education. According to Sauvé (2009, 2017), the aim of Environmental Education is not just education for the environment but more importantly education about our relationship to the environment. This environmental sphere interacts closely with our sociocultural sphere to determine our connections with the human and the more-than-human world. It is the specific domain of Environmental Education that comprises of a threefold eco-education:

- Eco-logical education: learning to know about the diverse, rich, and complex shared web in our house of life.
- Eco-nomic education: learning to recognise the ethical, political, and socioeconomic dimensions of sharing the world with other beings to reshape our individual and collective relations to the environment.
- Eco-sophic education: learning about the ecological meaning of our “being here together” (Sauvé, 2009, p. 333), a personal and cultural vision of the world (Sauvé, 2017), developing an ethical sense of responsibility to live *with* the environment.

Through the three spheres of development, Environmental and Sustainability Education facilitates the exploration and definition of the self or identity and how that shapes our relationship with the environment. In terms of the relationship between the self and the

environment, the juncture of the psychosphere and the ecosphere become the site for environmental identity development, which is mediated by the sociosphere (Sauvé, 2009).

Sauvé (2017) also highlights the need for a critical Environmental and Sustainability Education where global agendas must be understood and adopted, based on the sociocultural context. Each place must consider their culturally-specific environmental and sustainability agendas and look inwards for inspirational alternate theoretical and practical educational ideas including valuable Indigenous knowledges and practises. These fresh perspectives could also offer valuable insights into diverse conceptions of educator identities within the context of Environmental and Sustainability Education (Sauvé, 2017).

If Environmental and Sustainability Education is concerned with our “human being in the world” (Sauvé, 2017, p. 117), it must incorporate our interaction with the *oïkos* or the environment. In other words, an environmental identity, or our sense of being in the world in relation to the natural environment, is a critical component of Environmental and Sustainability Education. It requires defining and redefining ourselves through an environmental identity. The first step in this transformative process would be a deep exploration and understanding of the environmental self, for learners and teachers.

Several similar notions of a human identity that is interconnected with the environmental and sociocultural context are evident in ancient Indian philosophies and Māori worldviews. Connections between these ancient cultures and Sauvé’s (2017) ecological vision of human development with reference to ideas of interdependent human-environment identities is discussed in detail in Section 2.8.3.

Environmental Literacy

Environmental sustainability can only be achieved if the human way of life is in sync with nature’s way of life. Environmental literacy also referred to as ecological literacy is an understanding of the principles of organisation that facilitate this natural sync. It enables an awareness of how the natural world is organised through systems and the application of these understandings in daily life (Capra, 2007). Therefore, environmental literacy is the knowledge and comprehension of the interrelatedness of all life systems and a sense of stewardship with respect to the natural environment (Orr, 1992). Equally important is a sense of wonder and delight at the beauty and bounty of nature. More recently, environmental literacy has been

defined as the cognitive abilities and skills related to environmental understandings of natural processes and the interdependence of human life and nature and motivation to act (Eames et al., 2018; Hollweg, 2011).

As a pioneer in the idea of environmental literacy, Orr (1992) proposed that the true nature of environmental literacy was challenging, especially for Western thought and culture. He attributed these hurdles to several elements of the Western worldview and lifestyle at the time, which are applicable even today. To begin with, environmental literacy requires broad and deep thinking that facilitates an understanding of the web of life and the interconnectedness of life systems. In contrast, Western thought is compartmentalised, where the knowledge is specialised and siloed, which can lead to one's perspective and understanding of the natural world being the same. Next, education has come to be viewed and practised as an indoor pursuit. It has become an activity that is usually removed from its natural state and instead demands the building of knowledge and connections with the natural world while being separated from it. In addition, there is a decline in the aesthetic appreciation of and respect for the natural world. The connections between people and land are lost where the environment is compromised for modern developments. Finally, humans do not want to see the world for what we have made it. Taking action requires questioning our comfort zones and threatens our modern way of life, which is not a challenge most people are ready to take on. We choose not to see all that makes us uncomfortable and disrupts our current existence (Orr, 1992).

According to Orr (1992) the goal of environmental literacy is a revival of the idea of citizenship and community. The concept of citizenship needs to extend beyond that of the immediate physical space and nation to a planetwide community of humans and all living beings. Orr (1992) goes on to highlight some of the ways in which this planetary citizenship can be facilitated. First, living in direct contact with the natural environment rather than separate from it is crucial to developing a sense of place and belonging, aspects that are integral to environmental literacy, environmental identity, and a planetary citizenship. Second, children need a mentor or role model, such as a teacher, to nurture their kinship towards the natural environment. The role of an adult or teacher (discussed in Section 2.5.2) is another feature of environmental literacy development, where children's environmental identity is influenced by significant adults within their context. Third, experiences in the natural environment at an early age appear to play a significant role in determining lifelong

environmental connections and stewardship, a rationale that is the crux of the significant life experiences perspective discussed next.

Significant Life Experiences

The premise and origin of significant life experiences (SLE) research was that individuals who showed passion towards environmental protection and stewardship were found to credit their environmental inclination to time spent in nature during childhood (Tanner, 1980, 1998b). Tanner (1980) wrote the seminal paper in this field that led to numerous studies thereafter (Chawla, 2009, 2015; Palmer, 1993). In this perspective, childhood experiences of the natural environment were recognised as an important factor in the development of environmental concerns and stewardship. This school of thought proposed that it would benefit environmental educators to know the kinds of significant learning and personal experiences that facilitate the development of environmental citizenship and environmentally positive behaviour with a strong environmental identity, in order to replicate these experiences within Environmental and Sustainability Education (Tanner, 1980, 1998a; Williams & Chawla, 2016). The significant life experience approach primarily involves, but is not restricted to, retrospective autobiographical and biographical examination of the early years of the lives of those who are environmentally active and responsible individuals or professionals. This approach enables a study of the participant's life experiences, especially in their childhood, that they consider significant in influencing their environmental identities and hence inclination towards environmental activism or professions.

Early SLE research found evidence that children's and young people's experiences in the natural environment were a good predictor of their future environmentally inclined behaviours and life choices (Palmer, 1993; Tanner, 1980). Witnessing the loss of their surrounding natural habitat and open spaces from childhood to adulthood was a trigger for their positive environmental behaviour and actions. Thus, it was established that individuals who feel a sense of connectedness with the natural environment and develop a sense of kinship towards it have usually had positive experiences in the natural environment in their childhood years (Orr, 1992).

SLE studies with environmentally active and involved individuals identify influential adults such as parents and teachers in their childhood as role models for inspiring their sense of

appreciation and care for nature (D'Amore & Chawla, 2020). It appeared to be the environmental inclination, interest and involvement of the significant adults that inculcated a sense of environmental stewardship among the children as adults. These role models such as family members and teachers appeared to have had influential personality traits and characteristics that provided intrinsic and extrinsic motivation for pro-environmental attitudes, behaviour, and skills.

Significant life experiences have been found to be important factors in teachers' environmental identity development (Ernst, 2014). Teachers who have had rich environmental experiences in their childhoods are likely to recognise the importance of, and encourage, the same for children in the ECE context, while those who have not, may lack the knowledge or experience to do so with children. On the other hand, despite rich childhood environmental experiences and an inclination to incorporate the same into the ECE context, teachers often face barriers that make this goal unachievable (Ernst, 2014). In her investigation of perceived barriers to the use of natural settings with 46 early childhood teachers in North America, Ernst (2014) found that although the teachers recognised the value of experiences in nature for children's physical, cognitive, and social development, they faced barriers in including these beliefs in their practise. The lack of walking access to a natural outdoor setting was the most common barrier. Other barriers stated by teachers included a lack of time, winter weather, safety concerns, and lack of extra supervision. Thus, it is important to explore and consider ECE teachers' beliefs, practices, and most importantly perceived barriers related to Environmental and Sustainability Education.

Therefore, the SLE perspective is based on the premise and evidence that positive early life experiences with the natural environment are good predictors of lifelong or future environmentally inclined beliefs, attitudes, and actions. Significant adults such as parents and teachers are vital role models and motivators of a lifelong positive environmental identity. Early and significant life experiences are also influential factors for ECE teachers who are environmentally inclined in their philosophy and practice. However, other barriers might exist that hinder them from including environmental and sustainability components and experiences into the early learning curriculum and their teaching practice.

Place-based/Place-conscious Education

“No one lives in the world in general” (Geertz, 1996, p. 262). Humans and more-than-humans live embodied and emplaced. Places are the centre of our life experiences and place-consciousness shapes our identities and relationships with each other and the natural world (Greenwood, 2012). On the other hand, our identities and relationships with the natural world also determine our sense of place (Adams et al., 2017). All life is shaped by the place and in turn the place is shaped by the life that inhabits it.

A place identity refers to aspects of identity that are connected to feelings about a particular place or a sense of self in relation to a place (Clayton & Myers, 2015). A significant feature of a place identity or place-based identity is memories about a relevant place. This identity is often linked to the notion of place attachment that includes aspects of people’s attachment to a place (Korpela, 2002). Places shape people, their identities and experiences, where culture, place, and identity are interconnected (Greenwood, 2012).

However, often familiarity with a place can result in a detachment from it, and this needs to be countered with the development of a consciousness of the environment or sense of place. According to Penetito (2009), easy access to natural landscapes with relatively less air pollution, and access to clean water makes people in Aotearoa New Zealand complacent about the natural environment. General environmental well-being in these obvious aspects of daily life may make people forget about the long-term dangers that lurk under the surface. People need to be reminded of the deteriorating environmental conditions through the notion of place-based education.

A sense of place is a critical site for the confluence of culture, environment, and education. The literature presented here highlights the three primary aspects of place-based or place-conscious education as part of the broader Environmental and Sustainability Education agenda. First, it facilitates love, respect, care, stewardship for the land or place of being. Place conscious Environmental Education is “culturally responsive, and committed to care for land and people, locally and globally” (Greenwood, 2012, p. 93). A primary objective of place-based education is to enable learners to develop a sense of love, care, attachment, and stewardship towards their place of being, including the natural environment (Penetito, 2009). According to Geoff Park, the prolific Aotearoa New Zealand environmentalist, “How we inhabit a place can be the most telling expression of how we sense its worth, our intention for

it, and our connection with it” (Park, 1995, p. 21). It is a way to remind ourselves of where we are at the moment and what that means for us.

Second, it enables an understanding of connections between global and local environmental and sustainability concerns. The development and exploration of a sense of place through place-based education is to develop environmental awareness and consciousness about local, national, and global environment concerns (Greenwood, 2012; Penetito, 2009). It facilitates connections between the global environmental and sustainability concerns that seem remote and the local concerns that appear more real and urgent. A place-based lens provides a means to localise and focus the socioecological experience and inquiry since it relates to the everyday, closer to home environmental and sustainability aspects.

Third, Indigenous, diverse, and changing cultural and environmental realities are central to place-based education. An important aspect of place-based education is the use of local culture and context as the lens for learning. Such an educational approach reduces the divide between culture and environment with an understanding that culture is part of one’s environment and all environmental perceptions and experiences are culturally-mediated, hence the two are interdependent. Diverse and changing cultural and environmental contexts are central to a place-conscious pedagogy (Greenwood, 2012). The strength of a place-based approach lies in exploring and utilising unique local Indigenous ways of knowing and doing in Environmental and Sustainability Education. It is derived from an Indigenous perspective and includes at least three propositions that hold true for Indigenous Peoples including Māori as tangata whenua or Indigenous People of the land (Penetito, 2009, p. 20): a sense of place is a fundamental human need; people and the environments are co-habitants; and a consciousness of the mind and spirit union.

Critical place-based pedagogy in the current planetary state of continual flux requires close examination of complex interactions between cultures and ecosystems (Greenwood, 2012). A critical pedagogy of place is specific and responsive to the cultural and ecological context of a place. For Aotearoa New Zealand specifically, superdiversity acknowledges the complex interplay between diverse cultural variables such as the Indigenous culture and knowledges as well as varied migration status (Chan & Ritchie, 2019). Immigrants maintain their home culture while also acculturating themselves within the host cultural context. This implies their inclination to connect with the Indigenous language and culture of the host country if they are

recognised and valued as significant to the cultural integration (Chan & Ritchie, 2019). Thus, a critical pedagogy of place calls for decolonisation through challenging, critiquing, and undoing of colonial cultural practices), along with re-inhabitation or re-imagining and reconstructing an ecologically conscious relationship between people and place (Greenwood, 2012). The unique cultural context in this country calls for a critical, responsive, and inclusive approach towards policies and practices, including those within ECE. Thus, a critical place-based pedagogy needs to consider the nuanced and fluctuating dual sense of identity and place migrants might hold as they navigate the transitions between their home and host cultural and environmental contexts (Chan & Ritchie, 2019; Chan & Spoonley, 2017). Within the ECE context, a critical pedagogy of place would recognise and value the culture and knowledges of the Indigenous Māori people, while respecting and including the cultures and knowledges of other ethnic groups including families, children, and teachers.

These various theoretical perspectives all put forth the idea that there is an evident connection between environmental identity and Environmental and Sustainability Education, for children and teachers. It is also suggested that nature-based experiences and education in the early years are significant for environmental identity development and environmental inclinations and actions in the long term. Children are influenced and inspired to take environmental actions by positive role models. Additionally, a context-specific place-based approach is central to Environmental and Sustainability Education, especially considering the Indigenous People of the land and their worldviews.

Given the consensus on the value of early childhood environmental experiences and education, and their lifelong impact of environmental identity and behaviour, I now discuss the place of environmental identity specifically in Environmental and Sustainability Education within ECE.

2.6.5. ECE and Environmental Identity

As humans, we have an innate inclination and curiosity to explore and learn more about our land, our planet as our place of existence. However, children do not seem to have as many opportunities or the access to such environmental experiences today (Wilson, 2018). With a growing disconnect with the natural world today, and the pervasiveness of artificial man-made environments, this instinct seems to be lost (Louv, 2010). Growing concerns about the human-Earth relationship point towards the need to bring environmental identity development

to the forefront of child development discourse (Wilson, 2018). Since early childhood experiences are critical to the development of a lifelong appreciation and sense of care for the natural environment (Yanez et al., 2017), there is an urgent need to rekindle the spark in children and adults alike with the encouragement of an environmental identity (Pelo, 2014b). This spark or sense of an environmental identity can be developed and encouraged through interactions with the environment or environmental learning (Hacking & Barratt, 2007). Engaging young children in early environmental learning experiences facilitates life-long associations with and a sense of care for the natural environment (Hacking & Barratt, 2007) as it brings about changes in an individual's environmental knowledge, attitudes, behaviour, and skills. Thus, there appears to be a consensus among ECE researchers that the early years are a significant period for environmental and sustainability experiences and education. I now discuss environmental identity and early childhood Environmental and Sustainability Education in terms of the recent trends in research and practice.

In terms of research perspectives and paradigms, environmental identity in ECE has been explored using various standpoints. In recent times, a growing body of researchers have argued for the development of a 'common worlds' perspective in ECE where intentional teaching can take children beyond learning *about* the environment to learning *with* the environment. The Common Worlds Research Collective was co-founded by feminist childhood scholars Affrica Taylor, Veronica Pacini-Ketchabaw, and Mindy Blaise in the 2010s (Common Worlds Research Collective, 2023). This school of thought based on new materialist and post-humanist thinking promotes an understanding of humans as part of nature rather than separate from it. Thus, the child by themselves is not the focal point of learning, instead human and more-than-human identities are perceived as intertwined and the central aspect. From this perspective, the child and the more-than-human identities are studied not as separate but as a unit of interaction. This theoretical perspective includes multispecies ethnographic studies (see for example, Pacini-Ketchabaw & Taylor, 2015; Pacini-Ketchabaw et al., 2016; Taylor, 2017); posthumanist approaches that challenge child-nature and nature-culture binaries (Malone, 2016; Pacini-Ketchabaw & Nxumalo, 2015); and children's ontological relations with the natural world (Rautio & Jokinen, 2016).

From a psychosocial perspective in ECE, the Environmental Identity Development framework has been used by Green and others as an extension of the first four stages of Erikson's (1956) psychosocial identity theory and applied to an Environmental and

Sustainability Education context (Green, 2017; Green et al., 2016). It considers how children develop an identity in relation to the natural environment through the stages of Trust in Nature vs. Mistrust in Nature; Spatial Autonomy vs. Environmental Shame; Environmental Competency vs. Environmental Disdain; Environmental Action vs. Environmental Harm.

In practice, environmental identity is often interpreted as a part of children's holistic development. There has also been increased acknowledgement of the environmental self being an integral part of the whole child and hence holistic development (Pelo, 2014b; Wilson, 2011). Just as all areas of development require attention and input, environmental identity development requires attentive and intentional support in ECE. A child with a positive environmental identity grows up with a strong sense of belonging as part of nature, enriched, and encouraged by a sense of awe and wonder, and a sense of security in the constancy of nature (Pelo, 2014b; Wilson, 2011). Although the significance of fostering holistic development has long been recognised in ECE, the inclusion of an environmental aspect within that development has only recently started receiving significant attention in ECE research and practice.

Although children are believed to have an innate inclination towards nature, their environmental identity can expand and mature over time when it is nurtured and facilitated by experiences in the natural environment (Rice & Torquati, 2013; Wilson, 2018). Research by Pelo (2009, 2014a, 2014b) and Wilson (2011, 2018) provides extensive directions for environmental identity development among children and teachers in ECE. An ECE practitioner for over 15 years in North America, Pelo (2009, 2014b) documented her year-long journey as a caretaker of a toddler, spending each day in the outdoors to study the developments in their environmental identities. Based on her experiences, she proposed seven practices to foster an environmental identity from a place-based perspective. These principles apply to children and adults, as they did in her year-long research. Table 2.3 presents a synthesis of the principles, their meaning for environmental identity, and the corresponding implications for ECE teachers working towards fostering children's environmental identities.

Table 2.3 *Principles to Foster an Environmental Identity*

Principle	Link to child/adult environmental identity	Implications for teachers
Walk the land	Become familiar with landscape and its particularities, get to know the place.	Ensure gradual, enduring, deep connections to place, rather than quick, superficial, fleeting encounters with it.
Practise silence	Revel in the awe and splendour of the natural world, be humbled by nature, witness the wonders of the natural world in a silence beyond words.	Listen attentively to children and listen carefully to the natural environment with the children.
Learn the names	Identify and learn the names of creatures, flora, fauna; it helps to get to know them better as co-habitants of a place since people value what they can identify/name.	Learn the names to be able to share the information with children, feed their curiosity and encourage the inclination to know the place.
Embrace sensuality	Use the senses to intimately understand, interpret, appreciate, and make connections with the place and the wider natural world.	Encourage and ensure sensory experiences in, with and of nature through direct contact in nature and use of natural resources indoors.
Explore new perspectives	Be open to new ways of seeing the natural world, change perspectives to rediscover the wonders of nature, recontextualise the familiar and routine to discover the new in the natural environment.	Encourage creative endeavours, new paths to acquiring knowledge about the environment; promote an emergent pedagogy (Pelo, 2009, p. 34) with children's questions and interests leading the curriculum development.
Tell the Stories/Create stories	Foster creativity, imagination, emotion, language and knowledge as part of the environmental identity through telling and listening to stories of the place and the beyond-human world; get to know a place through stories.	Create and connect stories about the children (annual events, life events, significant milestones) with stories about the land (seasons, natural events); make connections between the children and the place.
Make rituals	Create and practise rituals that enable connections with the natural world; rituals of place that affirm one's environmental identity and sense of belonging to the place.	Encourage and model rituals and gestures that enable connections with the place and cohabitants in the natural environment.

Note. Compiled based on content from “A Pedagogy for Ecology”, by Pelo, 2009, (<https://www.rethinkingschools.org/articles/a-pedagogy-for-ecology>) and “A Sense of Wonder: Cultivating an Ecological Identity in Young Children – and in Ourselves”, by Pelo, 2014,

Through these principles and practices, Pelo (2009) proposed that a sense of place shapes environmental identity. Within the ECE context, it becomes the teacher's responsibility to enable children's development of a sense of place and in turn nurture their environmental identity. It is important for children to make connections with their places in order to develop a sense of belonging (MoE, 2017). In order to do so, a teacher would need to be aware and conscious of her own sense of place and environmental identity.

Similar to Pelo's (2009) principles, Ruth Wilson (2011, pp. 104-105), a pioneer of Early Childhood Environmental Education in North America, provided suggestions for ways in which teachers can facilitate the development of environmental identity in young children. These suggestions were based on her earlier "*Fostering a Love of Nature Index*" (1993, p. 158) as an implementation guideline for teachers working in ECE. These suggestions for teachers were to:

- Provide frequent positive experiences in the out-of-doors with opportunities for children to explore and experiment with natural materials (sand, soil, shells, seeds, water, clay, etc.).
- Provide a variety of observational tools and related materials (hand lens, windsocks, rain gauge, rulers, clip boards, etc.) to help children become better observers of the natural environment.
- Use natural materials (e.g., plants, rocks, driftwood) and/or realistic representations of them (e.g., posters with pictures of wildlife) for decorations and displays in the classroom.
- Engage children in conversations about the natural world, introducing words and ideas about natural things, using open-ended questions, and carefully listening to children's ideas.
- Involve children in growing plants and caring for animals.
- Share quality nature-focused literature, including both fiction and nonfiction books, with children.
- Encourage children to document their observations of and experiences with nature using a variety of formats (drawings, paintings, dictation, dance, drama, etc.) and expressing both scientific and aesthetic experiences with nature.

- Share information with families about the nature and purpose of Environmental Education or nature education activities and experiences available to children at the centre and in the community.

These guidelines apply not only to children, but also to teachers as a means to reflect upon and explore their own environmental identities.

Pelo (2009, 2014b) and Wilson (2011, 2018) provide frameworks for environmental identity development for children and ways in which teachers can facilitate the same within early childhood Environmental and Sustainability Education context. These guidelines reflect several similarities with the Aotearoa New Zealand early childhood curriculum document *Te Whāriki*. Within all three frameworks, the shared focus is on: opportunities for children to connect with the wider outdoor natural spaces through direct experiences; scope to explore, experiment with, and make use of resources drawn from nature; inclusion of families in children's environmental identity development by learning more about their ways of relating to the environment and sharing children's ECE-based experiences with families; making connections with the place by learning more about the land, its flora and fauna, its people, and its stories.

Other research has also shown that significant adults including ECE teachers play a significant role in helping children's environmental identity development (Chawla, 2009; Wilson, 2018; Yanez et al., 2017). The ways in which children view themselves in relation to the natural world is highly influenced by how they see people around them relate to it (Wilson, 2018). Thus, teachers play a key role in fostering children's environmental identities (Wilson, 2018). Although children are naturally inclined to care for the natural environment, teachers need to nurture these attitudes and behaviours. This process of modelling and facilitation of environmental and sustainability values and behaviours requires an examination of teachers' environmental identities.

2.6.6. Teachers and Environmental Identity

A complete teacher identity needs to be considered and understood in terms of the personal and professional self (Beauchamp & Thomas, 2009). Although teacher identity has been researched from the perspective of these personal and professional identities, their environmental identities had been a relatively under-researched area up until the start of this

century (Payne, 2001). Yet, the way teachers view and interpret the world and shape their professional goals, especially with reference to Environmental and Sustainability Education, is determined by their environmental identity and hence this aspect deserves attention.

In recent years, teacher identity has gained recognition as an important component of successful teacher education and professional development (Almeida et al., 2018). The same applies to their environmental identity where deeper connections with the natural environment seem to impact teachers' inclination towards and participation in Environmental and Sustainability Education programmes (Raus & Värri, 2017; Wals & Jickling, 2002). What and how a teacher teaches is determined by their personal and academic values. Teachers' skills, beliefs and drives are seen as critical for effective Environmental and Sustainability Education (Wilson, 2018). Additionally, teachers' perceptions of the natural environment (Torquati et al., 2013) and affective connections with the natural environment are crucial determinants of their commitment to Environmental and Sustainability Education (Almeida et al., 2018; Kelly et al., 2013). Strong beliefs and values about the environment or sustainability become part of the teacher's identity and the teacher is inclined to integrate those values into their own teaching philosophy and practice (Kennelly et al., 2008). Since a teacher's environmental identity, professional and personal, has a strong influence on their environmental beliefs and daily practices, the success of an Environmental and Sustainability Education programme depends as much on a teachers' environmental identity as it does on effective curriculum provisions. At the same time, environmental identity orientations of their educational context can have a significant influence on their environmental identities (Almeida et al., 2018; Miller et al., 2022a). Therefore, an ontological consideration in Environmental and Sustainability Education has become a critical re-understanding of one's being in the world, the consideration of the self in connection with the natural environment, which Raus and Värri (2017) refer to as a "more ecological, holistic teacher self" (p. 105).

Within ECE specifically, teachers' awareness of environmental and sustainability issues and their place in ECE contributes to their initial teacher identities (O'Gorman & Davis, 2013). Deeper engagement with Environmental Education and its integration in ECE might encourage commitment and prompt action among teachers for themselves and children. Teachers' environmental values, beliefs, and identities in general can make a significant contribution to children's environmental identity development through critical Environmental and Sustainability Educational inputs within the context of ECE.

Teachers are important role models, whose interest in nature can motivate children to be inclined towards a similar interest in the natural environment that is often sustained throughout their lifetime (Chawla & Cushing, 2007). They can also support children to break down global issues into local relevant understandings that will enable action and change (Ärlemalm-Hagsér & Sandberg, 2011). This relationship becomes reciprocal as teachers' involvement in attentive listening and collaborative querying brings about a shift in their own Environmental and Sustainability Education philosophies and practices.

Since children's inclinations might be fuelled by that of teachers, children need the guidance of teachers who are motivated to explore and strengthen their own environmental identities and environmental awareness to develop and implement intentional Environmental and Sustainability Education pedagogies. These processes require teachers to be environmentally aware and conscious as their own environmental understandings, ethical values, and educational philosophies impact their teaching (Sandell et al, 2005 as cited in Ärlemalm-Hagsér & Sandberg, 2011). Children also require support and encouragement from teachers to act on their interest in and make connections with the natural environment. Ideally, it has been found to be most effective when teachers share children's sense of wonder and inclination to connect with the natural environment and model such behaviour (Chawla, 2009; Chawla & Cushing, 2007; Croft, 2017). This suggests a need to understand, explore and study teachers' environmental identities along with children's environmental identities in early childhood Environmental and Sustainability Education.

As the literature suggests, teachers' environmental identity or sense of *kaitiakitanga* will influence the way they view, promote, and transact the environmental aspects of the curriculum to shape children's environmental identity to a large extent. To facilitate teachers' exploration of this interdependence between their environmental identity, teaching philosophy and practice, there is a need to reorient teacher education where teachers can begin the transformation of the self towards an environmentally sound one. On the one hand, teachers need practical tools and strategies for proactive engagement with the changing socioecological realities of the world (Wals, 2019). On the other hand, as integral participants in this process, they also need to re-examine their relationships with the natural environment to empower learners and sustain their interest and engagement in Environmental and Sustainability Education. Hence, teacher education and professional development must

address teacher identity through self-reflection (Korthagen, 2013). Effective Environmental and Sustainability Education must provide opportunities for educators to explore their environmental identities using their original cultural lens within the current cultural context or place of practice. Therefore, educational and professional inputs need to address teacher identity if they are to have deep, transformative, and lasting impacts on their teaching philosophy and pedagogy.

2.6.7. Section Summary

Environmental identity as a product and a force makes it a critical component of Environmental and Sustainability Education where it can be nurtured to intrinsically represent a sense of self in relation to the natural environment. This positive and strong sense of relatedness and connection or environmental identity, can bring about changes in attitudes, skills and behaviour that are environmentally inclined.

These critical and interdependent connections between environmental identity and Environmental and Sustainability Education are conceptualised in diverse ways and from varied perspectives as discussed within this section. The focus of these theoretical perspectives varies from the environmental context of the learner to environmental literacy, and the impact of significant life experiences for children and teachers, and the salience of place-based pedagogies.

Within the area of Environmental and Sustainability Education, the early years have been recognised and studied as a critical phase of environmental identity development. Varied theoretical perspectives have been developed including a collective ecology perspective where humans and more-than-humans are seen as collective identities and a psychosocial approach. In practice, researchers have studied environmental identity development as part of children's holistic development where some have developed strategies and practices for the development of an environmental identity for children and teachers within the ECE context.

Teacher environmental identity has been acknowledged and addressed as a critical component of Environmental and Sustainability Education in ECE where it is an important influencing factor for children's environmental identity development. Teacher environmental identity needs to be nurtured through regular and focussed academic and professional inputs.

The next section focusses on the third critical aspect of the study, culture (with reference to migrant Indian teachers); following from early childhood Environmental and Sustainability Education and environmental identity. It includes a discussion of literature on the critical relationship between environmental identity and culture, specifically in multicultural educational contexts.

2.7. Environmental Identity and the Sociocultural Context

Conceptualisations of environmental identity, including teacher environmental identity, are based on the premise that it is a socioculturally-determined and mediated construct (discussed in Section 2.6.2). Culture can then be considered a central component of environmental identity. This section outlines the interdependence of environmental identity and culture, specifically in the context of Environmental and Sustainability Education.

Culture is a complex term. It generally refers to lived practices and values of groups of individuals (Ang, 2010). It has been defined as shared values, social practices, attitudes of people, and shared behaviour (Rata et al., 2001). Importantly, diversity and inclusivity have become integral to contemporary conceptualisations and understandings of culture in an increasingly multicultural global context (Rana, 2020).

Globally, culture has been recognised as a critical component in Environmental and Sustainability Education (UNESCO, 2018, 2019a). There is an increased recognition of culture as the fourth pillar of sustainable development, along with environmental, social, and economic considerations and imperatives (Dessein, 2015; Hedefalk et al., 2015). Cultural diversity and social inclusion are now a clearly defined mandate within UNESCO's sustainability agenda (UNESCO, 2018). The UNESCO *Thematic Indicators for Culture in the 2030 Agenda* (UNESCO, 2019a) was developed as a framework to measure and monitor the progress of culture's role and contribution to the *2030 Agenda for Sustainable Development*. Specifically, the frameworks called for the integration of cultural diversity in the education curricula at all levels. This was a clear reiteration of the significant role played by cultural diversity and knowledge in Environmental and Sustainability Educational policy. In similar ways, culture has been recognised as the root of all human actions and hence a new paradigm in the sustainable development discourse and agenda.

2.7.1. Environmental Identity and Culture

Identities are a product of time, place, context, and experiences. They are “personally subjective and socially and culturally constructed” (Bruni et al., 2021, p. 14). The sociocultural context has a significant impact on identity development as cultures determine which aspects or attributes of identity are important. Sauvé (2017) highlights the vital relationship between the natural environment and culture when the environment is described as “the web of life itself, at the junction of nature and culture” (p. 117). Research has also shown that people’s conceptualisation of their relationship with the natural environment, environmental identity, and environmental attitudes are determined largely by their cultural orientation including values and beliefs (Milfont, 2012; Milfont & Schultz, 2016; Schultz, 2002; Schultz et al., 2000) . Environmental identities are formed as a result of socially constructed understandings of oneself and the natural environment and interactions with it (Clayton, 2003). They are determined by our sociocultural context that gives meaning to our interactions with nature. Thus, it is important to consider the specific ways in which sociocultural contexts determine the salience of an identity, an environmental identity in this case (Clayton, 2012). There is also a need to examine ways in which people create social/group identities that link them to the natural environment (Clayton, 2012) as they either encourage or discourage certain social affiliations and activities (Clayton, 2003). Cultural and spiritual heritage can be instrumental in reinforcing our economic and survival interests to enable the reconciliation of human affairs and natural laws (World Commission on Environment and Development, 1987).

Researchers have found that environmental attitudes and concerns are based on an individual’s value system, which is dictated by their culture. These value-based environmental orientations have been classified as egoist (focused on individual with environmental concerns for self), altruistic (focus on and concern for other people), and biospheric (focused on all living beings, ecosystems, and the biosphere) attitudes (Schultz, 2000; Schultz, 2002). These environmental orientations correspond to Sauvé’s (2009) three spheres of personal and social development (psychosphere, sociosphere, ecosphere). However, contrastingly, while these orientations are conceptualised as three distinct types, Sauvé’s ecological model brings them all together as interconnected spheres of environmental identity development and education.

Commonalities exist within cultural groups in their perceptions and attitudes towards the environment. Literature shows that cultural orientations (collectivist/individualistic), sociocultural norms, and specific experiences impact one's relationship with the natural world (Ando et al., 2007; Clayton, 2012; Sarigöllu, 2009; Schultz, 2002). Individualistic cultures value the autonomous self and self-enhancing goals and hence people are likely to have egoistic environmental attitudes. Collectivist cultures value relationships and focus beyond the self, hence encouraging altruistic and biospheric attitudes towards other beings (Schultz, 2002). The influence of cultural norms and expectations of a group identity is also likely to be greater in collectivist cultures where connections and groupings are considered paramount (Clayton, 2012).

However, the links between culture and environmental identity are not always obvious. As in the cultural iceberg (Hall, 1976), all elements of a culture are not evident. The cultural iceberg presents an analogy to illustrate cultural elements that are clearly visible (tip of the iceberg above the water), and embedded cultural elements that are not readily visible (portion of the iceberg submerged under the water). The explicit cultural elements are referred to as the surface culture such as costumes, food, holidays, music, and dance among others. The implicit elements are part of the deep culture and include the unconscious values and attitudes such as notions of modesty, preference for competition or cooperation, nature of friendship (Frank, 2013). Environmental beliefs and values would also be a part of the deep culture, hence not obvious aspects of one's personalities and characteristics.

People experience nature individually and collectively with others within their sociocultural groups (Bruni et al., 2021; Clayton & Myers, 2015). These collective experiences of nature influence our understandings of nature and its meaning or how we conceptualise nature. These understandings of the natural environment and our relationships with it are instrumental in one's environmental identity development (Clayton & Myers, 2015). Along with relationships with the natural environment, an environmental identity is also concerned significantly with the sociocultural environment.

2.7.2. Environmental Identity in a Multicultural ECE Context

As evident from the literature reviewed so far, an environmental identity also contains a social element as it is determined by and contributes to social context and meaning (Clayton & Opatow, 2003). It is formed through interpersonal and group membership in a sociocultural

context. These collective sociocultural orientations of environmental identity become complex and dynamic in a multicultural context like ECE in Aotearoa New Zealand. A cultural lens to environmental identity in the country requires consideration of the complex interplay between the diverse group of people including the Indigenous Māori, Pākehā, Pacific cultures, as well as the various migrant ethnicities (Chan & Ritchie, 2019). The nature of this context makes environmental identity a multi-layered, complex, and fluid construct that requires constant negotiation.

This complexity is further magnified for individuals who undergo major geographical, social, and psychological shifts, such as in the case of migrant teachers (Clayton & Opatow, 2003). Central to an understanding of migrant teachers' culturally-oriented environmental identities would be their sense of place, or what Elbaz-Luwisch (2004, p. 387) calls "a sense of the teacher in a place", a specific place or in this case places that hold meaning for the teachers. A sense of place holds a different and significant value for a teacher whose place changes, such as migrant Indian teachers. It is especially significant in these times of increased migration and human movement. For these teachers, a sense of belonging to one's place of origin and one's place of being, both contribute to one's sense of self. Thus, a sense of place or a sense of places in the case of migrant teachers, holds meaning for one's existence and identity (Elbaz-Luwisch, 2004; Orr, 1992). Immigrant teachers may hold dual cultural and environmental identities as they negotiate between their home and host cultural contexts (Chan & Spoonley, 2017). The teachers' original sense of place and the new sense of place might create tense or smooth transitions. Either way, the transition would present challenges and significant changes in the teacher's sense of place and identity.

Studies have also shown that acculturation brings about changes in environmental attitudes and identity. Research findings showed cultural differences in the perception of the interrelatedness between humans and the natural environment (Johnson et al., 2004; Schultz et al., 2000). Environmental attitudes and behaviour appeared to vary by ethnicity and were influenced by the amount of time spent in a particular cultural context. Hence culture and acculturation were both seen as significant determinants of one's perception of, and relation to, the natural environment.

From another cultural perspective, some scholars (Dwivedi, 1993; Ravindranath, 2007) propose that Eastern religious philosophies facilitate strong human-nature relationships.

While others (Narayanan, 2001; Tomalin, 2002) caution against making assumptions about the bearing that nature-related religious values have on pro-environmental attitudes and behaviour. In this light, due to the diversity and pluralities of Indian society, it becomes crucial to unravel individual and group identities in order to understand a person's environmental ideas and beliefs (Mawdsley, 2004).

Whatever the orientation, it is well established that human constructs such as environmental identity have a cultural history (Bronfenbrenner, 1979; Vygotsky, 1978). These histories are located in their cultural and physical contexts. But what happens when this/these cultural contexts change? What happens when these individuals migrate to a different or environmentally rich cultural context such as ECE in Aotearoa New Zealand, that might presumably foster or facilitate the environmental identity in question?

This question points towards a need to incorporate cultural aspects into Environmental and Sustainability Education, especially in the early years. Studies from various cultures have provided evidence for the important role culture plays in this agenda (Samuelsson & Kaga, 2008). This becomes significant when early learning contexts are multicultural in their make-up (children, families, and teachers) with local, Indigenous, and numerous migrant cultures together in one place. It becomes critical to consider and share the various cultural knowledges, perspectives, and philosophies to enrich the Environmental and Sustainability Education discourse. Cross-cultural critical document analysis (Kim & Dreamson, 2020) has also provided evidence for the need to add a cultural dimension to early learning curricula especially in the context of diverse and multicultural ECE contexts. Teachers' identity and sense of belonging have a significant impact on children's identities and well-being especially within the multicultural ECE context of Aotearoa New Zealand. Yet, teacher identity with respect to culture, diversity, multiculturalism, and cross-cultural practices is a neglected research area (Arndt, 2018).

2.7.3. Environmental Identity, Cultural Diversity and Transitions.

Studies have been conducted to examine the close connections between education and culture where the inclusion of cultural dimensions has been promoted as critical to Environmental and Sustainability Education (Agyeman, 2002; Nordström, 2008). Culture has been recognised as an enabler within the context of environmental identity and early childhood

Environmental and Sustainability Education. The literature reviewed and discussed here shows that environmental knowledge is based on cultural processes and participation and therefore, Environmental and Sustainability Education must be tailored to the cultural context (Nordström, 2008).

Diversity of any kind, including cultural diversity can be an advantage in the Environmental and Sustainability Education context. Diversity in terms of levels of awareness, cultural orientations and experiences can facilitate an exchange of knowledge, information, and unique perspectives (Eames & Cutter-Mackenzie, 2017; Stapleton, 2015). Cultural diversity and inclusion support teachers to make connections between the rich environmental past and the current environmental concerns. Teachers share their culturally-oriented environmental values through their teaching philosophies and practices.

Thomashow (1998) proposed a set of nine “pathways to biospheric perception” (p. 295) that inform the practice of ecopsychology and facilitate the development of an environmental identity. These pathways are strategies that encourage the exploration and strengthening of an environmental identity through closer connections with the ecosystem. They are metaphorical, experimental, and open to interpretation and adaptable to suit the context in question. One of these principles focuses on honouring diversity. Here diversity implies cultural and conceptual diversity. Thomashow highlights the importance of using diverse cultural perspectives to conceptualise and understand the natural world. Such perspectives may include the idea of diversity in terms of understanding biodiversity and using multiple learning styles as a method to do so.

Effective Environmental and Sustainability Education needs to be culturally-responsive to an increasingly diverse group of teachers and learners by integrating multicultural knowledge and perspectives (Blanchet-Cohen & Reilly, 2013). Thus, there is a need to understand the opportunities and significance of Environmental and Sustainability Education in culturally-diverse contexts. In the context of Aotearoa New Zealand, recognising and acknowledging cultural diversity in the form of Māori and Pākehā (of European descent) notions of care and respect for the natural environment can enrich teachers’ understandings of and respect for the *oīkos*, as they encourage the same in children (Vincent-Snow, 2017). However, in this highly multicultural ECE context, cultural inclusion and richness needs to be explored further and can be made inclusive. Migrant teachers from various cultures make up a large proportion of

the ECE context (Education Counts, 2023b). Along with Māori and Pākehā concepts of the natural environment and education, teachers from other cultures can bring in their rich environmental cultural beliefs and notions to further enrich the kaitiakitanga teachings and practices within their ECE contexts. Thus, their perceptions and environmental identity need due consideration in the early childhood environmental and sustainability context.

Nordström (2008) highlights the similarity between Environmental Education and multicultural education with a common focus on values education, empowerment, cultural diversity, respect, and compassion. Hence, if cultural aspects are critical to Environmental and Sustainability Education, its relation to multicultural education must be considered.

2.7.4. Section Summary

This section focussed upon the critical relationship between environmental identity and culture. Sociocultural contexts and cultural orientations determine the conceptualisation and development of environmental identity. This process is made complex through experiences of cultural shifts, immigration, acculturation, and cultural diversity. Yet, culture and its relation to environmental identity remains critical in Environmental and Sustainability Education, especially in the context of an increasingly multicultural Aotearoa New Zealand. The following section looks at one such group of migrant teachers that are part of the culturally-diverse Aotearoa New Zealand ECE context and the focus of my research.

2.8. Migrant Teachers and Cultural Transitions

Today, migrant teachers have become indispensable members of the education community in countries facing teacher shortages such as Aotearoa New Zealand (Immigration New Zealand, 2023; Yip, 2023). As a result, several recent studies have explored migrant teacher identity (Bense, 2016). These studies have focused primarily on teacher professional identity and cultural identity transitions. However, the literature for this research did not yield any studies on teachers' cultural transitions in relation to their environmental identities.

Migrant teachers' professional and cultural identity transitions are often shaped by the cultural differences between the home and host countries (Yip et al., 2019; Yip et al., 2022). These teachers experience a process of identity reconstruction (Bense, 2016). They go through cultural and professional acculturation where they are required to relearn new ways of

teaching and interacting (Yip et al., 2022). They are expected to gain “culturally specific educational knowledge” (Peeler & Jane, 2005, p. 325). When cultural and professional adjustments take long, they can present challenges to teacher confidence and professional identity (Bense, 2016; Yip et al., 2022). Teachers might also go through the experience of culture shock where some are able to make the cultural transitions successfully while others are unable to cope with them (Roskell, 2013). Therefore, it is essential for schools and ECE settings to support migrant teachers’ cultural and professional transitions as they develop skills and practices to suit the new context. The school leadership plays a key role in this process (Almeida et al., 2018; Yip & Saito, 2023).

2.8.1. Increasingly Multicultural Aotearoa New Zealand ECE context

Demographically, Aotearoa New Zealand is a multicultural country made up of diverse ethnicities. Table 2.4 shows the six major ethnic groups in the country as of 2018 (Stats NZ, 2020), with the next census completed in 2023 (data to be released from 29 May 2024). With an increasingly diverse migrant population, Aotearoa New Zealand is also witnessing an increasingly culturally and ethnically diverse teacher population in ECE (Shuker & Cherrington, 2016).

Table 2.4 *The Major Ethnic Groups in Aotearoa New Zealand 2018 Census*

	2018 (%)
European	70.2
Māori	16.5
Pacific Peoples	8.1
Asian	15.1
Middle Eastern / Latin American / African	1.5
Other ethnicity	1.2

Note. Adapted from <https://www.stats.govt.nz/news/ethnic-group-summaries-reveal-new-zealands-multicultural-make-up/>. Copyright 2018 by Statistics New Zealand.

Student teachers can undertake one of several approved ITE programmes through accredited providers leading to Teacher Registration, a mandatory requirement for teaching in Aotearoa New Zealand (Teaching Council of Aotearoa New Zealand, 2024) . These include Bachelor,

Master, Graduate Diploma, and Postgraduate Diploma programmes. Teachers must be registered and hold a current practising certificate to be able to teach. New or beginning teachers and overseas-trained teachers are provided with a Provisional Practicing Certificate based on eligibility. Provisionally certified teachers are then required to complete a 2-year induction and mentoring programme, supervised by a mentor who holds a Full Practicing Certificate, and endorses that the new teacher can independently use and meet the *Standards for the Teaching Profession | Ngā Paerewa* that describe the expectations of effective teaching practice, as provided by the Teaching Council in *Our Code Our Standards* (Education Council Aotearoa New Zealand, 2017). The Code is a tool that assists ITE providers in supporting student teachers in understanding and preparing for the profession.

Immigration New Zealand (2023) has had ECE teaching on the skill shortage category for a while, and currently it is on the Green List as a fast-track to work and/or residency, providing further incentives for prospective ECE student-teachers and teachers from Asia. Universities continue to market the ECE Initial Teacher Education programmes in Asian countries attracting many international students and migrant teachers. The *2019 Ministry of Education Annual Report* (Ministry of Education [MoE], 2019) recognised that teacher supply has been facilitated through increased recruitment of Aotearoa New Zealand qualified or overseas-qualified teachers and improved funding for ITE. These provisions have further increased the number of Asian teachers in ECE, including a growing number of teachers from India.

Due to this influx of skilled migrant teachers and increasing numbers of international students in ITE ECE programmes, the Aotearoa New Zealand ECE landscape is becoming increasingly multicultural, in terms of children, families and teachers. The number of ECE teachers who identified as Asian increased from 5347 in 2019 to 6736 in 2022 (Education Counts, 2023b). The proportion of teaching staff that were qualified decreased for Pākehā and Māori origin teachers while it increased for Asians from 63% in 2021 to 66% in 2022 (Education Counts, 2023b). Consequently, the Aotearoa New Zealand ECE context faces unique challenges with the need to consider the rapidly growing and increasingly diverse migrant group of teachers implementing a bicultural curriculum framework in a superdiverse country with a history of colonisation (Chan & Ritchie, 2020, 2023).

2.8.2. Cultural sustainability and *Te Whāriki*

In Aotearoa New Zealand, the sustenance and inclusion of diverse cultures in terms of identities and languages becomes critical for an increasingly multicultural ECE context, which is also reflected in the ECE curriculum document *Te Whāriki* (Ritchie & Veisson, 2018). A *Te Tiriti o Waitangi* | *Treaty of Waitangi* based approach for the ECE curriculum framework recognises Māori as tangata whenua, which all teachers are expected to acknowledge and prioritise in their practice. At the same time, this paradigm also acknowledges the increasing diversity of all those other than Māori in Aotearoa New Zealand (Chan & Ritchie, 2020; 2023; MoE, 2017). *Te Whāriki* itself is a bicultural curriculum document that highlights the multicultural nature of Aotearoa New Zealand ECE. The revised 2017 framework acknowledges the value of cultural diversity and inclusion within ECE settings and has a strong focus on language, culture, and identity (MoE, 2017).

Learner identity is a core component of the *Te Whāriki* framework where children's home languages and cultures are valued, and teachers are expected to be "responsive to their cultural ways of knowing and being" (MoE, 2017, p. 12). *Te Whāriki* specifically elaborates upon the responsibilities of teachers with respect to cultural identity development and inclusion in ECE settings (MoE, 2017, p. 59). These responsibilities include increased cultural competence including te reo and tikanga Māori (Māori ways of doing including practices, customs, and rituals) proficiency; thoughtful, reflective, critical practice; and professional development. Teachers need to provide opportunities for children to explore their cultural identities. This would also mean that the teachers themselves would need opportunities to explore and develop their own identities. Research on teacher identity and cultural diversity (Arndt, 2018) has highlighted the need to re-evaluate cultural difference and diversity for teachers within ECE and its implications on children's cultural identities and belonging within early childhood settings. There is an indication towards the need to facilitate ECE teachers' dispositions and skills in order to positively recognise and maximise the advantages of diverse teams (Cherrington & Shuker, 2012).

As part of this cultural sustainability facilitation, ECE teachers are required to facilitate children's identity development in accordance with their cultural orientation, while simultaneously developing a sense of belonging in the Aotearoa New Zealand context. Teachers are expected to support migrant children and their families understand the histories

and cultures of the host country in order to develop their sense of identity, place, and belonging in Aotearoa New Zealand (Chan & Ritchie, 2020). If the growing number of migrant teachers are to achieve these cultural sustainability goals for children within their settings, their own cultural diversity requires focus and addressing within the ECE context (Arndt, 2014; Rana, 2020) where they themselves can be confident in their own sense of identity, place and belonging. The challenge is further compounded by the fact that for many migrant teachers, this identity is characterised by ongoing negotiations and transitions between their home and host cultures.

Te Whāriki states that teachers need to facilitate an environment that encourages children's engagement with important material and psychological cultural tools. It is also considered important for children to have opportunities to experience stories and symbols of their own culture and those of the various cultures that are part of Aotearoa New Zealand (MoE, 2017). Teachers are an integral part of this process as they are responsible for its facilitation. If teachers are expected to encourage children to appreciate, respect and value the cultural diversity of their context, they themselves need to develop an in-depth understanding of the bicultural nature of the curriculum framework, and the multicultural context of Aotearoa New Zealand ECE. To do so, teachers also need to become cognisant of how their cultural identity shapes their pedagogy and practice while sharing their cultural practices within their settings. They would need to become aware of a multitude of cultural tools including those of Aotearoa New Zealand and their own cultural tools.

Additionally, in the Code of Professional Responsibility within *Our Code Our Standards* (Education Council Aotearoa New Zealand, 2017) there is an expectation that teachers be committed to shaping children's futures by "promoting and protecting the principles of human rights, sustainability and social justice" (p. 12). This provision implies that teachers have a role in facilitating the interconnectedness between children's environmental and cultural identities within the historical and current superdiverse context of Aotearoa New Zealand.

Therefore, with an increase in migrant ECE teachers through the skill-based migration policy and recruitment of international ECE student teachers, pre-service and in-service programmes need to take into account the contextual backgrounds and learning needs of an extremely

diverse group of ECE teachers including Māori teachers and migrant teachers (Chan & Ritchie, 2020). These new migrant teachers are required to learn about, understand, interpret, and put into practice a Treaty-based bicultural curriculum in a multicultural setting. Since the environment is interwoven into the curriculum primarily through the notion of kaitiakitanga, teachers are also expected to interpret and interweave this into their pedagogy and practice. Migrant teachers are introduced to a new and unfamiliar curriculum framework, which they interpret through their home cultural lenses as they implement it in a new host context. This makes it an especially complex, dynamic, and multi-layered process for migrant teachers. An exploration of these transition processes of cultural crossings would provide an insight into a steadily growing sub-population of ECE teachers. Findings could yield information on how these processes can be made smoother and efficient to enable migrant teachers' understandings, interpretations, and implementations of a culturally and environmentally focused curriculum framework. This investigation would also provide opportunities for migrant teachers to explore their cultural and environmental identity transitions while facilitating children's cultural and environmental identity development.

2.8.3. The Sociocultural Context of Migrant Indian Teachers in Aotearoa New Zealand ECE

Indian immigrants are one of the fastest growing cultural groups in Aotearoa New Zealand. The number of people who identify with the Indian ethnic group increased significantly from 155,178 in 2013 to 239,193 in 2018 (Stats NZ, 2018), and this growth is being reflected in the increasing numbers of migrant Indian teachers in Aotearoa New Zealand ECE. Despite the steadily growing sub-group of migrant Indian teachers, few studies exist that focus specifically on migrant Indian teachers in Aotearoa New Zealand ECE (see for example, Kaur, 2017; Rana, 2020). Kaur's (2017) research examined the challenges, obstacles, and benefits of cultural adaptation for migrant Indian ECE teachers. The findings reflected mixed experiences, some positive and some discriminatory. Teachers faced several challenges in the acculturation process which was either made easier or difficult depending upon the kind of support they received or did not receive from colleagues at their ECE settings. The findings also highlighted the need for wider and better support systems for migrant ECE teachers to help them feel and be included in the Aotearoa New Zealand ECE context. Rana's (2020) study explored Indian student teachers' perceptions of their identity and enculturation process within Aotearoa New Zealand ECE. The study found that the participants enculturated themselves into the Westernised host culture while also holding onto their home culture. The

study highlighted that in addition to Māori and Pākehā, there is a need to include all other cultures and identities, especially those of the growing migrant teacher community, into the Aotearoa New Zealand ECE context. Thus, the growing sub-group of Indian teachers in this country has been the focus of some research, but primarily from the perspective of cultural transitions and acculturation into the host country ECE context. Their environmental identity and the related transitions have not been the focus of research to date.

Along with an increase in Asian teachers, the Aotearoa New Zealand ECE sector is facing a simultaneous, and growing, need for environmentally conscious practices and philosophies. Local culture and policy require these teachers to become aware of their current context so that they can facilitate children's identity development in relation to their culture and environment. Children need to be supported to make connections amongst their various cultural communities and settings, the environment being one such context (MoE, 2017). Thus, in addition to their own environmental identities, migrant Indian teachers need to become familiar with the environmental context and culture within Aotearoa New Zealand ECE.

What do these culturally-oriented environmental identity transitions look like for migrant Indian teachers who undergo transition between their Indian home cultural identity to the Aotearoa New Zealand host cultural identity? How do they meet the expectations of implementing a bicultural curriculum framework in a multicultural ECE context using their home cultural lens? These questions necessitate a look at the connections between culture and Environmental and Sustainability Education. More specifically, they call for the need to explore an increasingly multicultural Aotearoa New Zealand ECE context, the need to consider diverse migrant teachers' cultural orientations, and the complex sociocultural context of migrant Indian teachers practising in Aotearoa New Zealand ECE.

While exploring the identities and experiences of migrant Indian teachers in a Western nation, it is important to note that historically dominant discourses have tried to understand colonised nations' experiences through the lens of colonisation. This might be feasible in certain fields of study, while others require a native lens to provide authentic interpretations of the people or cultures under consideration. Hence, in this study with its focus on migrant Indian teachers, the dominant Western colonial lens must be supported by or led by Eastern Indigenous philosophies or theories. The following sub-section explores the notion of an Indian identity

from an Indian sociocultural and historical perspective, Indigenous philosophical environmental perspectives, and highlights some key developments in environmental education.

Indian Identity and Environmental Philosophical Perspectives

The sociocultural context of Indian teachers begins from their home cultural context where they develop their cultural and environmental identities shaped by the country's broader cultural milieu, environmental and sustainability education context, as well as their personal life experiences. Historically, in the ancient Aryan age, the natural environment was interwoven into people's daily lives in the form of culture and religion (Almeida, 2015; James, 2014; Ravindranath, 2007). The sanctity of life and connection with nature have always been an integral part of Hindu philosophy. The worship of flora, fauna, rivers, oceans, and mountains has been a part of religious and sociocultural traditions. This way of life and environmental preservation is evident in numerous ancient scriptures and texts. Nature and environmental conservation have been written about in Hindu scriptures such as *Vedas*, *Upanishads*, *Smritis*, *Puranas*, and the *Bhagavad Gita* that talk about the inseparability of humans and the environment and the interconnectedness of all beings (Almeida, 2015; Awasthi, 2021; James, 2014; Moolakkattu, 2010). They depict praise and adoration for nature, knowledge of the self in relation to the world, maintenance and conservation of the earth, restrictions/sanctions on the destruction of the environment, relationships with flora and fauna, and the presence of divinity in the natural world (James, 2014; Singh, 2012). Hindu texts refer to the divinity of nature where people worship the presence of God in all of nature (Jain, 2010; Singh, 2012). For instance, the river Ganga and the earth are worshipped as Goddesses. Hindu spirituality views humans as part of nature and assumes no difference between all life forms. The philosophy of 'karma' (loosely translated as fate, destiny, deeds) is based on ideas and practice of selflessness, good deeds, and duty towards all beings to attain 'moksha' (loosely translated as final deliverance) (Almeida & Cutter-Mackenzie, 2011; Almeida, 2015; Jain, 2010). Thus, respect for and preservation of the environment and all living beings is inherent in ancient Hindu philosophy and identity.

At present, India is a culturally diverse nation with a variety of cultures and traditions that vary based on regions, sub-regions, cultures, and subcultures. Yet, environmental protection and conservation, as a result of people's inherent connections with it, have always been a part

of Indian society (Ravindranath, 2007). At the same time, spirituality is a significant part of the national identity in the form of spiritual and religious practices (Almeida, 2015). For many Indians, an environmental connection is inherent in their sociocultural identity (Almeida, 2015). At the same time, the ancient philosophies and beliefs of selflessness, karma and interconnectedness with nature have been eclipsed to an extent by the globalisation and materialism that the country has witnessed over the past couple of decades (Almeida & Cutter-Mackenzie, 2011; Ravindranath, 2007). These influences of westernisation and the dominant discourse of development have distanced the original Indian cultural and environmental identity from its roots, resulting in the indiscriminate exploitation of the natural environment further perpetuating socioeconomic inequalities (Guha, 2003). Thus, the Indian cultural identity today could be viewed as an amalgamation of diverse traditional cultural influences, modern ideologies, personal childhood/life experiences, and environmental and sustainability education knowledges.

The above-discussed cultural and environmental philosophies from the ancient to the current period shape and define Indian cultural and environmental identity. The migrant Indian teacher participants in this study are also likely to have been influenced by these above-discussed Indian philosophies and ideas. Migrant Indian teachers' identities are likely to be influenced by the time they spent in the country, the various sociocultural, and environmental influences they experienced as a part of the nation at the time, and their familial, subcultural, religious, and geographic contexts. Yet, due to the diverse nature of Indian subcultures and people, it is not possible to homogenise the relevance of these philosophical ideas to the population. However, for the sake of this thesis, I consider these views, with the knowledge and awareness that some of the participant teachers were not Hindu and are not followers of Hindu philosophy. This very feature of the Indian sociocultural context and identity makes defining an overarching Indian identity and philosophy complex, nuanced, and problematic. While I consider these cultural philosophies and perspectives, and realise the potential of such a cultural lens, a detailed examination of these ideas was beyond the scope of this thesis.

Several ideas contained within the above discussed ancient Eastern, Indian, and Indigenous Māori perspectives (discussed in detail in Section 2.5.1.) intersect with western theorising of environment identities such as that given within Sauv  s (2017) interconnected spheres of personal and social development (detailed in Section 2.6.4). Like the ancient Indian and

Indigenous Māori notions of interconnectedness between all life forms, Sauv  s (2017) ecological theorising of human development talks about the construction of human identity as interdependent on the natural environment and the sociocultural context. These ways of being have long been in practice before the inception of modern theorising in the western world. The environment and its wellbeing have always been central to ancient and Indigenous ways of life.

The idea of an environmental self is not new to the traditional Indigenous worldviews where the self is constructed not separate from, but in unison with the world. The traditional Indian and M  ori cultures recognise a collective identity or interconnected identity rather than a disconnected individual separate from the world, as also discussed by Sauv  . Some ways in which ideas from Indian philosophical thought and te ao M  ori are reflected in Sauv  s spheres are:

- An identity is constructed and defined with reference to other people, places, and things in one's context (Ravindranath, 2007; Vincent-Snow, 2017).
- The natural environment and humans are viewed as inseparable (Almeida, 2015; Awasthi, 2021; Ritchie et al., 2015)
- The environment is a part of people's daily lives, with due respect for, and acknowledgement of, human-nature interconnectedness (Almeida, 2015; Ravindranath, 2007; Ritchie et al., 2015).
- Both cultural orientations consider the natural environment sacred, and these beliefs are manifested in the form of spiritual and/or religious connections and practices (Alcock & Ritchie, 2018; Awasthi, 2021; McAllister et al., 2023; Nolan, 2022; Singh, 2012).
- The human-nature interconnectedness is reflected as a link between the past, present, and the future, where ancestors are significant figures (Awasthi, 2021; Paul-Burke & Rameka, 2015; Ritchie et al., 2015; Singh, 2012;).
- Conservation and preservation of all life and nature is part of the cultural belief systems (Ritchie et al., 2010; Singh, 2012).
- Restrictions/practices were put into place to ensure conservation and sustainability of the natural world (Nolan, 2022; Singh, 2012).

Environmental Education in the Indian Context

Almeida (2015; Almeida & Cutter-Mackenzie, 2011) provides a comprehensive analysis of the Environmental Education trajectory in the Indian context. Traditional Indian philosophies were based upon human-environment relatedness and harmony. They encouraged environmental protection through restraint on the consumption of natural resources and caring for all living organisms (Ravindranath, 2007). These philosophies were suppressed and discouraged under the colonial rule in India, while the postcolonial period saw a resurgence of traditional Indian environmental philosophies. The initial attempt at incorporating the environment into education was evident in the indigenous philosophies and works of numerous pioneers and reformers such as Swami Vivekanand, Sri Aurobindo, Rabindranath Tagore, and Mohandas Karamchand Gandhi (James, 2014). The Nobel laureate Rabindranath Tagore founded Shantiniketan (West Bengal), an institute that was based on nature-friendly studying and living. His literary works too were inspired by and represented nature (Moolakkattu, 2010). Sri Aurobindo inspired the founding of a community called Auroville (South India) based on ideas of ecological restoration and sustainability (James, 2014). One of the most significant developments in the area of human ecology was the 'Nai Talim' or Basic Education movement initiated by Mohandas Karamchand Gandhi in 1937. The movement promoted the idea of education as individuals' spiritual development based on indigenous education systems (Mahatma Gandhi National Council of Rural Education [MGNCRE], 2018).

More recently, human-nature interaction in the form of protection and conservation was included as a fundamental duty for Indian citizens within the Constitution of India drafted in 1950 (Government of India, 2022). Environmental Education was only made mandatory across all years of formal schooling by the Supreme Court in 2003. This feature was provided for in the National Curriculum Framework of 2005 and 2023 (National Council of Educational Research and Training [NCERT], 2005, 2023), as well as the teacher education curriculum in 2005 and 2009 (National Council for Teacher Education, 2009). Children's interactions with the natural environment have also been included in the National Curriculum Framework for the Foundational Stage (3 to 8 years age group) (NCERT, 2022). Under the direction of the University Grants Commission (UGC), India's apex grant-giving and policy-making body for higher education, Environmental Education also became part of the curriculum for most undergraduate institutions in the country now accompanied by a syllabus

and textbook for the course (Chhokar, 2010). The Commission released its Guidelines for Curriculum Framework for Environment Education at Undergraduate Level in 2023 (University Grants Commission, 2023). These numerous policy developments have increased efforts towards the inclusion and implementation of Environmental Education in formal education and teacher education, but the uptake has been slow (Almeida & Cutter-Mackenzie, 2011; Ravindranath, 2007).

Although environment and sustainability ideas have been a significant part of Indian philosophy, culture, traditions and identity since ancient times, the post-independence implementation of these ideas has been gradual and varied around the country. However, numerous governmental and non-governmental organisations have committed to and are working towards environmental education within schools and for teacher education, such as the Bhartiya Vidyapeeth University's Institute of Environment Education and Research and the Centre for Environment Education (Almeida & Cutter-Mackenzie, 2011; Ravindranath, 2007). Although Environmental Education has gained traction over the past few decades, it has been more naturally integrated into the rural environment and schools given the easy accessibility, daily interaction, and historical interdependence of humans and the environment in those regions. Urban schools are located in industrialised and crowded cities that might not provide students with ample opportunities to access or interact with the natural environment.

Cultural identities have been found to be at the crux of environmental education (Almeida, 2015). This becomes especially pertinent when teachers coming from the above discussed sociocultural context with diverse cultural and environmental identities, beliefs, and practices, are expected to develop a different set of cultural and environmental sensibilities and competencies for their practice. Their environmental identities likely undergo transitions as they navigate their way from, to, and between their home and host cultural identities. Academically and professionally, the Indian teachers in this study have either gained a previous teaching qualification in India and/or an ECE qualification here in Aotearoa New Zealand. Hence, they bring their education skills and expertise from their home cultural context and mould, adapt, or change these approaches to suit the new context.

These professional identities are likely to be influenced by teachers' cultural, religious, traditional, and personal values and beliefs. In other words, their Indian-ness would affect and

be affected by their education, professional practice, and acculturation within the new context. These teachers have typically emigrated from a cultural context that was historically rooted in a spiritual connection to the natural world but might not always prioritise the natural environment in the present. Yet, they find themselves now practising in a society that values awareness of, and interaction with, the natural environment on a regular basis (see for example, Toimata Foundation, 2023; MoE, 1996, 2015, 2017). Implementing a relatively more environmentally-inclusive curriculum such as *Te Whāriki* (MoE, 2017) in an environmentally conscious context could have varied interaction with their Indian-ness. The cultural differences might influence migrant teachers' Indian-ness by questioning their thoughts about their own relationship with the natural environment, or perceiving environmental worldviews that might be contradictory to their Eastern/Indian orientations. In such cases the teachers might adapt to the context by moulding their environmental identities to suit the cultural context or face challenges in their teaching practices. On the other hand, teachers may identify similarities between the two contexts that provide a sense of familiarity and confidence that in turn enable smoother transitions where they are able to bring their Indian-ness into their ECE settings.

These cultural and environmental identity transitions would influence the way they facilitate the development of an environmental affinity and *kaitiakitanga* among children. Thus, it is pertinent to consider migrant Indian teachers' home sociocultural context, host sociocultural context, and the transitions between the two, specifically with reference to their environmental identity.

A starting point for this exploration would be the sociocultural context of migrant Indian teachers in Aotearoa New Zealand ECE. A sociocultural perspective is based on the premise that humans are social beings. Development and learning are socially and culturally-situated hence they need to be understood within the context of time and place (Smidt, 2009). We learn through interactions and experiences within the social, cultural, and historical context. What and how one learns is determined by their sociocultural context. Accordingly, teachers' identity development and environmental philosophies and practices cannot be understood in isolation from the context of their sociocultural experiences. They develop and make meaning of their identity, learning and teaching through their comprehension, participation, and interaction within a sociocultural group or groups (Smidt, 2009; Vygotsky, 1978). These groups could include their larger national or social culture, religious beliefs, and professional

or ECE setting culture. For migrant teachers this becomes an intricate and twofold process of navigating between their home and host sociocultural systems.

From a sociocultural perspective, mediation is the key to this identity development and learning that is social and cultural in nature. Mediation refers to the use of ways of communicating to understand, interpret and explain our experiences in context (Smidt, 2009). For the teachers, the human-environment or human-context interaction is mediated or transacted using cultural tools, and these interactions and cultural internalisations could bring about changes in identities (Vygotsky, 1978). Cultural tools or psychological tools are signs, symbols, systems, and things that are developed and used by sociocultural groups to think, reflect upon, and communicate their values, ideas, principles, and practices (Smidt, 2009). These cultural tools are used to make sense of the world around us. Cultural tools include language, signs, symbols, music, and art. According to Vygotsky (1978), signs are a combination of form and meaning where the form conveys a particular meaning within that cultural context. For example, a triangular road sign stands for danger. Similarly, a symbol captures and conveys meaning, such as a number or a letter (Smidt, 2009). Migrant teachers make use of cultural tools that they bring from their home cultural context and simultaneously learn about and employ new cultural tools within the host cultural context. These cultural signs and symbols facilitate the interactions or mediations between the teachers and their dual sociocultural contexts.

Te Whāriki also draws upon the sociocultural theoretical perspectives of Lev Vygotsky and Jerome Bruner within approaches to ECE (MoE, 2017). The framework's foundation is laid upon Vygotsky's idea, developed further by others, that learning "occurs in relationship with people, places and things, mediated by participation in valued social and cultural activities" (MoE, 2017, p. 61). This holds true for children and teachers since it applies to learning and development at all stages of life. Teachers' environmental identity and beliefs about Environmental and Sustainability Education would also be determined by their sociocultural context both in their childhood experiences of their home culture and as adults in their host cultural context.

The framework also highlights the need for teachers to "understand the importance, for young children's learning, of materials, artefacts and tools and the signs and symbols of societies

and cultures” (MoE, 2017, p. 61). This understanding is especially significant for the large number of migrant teachers who teach in a sociocultural context different from theirs. They are expected to learn about, understand, and include the cultural material, tools, and symbols of the new sociocultural context into their educational philosophies and practices. In the Aotearoa New Zealand context, this would mean a better understanding of the two primary cultures, the broader national Aotearoa New Zealand (Pākehā) culture and the Indigenous Māori culture. In terms of Environmental and Sustainability Education, this implies an authentic comprehension and inclusion of local and Indigenous environmental and sustainability philosophies and ideas into their teaching practice.

Additionally, meanings, understandings, and relevance of connections between environment and education vary from one culture to another. Migrant Indian teachers face this critical task of self-reflection to explore their perceptions of the natural environment, their relationship with it, and links between environment and education across two cultural contexts or identities. They also need to develop clarity about how they might translate these understandings into their teaching practices (Sauvé, 2009). This process determines how they understand environmental identity and the role it plays in children’s development and their own. Thus, sociocultural elements appear to be integral to environmental identity development. This is particularly significant for teachers who transition from one sociocultural context to another, which impacts their environmental identity development and transition as they negotiate between their home and host cultural contexts.

In addition to Sauvé’s (2009) ecological model, I draw upon Bronfenbrenner’s (1979) ecological systems theory to interpret migrant Indian teachers’ environmental identity and the related transitions from a sociocultural lens. I also explore environmental identity transitions through their development of a sense of place in their new cultural context and how their funds of identity (Esteban-Guitart & Moll, 2014) or Indian philosophical orientation can enrich their participation and collective experiences in the ECE context.

Bronfenbrenner’s Ecological Systems Theory

Given the complex cultural crossovers and transitions, Indian teachers’ environmental identities might undergo smooth transitions, experience challenges, or face resistance. An in-depth understanding of their environmental identities requires an examination of their ecosystem (Bronfenbrenner, 1979).

Urie Bronfenbrenner (1979) developed the ecological model of human development as a theoretical perspective to understand development in context. He proposed the study of human development within the immediate and remote environmental context of an individual, rather than in artificial laboratory settings. He emphasised the interaction between a person and their changing environment, and viewed the environment as intrinsically connected to individuals and hence used the term ecology for the environment or context (Rosa & Tudge, 2013). According to Bronfenbrenner (1979), the ecology of human development was the study of “progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings” (p, 21).

Bronfenbrenner (1979) conceived this ecological model as a set of nested structures akin to a set of traditional Russian dolls, with the individual at the innermost core of the model. The most proximal system or setting surrounding the individual is called the microsystem. The microsystem includes the immediate physical environment of the child such as the home, the school, early learning setting, playground, place of work. The microsystem also includes the people with whom an individual interacts directly. The physical characteristics of the immediate environment, the people within that ecological system, interpersonal relationships, and the connections between all these elements would influence an individual’s development. The mesosystem was defined as the links or interrelatedness between two or more microsystems or the most immediate settings and people. “A mesosystem is thus a system of microsystems” (Bronfenbrenner, 1979, p. 25). For instance, for a child this would include interactions between the home, school, and neighbourhood context. The exosystem refers to the next system that does not include the developing person as an active participant, but they influence this system and are influenced by changes that occur within it. For example, for a child this could include the parents’ place of work or parents’ friends. The larger macrosystem refers to the individual’s culture or subculture that influences their development directly or indirectly. For example, the broader political, economic, social, religious, and educational culture that determine the ideology or belief system of the individual.

Bronfenbrenner’s bioecological model (Bronfenbrenner & Morris, 2006) is also one of the theoretical underpinnings for *Te Whāriki*. The curriculum framework draws upon this theory to highlight the significance of context and relationships in early learning. It also considers how “kaiako (teachers) participate in, and may influence, some or all of these contexts” (MoE,

2017, p. 60). This consideration is relevant across all areas of learning and development including Environmental and Sustainability Education. Teachers can have a significant influence on children's environmental identity development while simultaneously working on their own. Their environmental identities, beliefs and practices will influence children's identities, and in turn children's interests, inclinations and involvement in environmental and sustainability ideas will feed into the teachers' identities. The teachers' and children's environmental identities and learning could be seen as reciprocal.

Thus, the ecological systems (Bronfenbrenner, 1979), and especially the microsystem and the mesosystem become central to children's and teachers' environmental identity development within the context of Environmental and Sustainability Education. For migrant teachers, these inner systems could be critical in terms of their early years' experiences *in, about, for, and with* the natural environment. Significant learning experiences primarily within the microsystem might become determinants of their environmental identities and related teaching philosophies, ideas, and practices as migrant teachers in the host cultural context (Ernst, 2014). Since teacher identities are likely undergoing transitions, they may be experiencing co-existing dual environmental identities, one that is based in (and that they bring from) their home cultural context, and another that they are developing in their host cultural context. Their dual, co-existing ecosystems deserve consideration as they are both likely to influence their environmental identity.

Additionally, their ecosystems are likely to include their cultural identity as Indian teachers, as well their identity as Aotearoa New Zealand ECE teachers in the local context (Bronfenbrenner, 1979). Their interactions in and with these systems impact on their teaching ideas, philosophies, and practices. Thus, they may be required to navigate these co-existing ecosystems where each context desires and necessitates diverse identities, especially with respect to the environment. They would have to find a balance between what they bring from their own culture and what they learn in a new one. In order to nurture a sense of place within their host culture ecosystem, these teachers may need to consider their knowledge of place, observation and comprehension of interrelatedness within the natural world around them, and a sense of care for the new context in order to be able to promote children's environmental identity (Orr, 2013).

Sense of Place

A sense of place for migrant teachers can enable the process of learning more about and immersing themselves into the Aotearoa New Zealand cultural context or their host ecosystem (Bronfenbrenner, 1979). It can help them retain a connection with their home cultural identity while enabling the development of a host cultural identity. The idea of ‘place’ has been found to be central to environmental sustainability from teachers’ perspectives (Duhn, 2012a; Ritchie et al., 2010). Developing a sense of place is an effective strategy that enables teachers to overcome the challenges of making connections between global environmental issues and local environmental concerns. This perspective points towards the need to understand how a sense of place is defined and structured for migrant Indian teachers who are constantly negotiating between their home and host cultural identities.

Funds of Identity

Despite the complex cultural crossovers migrant teachers undergo, as professionals, they are expected to use their teaching skills in any cultural context and setting, irrespective of whether they originally identify with the particular culture or not (Elbaz-Luwisch, 2004; Yip et al., 2022). Teachers who make a transition from one cultural context to another have a pedagogical awareness and experience that is different from local teachers. They bring their past experiences and identities with them and build upon these in the new context. In her study with immigrant teachers in Israel, Elbaz-Luwisch (2004) narrated stories of individuals who were teaching in a culture different from the one in which they were educated, and their development of a sense of place. She found that over time teachers developed their own unique and individualised practical knowledge funds based on their personal life experiences as individuals and teachers. The knowledge acquired during teacher education was revisited and reworked within the context of everyday teaching practice and interactions (Elbaz-Luwisch, 2004; Yip et al., 2022).

Similarly, inspired by the ‘funds of knowledge’ approach (Moll et al., 1992), Esteban-Guitart and Moll (2014) proposed a ‘funds of identity’ theory based on a Vygotskian perspective. A Vygotskian perspective on identity is based on cultural artifacts and beliefs where people develop a sense of self or lived experience through participation in sociocultural exchanges. Esteban-Guitart and Moll (2014) theorise that identity or a sense of self is a dynamic organisation of historical and sociocultural conditions, institutions, artifacts, significant others,

practices, and activities. Therefore, understanding of identity requires consideration of sociocultural beliefs, knowledge, and practices relevant to a particular group of people. Funds of identity are “historically accumulated, culturally-developed, and socially distributed resources that are essential for people’s self-definition, self-expression, and self-understanding” (Esteban-Guitart & Moll, 2014, p. 37). These resources are also referred to as a box of tools and signs (cultural products and symbolic resources) used to define oneself. These funds of identity are of five major types: Geographical funds of identity (geographical features or landmarks); Practical Funds of Identity (meaningful activity such as work, sports, music); Cultural Funds of Identity (national symbols or social categories such as age, gender, ethnic group); Social Funds of Identity (significant others such as relatives, friends, colleagues); Institutional funds of identity (social institutions such as marriage, family, religious institution).

Within the context of my study, for migrant Indian teachers, the cultural funds of identity would be significant and would include their sociocultural beliefs, knowledge, and practices that define their cultural selves or identity. Since their environmental identities would be based upon their cultural identities their cultural funds of identity would largely influence their environmental identities as well. Closely related would be the social funds of identity where their environmental identities and experiences might have been influenced by significant others such as their parents or childhood teachers. Another interrelated aspect could be the institutional funds of identity considering the influence of religious beliefs across all spheres of life in the Indian sociocultural context, and the connectedness to nature in certain religions. Geographical funds of identity might also feature as important elements of their home context where they identify with or recall experiences with nature in particular places of being. Along with these various funds of identities, it was of interest to explore whether these migrant teachers bring with them and develop what might be construed as environmental funds of identity and how it relates to their cultural funds of identity. A funds of identity approach focussed on cultural, geographical, social, and institutional funds of identity would be incomplete without due inclusion and acknowledgement of the Indigenous sociocultural philosophies and knowledges that are under consideration. In this case, these ideas would refer to Indian traditions of thought, philosophy, and knowledge systems (discussed at the beginning of Section 2.8.3.).

In multicultural educational contexts such as in Aotearoa New Zealand, migrant teachers likely tap into Indian ways of thought and cultural funds of identity to make smoother cross-cultural transitions and meet the inherent challenges. These teachers bring with them their “experiences of biogeographies, sociocultural and socioecological histories” (Eames & Cutter-Mackenzie, 2017, p. 69) that may differ significantly from the host cultural context. This might create environmental dissonance. On the other hand, the migrant teachers’ connections between their home and host countries could facilitate inter-country transfer of Environmental and Sustainability Educational ideas and approaches (Eames & Cutter-Mackenzie, 2017). For instance, teachers in India are generally educated and practice in a manner different from that of Aotearoa New Zealand teachers, and hence develop a context specific identity. There is variation in terms of the ECE curriculum, goals, and daily practices, such as learning documentation and parent-teacher interaction (Hegde & Cassidy, 2009; Rana, 2020). It is likely that their Indian national cultural identity and context influence their professional philosophy and practice as ECE teachers (Shuker & Cherrington, 2016). However, like all migrant teachers, Indian teachers also bring with them their funds of, cultural, and professional identities (Esteban-Guitart & Moll, 2014; Rana, 2020). One of these strengths is their rich experience of highly diverse educational settings. First, migrant Indian ECE teachers practicing in Aotearoa New Zealand themselves hail from diverse subcultural contexts in India, thus bringing in their varied personal and professional perspectives on environment, culture, and education (Esteban-Guitart & Moll, 2014). Second, akin to my experience, most teachers also bring varied experiences of studying and teaching in highly multi-subcultural contexts due to the vast cultural diversity within their country itself. Their own childhood experiences and teaching experiences with children from diverse sociocultural backgrounds equip them with skills and tools to consider varied perspectives and sensibilities. This enables the teachers to cater to the individual and collective needs of the children. It also becomes a psychological cultural tool (John-Steiner & Mahn, 1996) that the teacher can employ in multicultural educational contexts such as Aotearoa New Zealand ECE settings.

Diverse perspectives and ways of doing and living can provide a wealth of knowledge and resources that can be used to add to the existing ideas and pedagogy (Rogoff, 2003). Thus, culturally-diverse teachers’ funds of identity (Esteban-Guitart & Moll, 2014) can contribute to the multicultural pedagogy of place and kaitiakitanga in Aotearoa New Zealand ECE. A critical element is support for migrant teachers to experience and become aware of their new environment and related issues in their host country.

2.8.4. Section Summary

The Aotearoa New Zealand ECE context is increasingly multicultural, and this will continue as a result of the various immigration and educational provisions in the country. As a result, migrant Indian teachers are an increasingly high proportion of the Aotearoa New Zealand multicultural ECE context. *Te Whāriki* (MoE, 2017), the early childhood curriculum framework, makes clear connections between identity, kaitiakitanga, and culture. ECE teachers work towards the development of all the three aspects for children. This places significant responsibilities on teachers which likely becomes complex for migrant teachers as they use a combination of their home and host cultural lenses to interpret and implement the curriculum framework in a new multicultural setting. The theoretical perspectives and concepts presented here facilitate this process, where a sense of place and teachers' funds of identity enable them to explore and strengthen their environmental identity in their host cultural context using the pedagogical, environmental and sustainability philosophies, knowledge, strengths, and skills they bring with them from their home cultural context. This negotiation and possible transitioning of the environmental identity necessitates a study of their socioecological contexts as a site for these environmental identity transitions, learning, and development. However, as the reviewed literature here shows, migrant teachers and their cultural identity have increasingly become the focus of research in ECE. However, research studies that have been published on teachers' environmental identity in general and especially in ECE are few and far between.

2.9. Chapter Summary and Theoretical framework

A theoretical framework is the underlying structure that informs a research study (Merriam & Tisdell, 2016). It is the theoretical lens through which a researcher plans and implements the research, and analyses and reports the findings. Environmental identity and culture (with reference to migrant Indian teachers) in early childhood Environmental and Sustainability Education are the pillars of my research study. My theoretical framework was developed based upon theoretical perspectives in these areas of inquiry.

The key ideas that underpin this thesis are:

- The world is experiencing a range of environmental challenges.

- Environmental and Sustainability Education is seen as an important strategy to respond to these challenges.
- ECE is a critical period for development. It has been argued that learning at this stage is a vital foundation for the rest of life. Therefore, Environmental and Sustainability Education at this stage is fundamental.
- In Aotearoa New Zealand ECE is structured and implemented through various types of teacher-led and parent-led services. All ECE services are guided by the curriculum framework *Te Whāriki* as the policy document.
- *Te Whāriki* includes a range of essential provisions and implications of including and addressing young children's connections to the natural environment through a sense of kaitiakitanga.
- In ECE, and in *Te Whāriki*, the teachers' role is recognised as fundamental. A teacher's values, beliefs, knowledge, and actions in relation to the environment could therefore influence a child's environmental thinking, feeling, being, and acting.
- Environmental identity is proposed as a key construct for thinking about one's relationship with the natural environment that directs environmental perceptions and actions (Clayton, 2012; Thomashow, 1995). This environmental identity is significant for both teachers and children in ECE.
- For migrant Indian teachers, environmental identity is determined and influenced by their home and host cultural contexts.
- Indian teachers' cultural and environmental identities are likely to be shaped by Indian cultural, environmental, and educational philosophies along with their transitioning identities in Aotearoa New Zealand.

I draw upon various theoretical constructs to create a framework that reflects these key ideas emerging from my literature review and leads me to my research questions. Sauvé's (2009) model on personal and social development of the self in relation to other humans and the environment is central to the framework used in the study. It is used to explore the convergence of identity, environment, and context where identity is seen as constructed within the psychosphere, sociosphere, and ecosphere. Teachers' environmental identity, in the context of my research, is seen to intersect with their sociocultural contexts. The ecological vision of human development provides a lens to interpret a teacher's relationship between the self, the sociocultural context, and the environment as a basis for Environmental and Sustainability Education. This research is therefore interested in how the sociocultural factors

intersect with environmental identity and interpreting the cultural orientations and transition of the teachers' environmental identities, using ideas from Bronfenbrenner (1979). In addition, for migrant Indian teachers it might be important to consider their sense of place (Pelo, 2014b; Penetito, 2009) and funds of identity (Esteban-Guitart & Moll, 2014) in terms of their Indian or Eastern identity and philosophies.

These various theoretical underpinnings were used as a framework to collect, analyse, and interpret the data in a comprehensive manner and as a lens to facilitate holistic interpretation of teachers' experiences. This nature of the framework enabled connections between the various types of data (teacher interviews, manager/head teacher interviews, ECE setting observations, Learning Stories analysis) and the central aspects of environmental identity, culture, and migrant Indian teachers in early childhood Environmental and Sustainability Education.

The theoretical framework presented here emerged from my literature review of the research area, leading to my research questions.

2.10. Research Questions

This chapter establishes the significance of and need for researching Indian teachers and environmental identity in the Aotearoa New Zealand ECE context. This research was an effort towards addressing this research need by addressing the overarching question:

What are migrant Indian teachers' perceptions of the influence of cultural identity on their environmental identities in Aotearoa New Zealand ECE?

The specific questions used to guide the study were:

1. What are migrant Indian teachers' perceptions of the role of environmental identity in the Aotearoa New Zealand ECE context?
2. What are migrant Indian teachers' perceptions of the influence of their own cultural identities on their environmental identities as they practise in Aotearoa New Zealand ECE?
3. How do migrant Indian teachers perceive their cultural and environmental identities influence their practice in the Aotearoa New Zealand ECE context?

3. Methodology

This chapter provides a detailed description of the various methodological components of this research study. The chapter begins with a discussion on the interpretivist paradigm within which the research was conducted, and my positioning as the researcher. Then it presents the research design, data collection procedure and tools and the data analysis framework. The next two sections include a discussion on the issue of trustworthiness and ethical procedures followed for the study. A summary of the methodology concludes the chapter.

3.1. Interpretivist Paradigm

A paradigm serves the purpose of clarifying and organising thinking about the research (Cohen et al., 2018). This research aimed to study migrant Indian early childhood teachers' understandings and perceptions of their culturally-oriented environmental identities in Aotearoa New Zealand ECE. The goal was to understand their lived experiences from their point of view within two sociocultural contexts (India and Aotearoa New Zealand) and learn about how the teachers made sense of, or constructed the realities of their teaching practices, that is their environmental identity within their cultural framework/s (Mukherji & Albon, 2015; Schwandt, 1998). This approach helped investigate questions like: "Who is the self that teaches?" (Palmer, 1998 in Taylor & Medina, 2013, p. 5). More specifically, it enabled me to investigate the question of who is the environmental self that teaches *in, about, for, and with* the environment.

Since the purpose of the study was to understand teachers' interpretations of their realities and uncover their meaning-making processes, this research fell within the interpretivist paradigm. The paradigm implies that there may be multiple interpretations of an experience. It aims to understand the subjective world of human experience where the context is vital; where knowledge or reality is not discovered but socially constructed (Guba & Lincoln, 2005; Kivunja & Kuyini, 2017). This worldview is concerned with gaining a deep insight into a particular issue rather than being concerned about generalisations (Mukherji & Albon, 2015). As an interpretivist study, this research assumed a relativist ontology, a subjectivist epistemology, a qualitative methodology, and a balanced axiology, as depicted in Table 3.1 (Guba & Lincoln, 1994; Kivunja & Kuyini, 2017).

Table 3.1 *The Paradigmatic Features of this Study*

Research Paradigm	Ontology	Epistemology	Methodology	Axiology
Interpretivist Paradigm	Relativist: <ul style="list-style-type: none"> • Realities are multiple and context bound. • Reality is socially constructed. • Researcher and participant interaction can facilitate exploration and meaning making of these realities. 	Subjectivist: <ul style="list-style-type: none"> • Researcher and participant engaged in interaction. • Interaction with participants informs the meaning making of data. 	Qualitative: <ul style="list-style-type: none"> • Dialectical • Data gathering: interviews, observations, and document/ documentation analysis. 	Balanced: <ul style="list-style-type: none"> • The research and the researcher are inseparable. • Research reflects researcher's values. • Attempt to present a balanced report of the findings.

The purpose of my research was to build local understandings of teachers' experiences within the cultures of their ECE settings and practices. I wanted to take an in-depth look at Indian teachers' beliefs and practices with reference to the natural environment. This was achieved through an exploration of meanings teachers ascribe to their actions, in other words why they do what they do within their specific contexts. I wanted to examine teachers' lived realities through their perspectives, as told by them in their words. These realities, although unique and individual for each teacher, were also subjective for them as a cohort of Indian teachers working in Aotearoa New Zealand ECE. Teachers shared their stories with me in the form of interviews, enabling me to record their realities from their perspectives. In turn, these interactions enabled me to collect data and make meaning of the data. My interpretation of their realities was also socially constructed through my interactions with them and their contexts, and my own personal and academic experiences as a researcher (Kivunja & Kuyini, 2017). In other words, as a researcher, I investigated teachers' realities through engagement with the participants (Guba & Lincoln, 2005) by virtue of the interaction between our socially constructed interpretations and realities. Thus, the ontology and epistemology for my research was based on my interpretations of teachers' interpretations of their socially constructed experiences and realities.

3.2. Researcher Positioning

Researcher positionality recognises that the researcher is part of the social world they research and that they are not separate from the social processes studied (Holmes, 2020). As opposed

to a positivist approach, this is an integral feature of the interpretivist paradigm using qualitative methodology. The researcher aspires to understand participants' construction of meaning by acknowledging and reflecting upon their position in the process. It is reasonable to expect that the researcher's personal background including cultural orientation, beliefs, gender, and educational background will affect the research process (Bourke, 2014; Manohar et al., 2019).

As a researcher, I need to acknowledge and make allowance for my views, values, and beliefs for designing, conducting, interpreting, and presenting this study (Holmes, 2020). In order to identify and articulate my positioning as a researcher, I need to be reflexive. Reflexivity requires that I acknowledge and disclose myself as the researcher, along with my part in the research (Cohen et al., 2018). Although reality can never be described truly objectively (Dubois, 2015), reflexivity helps reduce bias and facilitates trustworthiness of the research.

For the intent of clarifying my positionality for this research, I will locate myself within the study context and process, and in relation to the participants. I identify as an Indian foremost. Although I am a Hindu woman, I am not particularly religious. However, I do identify with the spiritual beliefs and values associated with Hinduism. A deep sense of affiliation with nature stems from the ancient spiritual traditions embedded in the country's ancient way of life. I was born and raised in the northwestern Indian state of Rajasthan. The state is geographically diverse including the Thar Desert or the Great Indian Desert and the Aravalli Range of hills. My hometown lies nestled among the hills of the Aravalli Range and comprises a network of numerous interconnected lakes. The walled city is the erstwhile capital of the Kingdom of Mewar and hence a place of historical, cultural, and natural significance with well-conserved palaces, forts, and gardens.

I come from what is considered an upper-middle-class background in India's dynamic socioeconomic structure, an indicator that is updated every year (Ayoub & Raja, 2023; Majumder, 2021). My parents were both University-educated, in addition to my mother having completed her final year of high school in Canada, while my father attended one the most prestigious boarding schools in the country founded in 1857 and modelled on the British education system, hence referred to as the 'Eton of India'. The legacy of this 'polished' education continued with me, my younger sister and my younger brother attending the very same exclusive boarding school. I went through one of the national education systems

followed commonly in urban Indian schools with English as the medium of instruction and a compulsory subject throughout.

I spent my childhood in the family's ancestral home with a canal flowing through connecting the two lakes on either side of the residence. It was an expansive area with abundant greenery including eucalyptus and neem trees, silver oaks, bottle brush, mango orchards, rose gardens, and a variety of vegetation. We kept geese and poultry and had frequent visitors such as snakes, monkeys, mongooses, and badgers among others. I have vivid memories of watching my grandfather gardening and tending to his roses. My days were spent surrounded by this naturally rich and tranquil environment where I was free to explore the grounds, climb trees, and immerse myself in the green spaces around me. My summer vacations were spent at my maternal grandparents' home in the neighbouring state with a similar home environment. En route my father pointed out and identified as many birds on wires and trees as possible along the road, something I do to this day while travelling. We learnt horse riding as we spent time at my uncle's stables, heard the calls of the peacocks perched upon the trees, and learnt all about the migratory Painted Storks that nested on the enormous Ashoka tree by the residence wall. Daily walks and drives in the city's nature park and visits to the beach with the family were a regular feature of our annual stay there. I have fond memories of my grandfather taking me for rides and walks around the city's green spaces and gardens repeatedly.

All these childhood experiences in our homes and in both cities encouraged my strong affinity with the natural environment, flora, and fauna, and shaped an identity stemming from a sense of place. At the same time, I acknowledge the fact that I was from a family and culture that afforded me certain privileges and particular experiences that have led me to who I am today, how I view the world, and what brought me on this journey. My cultural and environmental identity and experiences became personal and academic triggers (discussed in Section 1.4.) resulting in my decision to take on this research study. My western-oriented education would also have a bearing on my worldview, especially in the context of this academic pursuit. As I reflect upon my school and University education, although Indian cultural and educational traditions were part of the curricula and institutions, they did not particularly focus on our Indigenous knowledge systems, something that appears to be changing gradually today. However, my positioning has been taking shape and developing further since beginning my doctoral research, moving to Aotearoa New Zealand, recognizing

similar colonial histories and influences in the country, and taking a more critical perspective on all aspects of this research study.

In relation to the participants and the research process, India is a highly diverse country in terms of cultural, geographic, religious, socioeconomic, and educational subcultures. This has a bearing on how my participants might have had diverse life experiences and opportunities that shaped their cultural and environmental identities. It is plausible that these cultural and environmental identities and experiences specific to me might in some way influence the lens through which I view and analyse participant data and interpret their experiences.

Although I have the same religious orientation as some participants, we do not identify with the same sub-socio-religious-geographic cultures. However, for the context of this research, we share the larger national sociocultural context of our home country, despite varied religious affiliations and dispersed geographical origins from within the country. This cultural commonality (Song & Parker, 1995) afforded me an insider perspective on the teachers' sociocultural experiences and interpretations. This meant that I had a 'lived-familiarity' with and a priori knowledge of the sample group (Holmes, 2020, p. 6). This insider perspective enabled an authentic interpretation of the participants' cultural orientation; an ability to formulate meaningful and insightful probes for the interviews, and to build trust and connections easily (Holmes, 2020; Manohar et al., 2019).

Additionally, shared language/s was critical in how quickly I could establish rapport and ensure a level of comfort and trust with the participants. Although all participants used English as the preferred language for the interviews, the ease and comfort of being able to switch between languages (English-Hindi; English-Gujarati) was an integral part of the process. Insider knowledge of the shared culture also facilitated any non-verbal cues or colloquial language (Holmes, 2020) pertinent to the interviews and interactions.

Conversely, a shared sociocultural context meant that I needed to be conscious of my preconceived notions, biases, and personal experiences within that context and acknowledge their effect in any way throughout the process. As an insider, I had to work conscientiously upon acknowledging and avoiding any bias or assumptions about subcultural groups as far and as often as possible and present the participants' perspectives the way they interpreted them.

As for educational backgrounds, I am a qualified teacher from India who has an academic ECE qualification from Aotearoa New Zealand and 3 years' experience in relief teaching in ECE settings. I share the same Indian educational context with the participants as far as schooling and tertiary education are concerned. We also share a common academic ECE background within the Aotearoa New Zealand context. My postgraduate qualification and relief teaching experience in ECE provided the academic foundation upon which I based my study. It was also this professional knowledge that enabled a better understanding of teacher experiences and perspectives that I intended to explore. Additionally, my previously gained academic exposure to, and understanding of, *Te Whāriki* as well relief teaching experience was of critical importance, as it laid the foundation for conceiving, planning, implementing, and interpreting my research. This knowledge was the strong foundation I shared with the participants. It enabled them to share experiences that I was able to understand and interpret within the context of the curriculum.

Another aspect that needs consideration is the power dynamics between participants and the researcher. As the researcher it was important for me to understand and be aware of ways in which this power might have been manifested and negotiated during the research and interview process (Merriam et al., 2001). Although the participants were qualified teachers and hence in a more 'authoritative' or 'knowledgeable' position in the context of the study, some voiced initial concern and expected to 'prepare' for the interview with some form of interview schedule that might be shared in advance of the interview. This is when I became aware of their conception of my position of 'power' as that of the 'researcher/more knowledgeable'. I decided to address this by assuring them of my role as the 'inquirer' who was seeking to know and learn more about their perspectives and experiences as qualified, certified, experienced ECE teachers in Aotearoa New Zealand. In this case, my relief teaching experience only made me a peripheral participant with limited insider knowledge, as compared to the participants who were full-time permanent ECE teachers. I conveyed this to all participants so as to disrupt the perceived power balance and to show them how they were in a better position to inform me as the researcher.

An important implication on this equitable researcher-participant power equation was the necessitated sample recruitment method. As I began the research, the research climate required me to use snowballing to identify and access participants. According to Cohen et al.

(2018), snowball sampling reduces asymmetrical researcher-participant power relations as the interactions are often built upon the basis of social rather than professional relationships. I believe this was also true for the interaction with several participants in my study.

My interest and drive to pursue a doctorate in the area of Environmental and Sustainability Education, and environmental identity specifically, reflects my positioning as an environmentally inclined person with a strong affiliation with and sense of responsibility towards nature. I have reflected upon my sense of self in association with the natural environment within the context of early learning in India and Aotearoa New Zealand. Additionally, working in Aotearoa New Zealand ECE and having my child attend an ECE service here, I have often found myself exploring my own environmental identity, which is rife with strengths and challenges. I wondered if other migrant Indian teachers had similar or different experiences to mine. However, having what I believe is a strong or positive environmental identity myself, would influence my expectations, perceptions, and interpretations of Indian teacher participants' experiences in this respect. My researcher bias could have presented an inclination to see the respondents in my own image due to our cultural, academic, and professional similarities (Cohen et al., 2018). I needed to be aware of these preconceived ideas and beliefs and ensure that I accounted for them in my research process, data collection, and interpretation of findings. I had to clarify if and how any of my personal beliefs and views as an environmentally inclined Indian teacher, with diverse personal upbringing and experiences, might have influenced my research processes.

Besides the research context and processes described above, I also need to be cognisant of my positioning as researcher while representing participant interpretations. Interpretation includes how the participants make meaning of their own experiences and the ways in which the researcher accounts for these and their own experiences (Bourke, 2014). As the researcher, I needed to be conscious of, and account for, my positioning within the interpretation of participant experiences. I needed to reflect upon, and be aware of, how my personal and cultural background and experiences may shape the direction and interpretation of the study (Creswell & Poth, 2018; Mackenzie & Knipe, 2006).

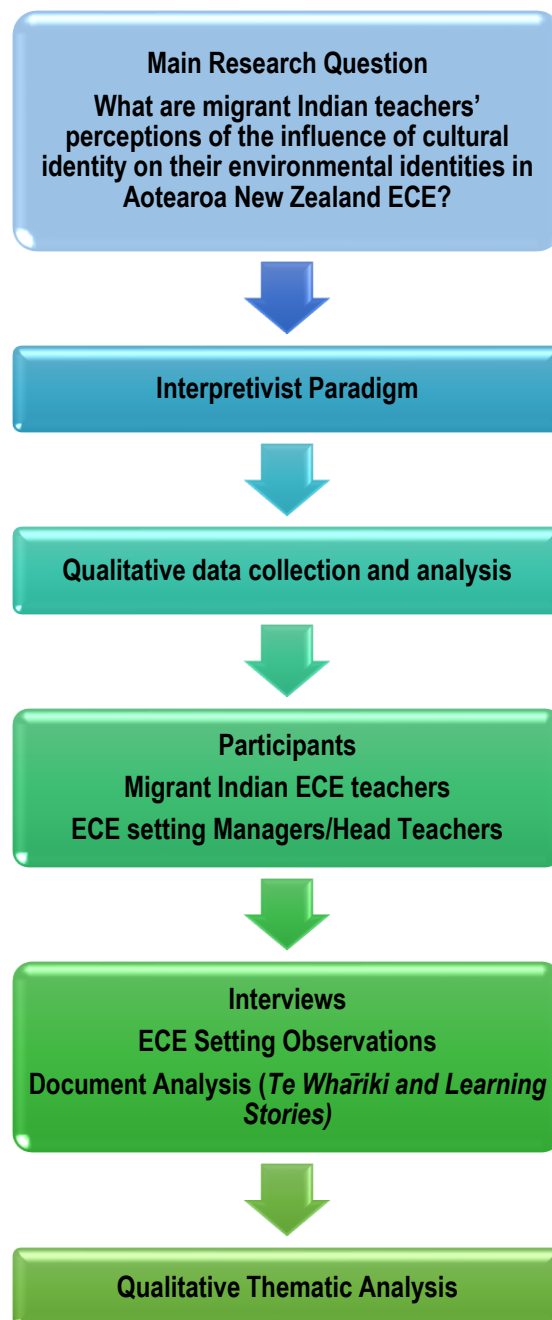
3.3. Research Design

Although interpretivist studies are considered qualitative in nature, a purity of methods is ‘potentially impossible’ (Mackenzie & Knipe, 2006) in social science research. A qualitative or quantitative approach reflects the primary or multiple data collection and analysis methods rather than an overarching category for the research. These methods can be combined in varying degrees appropriate to the research questions.

The purpose of my study was to understand the meaning teachers constructed of their own experiences and the meanings teachers attributed to their environmental identities within particular cultural contexts (Creswell & Poth, 2018; Merriam & Tisdell, 2016). In order to explore the meanings of their socially constructed experiences, qualitative data collection and analysis methods were considered most suitable. For an interpretivist study such as this, qualitative methods enabled comprehensive data gathering and analysis of teachers’ understanding and perceptions of environmental identity, determined by cultural contexts in India and Aotearoa New Zealand.

Qualitative methods enable an in-depth understanding of complex socially constructed realities. They help build a larger holistic picture of the research issue or participants through multiple perspectives and sources of data (Creswell & Poth, 2018). The participants are purposefully selected to make meaning of and provide perspectives on their thoughts or practices, while taking into account the cultural and contextual factors of participants when interpreting these experiences. The researcher undertakes the responsibility to understand, describe and explain the various interpretations of the participants and sociocultural phenomena under study (Cohen et al., 2018). Qualitative methods also acknowledge that the research and the researcher are inseparable. The researcher focusses on the meanings participants ascribe to their experiences, while also accounting for their positioning within the research process. Qualitative methods are well suited to the purpose of learning about others’ understandings and interpretations (Merriam & Tisdell, 2016) as this research aimed to do. They facilitate an in-depth, intricate, and detailed understanding of meanings, actions, attitudes, and behaviours as perceived and interpreted by the participants. Such methods would enable participants to voice themselves and provide the researcher with scope to probe for ideas that may not be visible in overt behaviours and actions (Cohen et al., 2018). Figure 3.1 outlines the research methodology.

Figure 3.1 *Research Methodology*



3.4. Data Collection Procedures and Tools

Qualitative data collection methods and tools were developed in congruence with an interpretivist study, aimed at obtaining rich description of teachers' meaning-making processes in a given sociocultural context. This section presents the sampling process, research participant details, and the data collection tools. In addition, I discuss the challenges

that emerged through the process essentially due to the sudden onset of the COVID-19 pandemic, and the impact this had on my study. The resulting lockdown in the country significantly affected my research process, especially as I was about to begin data collection at the time.

3.4.1. Sampling

Interpretivist studies with qualitative designs aim to study a specific group of individuals and their interpretation of their experiences. Similarly, this research needed a representative sample for the primary purpose of exploration rather than generalisation (Cohen et al., 2018). This interpretivist research study was designed with a focus on, and hence requirement for, a specific group of teacher participants. Therefore, I used purposive sampling for this study. Purposive sampling involves the identification of specific participants that represent the characteristics of the group that is studied (Cohen et al., 2018). Such a selective sample would be representative of the population and suitable for focusing on the specific questions my research intended to explore. I needed to locate and recruit Indian origin teachers who had gained an ECE teaching qualification and certification in Aotearoa New Zealand and were now working in ECE settings here.

The original plan for sample identification and recruitment was to send out emails to the managers/head teachers of potential local kindergarten and other ECE service providers asking for an appointment to talk about the research. However, because of my earlier ECE qualification, relief teaching experience and my son's participation in the local early learning context, I was aware of the large number of Indian teachers employed by certain ECE service providers. At the outset, I decided it would be an effective strategy to approach these identified service providers.

I identified and approached one such ECE service provider to recruit some Indian teachers. My initial discussion with the regional manager of this organisation came to a complete halt when the first lockdown was implemented in March 2020. The sudden lockdown resulted in a mutual decision to postpone the data collection until ECE services reopened. Following the lockdown, the process was further postponed due to ECE settings adopting new routines and protocols outlined by the Aotearoa New Zealand Government's COVID-19 response framework (New Zealand Government, 2022). Although I resumed talks with the manager after the lockdown, this period of delay was further extended due to restructuring within their

early learning organisation resulting in the teachers becoming preoccupied with adjustments to the new organisational structure, and possible reluctance to take up an additional task of participating in my research. The sudden closure of all ECE settings had also limited the opportunity to identify other prospective participants. Therefore, even after accounting for the lockdown duration and allowing for a readjustment period for ECE settings, I still could not get access to any participants up to five months after I approached the first prospective organisation. The challenges presented by the COVID-19 pandemic and organisational restructuring led to the suspension of data collection for the better part of 2020.

The situation was not within my control for the next several months in terms of search for and access to participants and ECE settings. In order to mitigate this challenge, I conducted an online search for ECE settings to locate Indian teachers among their staff. I approached some managers/head teachers and received a mixed response. Some ECE service providers responded positively, which allowed me to set up a couple of interviews within the next few months. However, this organisational or top-down approach, where I had approached the manager/head teacher of an organisation, did not yield results with most ECE settings. This was understandably so since they were faced with mammoth challenges and additional workload because of the pandemic.

Consequently, I decided to use the snowball method of recruiting participants (Mutch, 2013). Researchers employ snowball sampling in order to identify a small number of individuals that meet their participant criteria. These initially identified participants help the researcher identify further participants, and this process is repeated until the desired number of participants are obtained (Cohen et al., 2018). I began sampling with the one Indian teacher I was acquainted with professionally. I used what (Campbell, 2021) terms “Referrals: those who were referred via professional, personal or academic relationships but where the individual was not already directly known” (p. 573) to the researcher. I contacted some other Indian teachers that I knew of through my ongoing work as a relief teacher in ECE settings. This approach helped me gain access to a few more participants and I was able to begin my data collection towards the end of 2020.

In my case, snowball sampling proved useful after the unsuccessful attempts to obtain participants from a single ECE service provider. Additionally, being an outsider in the research context appeared to be another challenge to obtaining participants (Cohen et al.,

2018). Since my communication networks in the local ECE context were undeveloped, it became difficult to gain access to ECE settings. The snowballing method proved useful in identifying and recruiting participants and balancing the researcher-participant power relations as discussed in Section 3.2. The top down or group approach to obtain participants might have created a bigger power differential considering the participants were recruited through the manager/head teacher or organisation and might have felt obliged and duty-bound to consent to participate.

Eventually, six of the nine Indian teacher participants were identified through snowballing. One teacher from a kindergarten was approached through the respective Kindergarten Association regional manager. I introduced my intended research and obtained consent to approach and request participation from Indian teachers within the Association. Only one Indian teacher was identified among the kindergartens in the area. I made an appointment with the shortlisted kindergarten head teacher, discussed the study, and invited their participation. Following the head teacher's consent, I met with the Indian teacher from the kindergarten to discuss the research and gain her consent. As for the two remaining teachers, I identified an ECE setting with several Indian teachers and approached the director. I followed a similar process where I approached the manager and requested consent from them and the Indian teachers for their participation. Two of the three Indian teachers agreed to participate in my study. Thus, using a combination of snowballing and organisational approach, I was able to secure a sample of nine Indian ECE teachers.

3.4.2. Participants

The primary participants for my research were Indian-born migrant teachers with an Aotearoa New Zealand ECE teaching qualification, working in teacher-led services including kindergartens or ECE settings. Given the distinctions between types of ECE services in the country, the affordances given to environmental and sustainability education could be quite different among the setting types (as discussed in Section 2.3.). Hence the aim was to get teachers from diverse settings to represent the various types of services. However, the circumstances described above made the recruitment of a diverse and representative sample a challenge. Additionally, my search for participants and relief teaching experience indicated that Indian teachers are more commonly employed in the private, for-profit, and corporate service chains, adding to the difficulties of recruiting participants from diverse types of ECE

settings. For instance, as mentioned in the preceding section, I was informed that only one Indian teacher was employed by one of the Kindergarten Associations.

Table 3.2 provides a description of the Indian teacher participants. All the teacher participants were female. I did not come across any Indian male teachers within the ECE settings I approached for the study.

Table 3.2 *Indian Teacher Participants*

Sr. No.	Pseudonym	Age group	Place of origin	Approx years of residence in NZ	Approx years working in NZ ECE	ECE Qualifications
1.	Simran	51 - 60	Urban city in northern India	40 years	22 years	Certificate in Professional Childcare Diploma in teaching (ECE)
2.	Riya	41 - 50	Urban city in southern India	20 years	15 years	Diploma in teaching (ECE)
3.	Sheila	41 - 50	Metropolis in western India	17 years	14 years	Graduate Diploma in ECE
4.	Chery	41 - 50	Urban city and state capital in northern India	20 years	11 years	Graduate Diploma in Teaching (ECE) Montessori Diploma (North American Montessori Center)
5.	Aisha	41 - 50	Urban city in northern India	19 years	11 years	Graduate Diploma in Teaching (ECE)
6.	Ila	31 - 40	Small town in northern India	11 years	10 years	Graduate Diploma in Teaching (ECE) Postgraduate Certificate in Educational Leadership
7.	Meera	31 - 40	Town in western India	11 years	6 years	Graduate Diploma in Teaching (ECE)

8.	Rosie	31 – 40	Urban industrial port city in southern India	10 years	4 years	Graduate Diploma in Teaching (ECE) Aperfield Montessori Programme
9.	Prachi	31 – 40	Metropolis in northern India	9 years	3 years	Postgraduate Diploma in teaching (ECE) Master of Education (ongoing)

As discussed in Section 2.3., the types, ownership, and leadership of ECE settings would be important considerations in if and how Environmental and Sustainability Education was a feature of each setting. Hence, to give an indication of the Indian teachers' ECE settings and the leaders' environmental and sustainability education philosophies, I included the leadership in the study. The managers/head teachers in their ECE settings were also approached to participate in the research through interviews and permitting observations within the ECE setting. I also obtained access to children's learning assessments written by the Indian teacher participants. These children were indirect participants in the study.

Table 3.3 provides a description of the various sources of and types of data I was able to collect for the study.

Table 3.3 *Sources and Types of Data Collected*

Sr. No.	Pseudonym	Service type	Indian Teacher Interviews	Manager /Head Teacher Interview	ECE setting Observation	Learning Stories
1.	Simran	Not-for profit early learning organisation	✓	✓	✓	✓
2.	Riya	Kindergarten	✓	✓	✓	✓
3.	Sheila	Privately-owned group of early learning centres	✓	✓	✓	-
4.	Chery	Privately owned Montessori early learning centre	✓	✓	✓	✓

5.	Aisha	Privately-owned faith-based early learning centre	✓	✓	✓	✓
6.	Ila	Farm-based corporate-owned early learning centre	✓	-	✓	-
7.	Meera	Privately-owned group of early learning centres	✓	-	-	-
8.	Rosie	Privately owned Montessori early learning centre	✓	✓	✓	✓
9.	Prachi	Privately-owned group of early learning centres	✓	✓	✓	✓

The table reflects the initial data collection plan and the actual data that I was able to collect given how the COVID-19 pandemic affected my sampling, and individual participant circumstances. Although I had originally proposed to interview 10-12 Indian teacher participants and managers/head teachers in their ECE settings, given the extenuating pandemic related circumstances, I was eventually able to collect data from nine Indian teacher participants and seven managers/head teachers. Ila and Meera worked as manager and head teacher respectively while Sheila changed her employer/ECE setting during the course of this study, and hence they could not provide or no longer had access to Learning Stories (a form of assessment documentation). Ila completed the interview in her capacity as a manager and reflecting upon her years of experience as a teacher. Due to the non-participation of the manager at Meera's setting, I could not complete an interview with the manager or conduct observations of her setting.

3.4.3. Research Tools

In accordance with the research design and methodology, I used qualitative data collection methods. Qualitative data collection focuses on meaning in context and requires tools that are sensitive to underlying meaning (Merriam & Tisdell, 2016). It involves gathering detailed word/text or image/picture data from a comparatively smaller number of participants. Thus, the data collection tools were selected and designed to facilitate an in-depth exploration of the

Indian teacher participants and their interpretations of their own experiences (Creswell & Poth, 2018).

Additionally, I chose to gather data from multiple sources using various tools. The use of multiple sources and tools provided me with diverse perspectives on the participants and their early learning settings or contexts. Furthermore, this process facilitated data triangulation, thus enhancing the credibility and trustworthiness of my study, as detailed in Section 3.6.4.

Interviews

A qualitative interview was a suitable instrument for a study such as this where the objective was to gain deeper understanding about a particular topic from a limited number of people, rather than obtaining elementary data from a large number of people. Qualitative interviews pose broad questions in order to enable participants to share their views and experiences relatively unconstrained by the researchers' perspectives (Creswell & Poth, 2018).

As the primary data collection tool for my research, I designed a semi-structured interview schedule (Appendix A) with a focus on indicative open-ended questions in order to yield in-depth responses from the participants. The interviews provided me with thick descriptions (Geertz, 1996) of participants' views and experiences. The open-ended questions enabled the respondent to provide unrestricted meaningful descriptions without the boundaries of categories. The interview schedule served as a guide to ensure that I covered the same topics of conversation and investigation with all participants. At the same time, the questions were indicative, which allowed me to reword or resequence the questions during the course of the interviews without changing their meaning, to suit each interview and participant (Mukherji & Albon, 2015; Patton, 2015). It also enabled me to clarify and revisit parts of the discussion as needed and provided opportunities to use probes and delve deeper into areas of interest and concern as they emerged during the interviews (Mukherji & Albon, 2015; Patton, 2015). The interview schedule broadly collected data regarding participants' perspectives and experiences related to ECE in India and Aotearoa New Zealand such as educational background, work experiences, cultural experiences, teacher identity, the place of the natural environment in ECE, and related teaching beliefs and practices.

The interviews, conducted one to one in-person, ranged from one hour to one hour thirty minutes. They were audio-recorded, and then transcribed in order to capture the actual words

and meanings of each interviewee. The recording ensured that I did not lose any information shared by the participants. I also took additional notes in the course of the interviews. These notes facilitated modifications and probes during the interview process, noting of significant information, and the analysis of interviews in the next stage (Patton, 2015). The transcripts of the interviews were returned to the participants for member checking (Creswell & Creswell, 2018) but none of the participants requested any changes in the transcripts.

All of the Indian teacher participants had gained their ECE teaching qualification in Aotearoa New Zealand, which meant that they all had taken an English language proficiency test prior to gaining admission in a course and obtaining a visa for the country. Hence, all interviews could be conducted in English if needed. Several teacher participants did prefer to give the interview in English. A few of the teacher participants used English predominantly but switched languages intermittently during the course of the interviews. Since I was able to switch between languages fluently as well (English-Hindi; English-Gujarati), we were able to converse and interact in their preferred language for a smoother interview process. As I am proficient in the languages used during the interviews, I was able to translate the content into English during the transcription.

Along with the Indian teacher participants, interviews were also conducted with the managers/head teachers in their ECE settings. Each interview took approximately thirty minutes. The purpose of these interviews was to collect information about the ECE contexts of the Indian teacher participants. The goal was also to learn about the setting philosophy and the influence of leadership, if any. The interviews helped build a holistic picture of the teacher participants' teaching context and supplemented the primary Indian teacher interview data. In this manner it served the purpose of data triangulation. The semi-structured interview schedule for the managers/head teachers inquired about their specific setting's visions and goals; their environmental philosophies and practices; and the manager's/head teacher's personal philosophy and practice with reference to the natural environment in ECE (Appendix B). The interview schedule did not include any questions about the Indian teacher participants or their practices at the particular setting, since that was not the aim of the interview. I was able to conduct interviews with seven managers/head teachers working in the ECE settings of the nine Indian teacher participants. One Indian teacher was a manager herself at the time of data collection, while I was not able to interview one manager due to her non-participation.

Observation of the ECE Setting Context

Another source of data that helped build a context for the Indian teacher participants was observations of their ECE setting. Observation is the process of gathering direct information by observing people or places (Creswell, 2012). Qualitative observations are exploratory in nature wherein what is recorded is determined by the research objective, which in this case was to learn more about the teacher participants' work contexts (Mukherji & Albon, 2015). The qualitative observations were used to describe the environment or context of the Indian teacher participants (Mutch, 2013). The observations helped me learn about each participant's place of work in terms of the context, especially the environmental features, spaces, and messages in the setting. These were non-participant observations where I was not involved in any of the ongoing routine learning experiences at the ECE setting (Mutch, 2013). I only observed the indoor and outdoor physical spaces and resources for environmental components within the ECE setting. The observations were conducted over a span of a few hours on a regular working day at each ECE setting. I intended to complete the observations after interviews with the Indian teacher participants and managers/head teachers from the respective ECE setting. However, due to the circumstances around the COVID-19 pandemic, I was unable to get appointments for observations according to this preference. Due to the difficulty of obtaining appointments for interviews and observations, I agreed to visit the setting on any date that was convenient for the staff. Hence, the observations were conducted at varied times for the different settings, that is before, after or on the day of the interview with the respective teacher/s or head teachers/centre managers.

Considering the observation objectives and the environmental and sustainability features I wanted to observe to supplement my data, I developed an observation guide that I used for all the ECE settings (Appendix C). The observations were conducted in the form of written or audio-recorded field notes. I conducted observations of aspects such as the ECE setting's indoor and outdoor space and environment; outdoor learning experiences; and environmental and sustainability themed learning experiences and resources such as nature/environment themed books and resources drawn from nature. The observations were purely contextual, and no observations were recorded of any specific child/children, teacher/s, or their actions/practices. The Indian teacher participant or the manager/head teacher often accompanied me during the observations, and willingly provided further information with respect to my inquiries. This also facilitated my introduction as an outsider to the teachers and

children within the setting and made my presence as unobtrusive as possible. In instances where I was given permission to observe spaces independently and unaccompanied by a teacher/manager, I introduced myself to the teachers and children or they made queries about my presence. In most cases, dialogues with the teacher participant or managers/head teachers in their ECE settings often supplemented my observations, and the data are presented collectively to provide a holistic picture of the participant's contexts.

As part of the observational data, I had originally proposed to take consent and join the Indian teacher participants if they were to accompany the children on any nature trips/field visits during the data collection process. The proposed aim in joining the group was to observe the place of visit as an environmental context. However, due to the COVID-19 pandemic and the resulting protocols, all field visits were suspended or postponed in ECE settings. Therefore, none of the participating ECE settings was able to organise any visits during the period of my data collection.

Document Analysis

Te Whāriki, He whāriki mātauranga mō ngā mokopuna o Aotearoa: Early childhood curriculum (MoE, 1996, 2017) was studied and used to provide background information about ECE in the host cultural context. This document also facilitated an analysis of the place accorded to the natural environment in the early learning curriculum framework and context. Environmental and sustainability features were evident in the form of implications within the Principles, Strands, Goals, kaiako (teachers) responsibilities, teacher identity, children identity, environmental identity, and the underpinning theories and approaches.

In *Te Whāriki* (MoE, 2017), assessment is understood as a formative process used to support learning by recording children's engagement with the curriculum. It is also a tool to share the child's progress with everyone involved in their learning and development. The formal documentation of assessment takes the form of written observations of children by teachers and includes photographs, audio/video recordings and samples of children's work (MoE, 2017). Teachers maintain and update children's Portfolios that include their Learning Stories (Carr, 2001; Carr & Lee, 2012; Carr & Lee, 2019), teacher observations, photographs, artwork, and other records of learning. Learning Stories are a structured form of narrative assessment (Carr, 2001). They are teachers' observations and written vignettes of children's learning in everyday situations. These stories record evidence and examples of children's

learning based on learning dispositions as outlined in *Te Whāriki* (Carr, 2001; MoE, 2017). Some of the more commonly cited western learning dispositions as given in the curriculum document include courage and curiosity (taking an interest), trust and playfulness (being involved), perseverance (persisting with difficulty, challenge, and uncertainty), confidence (expressing a point of view or feeling), responsibility (taking responsibility), reciprocity, creativity, imagination, and resilience. At the same time, the curriculum also recognises cultural understandings and value of dispositions for all cultural groups that are part of the ECE context. For Māori, these dispositions include whakatoī, manaakitanga, aroha, hūmārie and whakahī among others, as discussed in detail in Section 2.3.1. (MoE, 2017).

Learning Stories generally begin with a focus on a specific curriculum Principle, Strand, Goal, or learning disposition (Carr, 2001). As teachers are responsible for writing Learning Stories, they are the ones who identify and determine when and how a child's learning or activity exemplifies a specific or several learning dispositions. As the curriculum recognises that diverse cultural groups value specific kinds of knowledge, skills, attitudes, and dispositions (MoE, 2017, p. 20), teachers are required to work with whānau and parents to identify and facilitate these specific dispositions for the children. In the process, the teacher identifies culturally specific dispositions for the child, how the related the learning taking place and records the Learning Story accordingly. Since the teacher identifies and records the event, her identity becomes an important element in the process. The teacher uses her individual lens, determined by her identity, culture and inclination to identify and record a child's learning. Thus, the Learning Stories recorded by a particular teacher are likely to reflect her teacher identity, cultural identity, and environmental identity.

In the course of their teaching practice, the Indian teacher participants would have developed Learning Stories for children within their settings. I asked their consent to access and take copies of formative assessment documents prepared by them. My objective in including these assessments in the data was confined to looking for teacher participants' references to children's relationships with the natural environment. The collection and analysis of assessment documentation was based on the premise that a teacher with a strong environmental identity would be likely to recognise and document children's learning experiences focused *in*, *about*, *for*, and *with* the natural environment. The Indian teacher participants were asked to share as many Learning Stories as they were able to from within the past one year. The criteria would provide access to the most recent assessments and

restrict the data to a manageable number. Since the objective was to determine participants' inclination towards, and frequency of, recording children's Learning Stories in relation to environment and sustainability, no other criteria were provided so as to not limit the nature of the Stories. However, due to time constraints and teachers' pre-occupation with the COVID-19 related circumstances, I did not receive adequate responses and stories from the participants in spite of several follow-ups. Following this, I decided to gather any number of Stories that they were willing to share and could obtain permission from children and their parents for. Additionally, teachers who had access to printed versions of the assessments could share more stories easily, while some only had access to them online and had to email or print them for this purpose, which might have been a factor for a smaller number of stories that they could share. Hence, I decided to use the Stories that were made available to me as per the teachers' convenience over the several months of data collection. Six of the nine teacher participants were able to share Learning Stories compiled by them (Chery: 8; Rosie: 6; Riya: 12; Simran: 15; Prachi: 20; Aisha: 20).

The teacher participants either provided me with hard or soft copies of Learning Stories prepared by them. However, most of the Learning Stories were originally prepared using learning documentation software such as Educa (Educa Ltd., 2022) and Storypark (Storypark, 2023) and then printed to be added into the children's portfolios. The Learning Stories were only used to analyse environmental themes such as their focus, content, and activity. The children who featured in the Learning Stories and photographs within were neither referred to nor included in the analysis.

Section 3.4. has touched upon some of the ways in which the COVID-19 pandemic disrupted my research study. In addition, the data collection and methodology for my study was impacted in several ways due to the disruption caused by the pandemic:

- The original research plan was to interview at least 12 teachers representing a variety of ECE settings. If the pandemic had not affected the process, I would have taken the time to recruit at least 12 participants or more. It was a challenge to get appointments with ECE settings and recruit participants. I spent several months communicating with prospective education providers that employ a large number of Indian teachers, with no success. However, due to the time constraint, I could not spend more time on the process. Additionally, I was able to recruit participants from three different types of

settings. Ideally, I would have liked to recruit more participants from various types of settings.

- Although I was considering the Indian cultural identity of teachers for this study, it would have been ideal to be able to have participants from a variety of Indian subcultures belonging to diverse geographic regions. However, due to the circumstances created by COVID and described above, I was unable to use that as a criterion since that process would have taken much longer.
- The ECE setting observations included the plan to go with the Indian teacher participants if they accompanied the children on any nature trips/field visits. The goal was to collect data about the ESE features and practices of the settings. However, due to the COVID-19 pandemic and the resulting protocols, all field visits were suspended or postponed in ECE settings. Therefore, none of the participating ECE settings was able to organise any visits during the period of my data collection.
- The initial data collection procedure included self-portraits by the Indian teacher participants. I was able to initiate the step with them. The teachers were asked to represent themselves through a self-portrait (representations of themselves in a way they found most comfortable including drawing, writing, or speaking in order to gauge the place/role of the environment in their lives). However, due to the situation at the time, and sudden demands on their time, several participants were unable to complete the self-portraits and return them.
- I also planned to conduct a second round of interviews with the teachers. The objective of the follow-up session was to discuss the self-portraits I would receive from them and to ask for elaboration or further details with reference to their first interview. Due to additional protocols and tasks that teachers had to take on to cope with the pandemic, I was unable to get additional time for the second round of interviews. This resulted in exclusion of the self-portrait data that I had received and the inability to request further data/clarifications. Additionally, as it emerged in the analysis of the initial round of interviews, a couple of teachers made strong spiritual connections between Indian and Māori cultural beliefs. Further exploration of this

aspect in possible follow-up interviews would have provided a clearer picture of what these connections look like in terms of the teacher's perspective and practice.

These changes and disruptions in the research process posed certain limitations for my study as I was unable to collect data as originally planned. I was also unable to use certain data due to limited completion of the self-portrait task. These conditions also created obstacles to a more in-depth exploration, analysis, and clarification on some of the data as it emerged from the initial analysis.

3.5. Data Analysis Framework

This section presents a summary of the framework and techniques that were employed for analysis of data obtained for the study. Patton (2015) states that qualitative data collection and analysis methods present the challenge of condensing and making sense of large amounts of data. In order to do so, the researcher needs to employ her/his analytical skills in condensing the information gathered, highlighting the significant data, identifying patterns and communicating the essence of the findings (Patton, 2015).

Interpretivist research that aims to interpret participants' construction of meaning is designed to build inductively rather than to test. It does not begin with a theory that needs to be verified with the collected data; instead, it inductively theorises or makes meaning (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). "Inductive analysis involves discovering patterns, themes and categories in one's data" (Patton, 2015, p. 524) rather than analysing data with reference to an existing framework. Similarly, for my study, I gathered and analysed data about participants' construction of meanings in their sociocultural contexts, which was not dictated by predetermined conceptualisations and theorisation. My research focussed on individual meaning-making and the inherent complexities rather than generalisations and replications (Creswell & Creswell, 2018).

The data were gathered using qualitative methods as detailed in the Research Design (Section 3.3). An inductive analytical methodology provided an indication of the possible themes and perspectives that might have emerged from the research process, supported by theoretical perspectives. These qualitative and tentative theoretical ideas were then used to analyse the data for patterns and findings that emerged from my study. At the same time, I reviewed and

used theoretical ideas and perspectives to support my research, hence basing my research in existing theories as well. Therefore, the data were analysed inductively and deductively to an extent. The theoretical ideas from Sauvé's spheres of development (2009), Bronfenbrenner's ecological systems model (1979), Esteban-Guitart and Moll's funds of identity approach (2014), and Indian philosophical ideas were used in various combinations to form a framework for data collection, analysis, and interpretation. In this manner, the research also included deductive methods, where the theoretical ideas mentioned above determined the nature of data collection and analysis.

3.5.1. Thematic Analysis

I applied a process of qualitative analysis (Denscombe, 2010) to the interview data obtained from the Indian teacher participants and the managers/head teachers in their ECE settings. I used thematic analysis, which is a method used to identify, analyse, and interpret patterns of meaning within qualitative data (Braun & Clarke, 2006). This method of analysis allows identification and interpretation of significant findings as revealed by the data. Thematic analysis enabled me to identify patterns in and across participants' perspectives and lived experiences. However, since the analysis was inductive and deductive in nature, the coding was data-driven (emerging from the data) and theory-driven (derived from research questions). Codes were developed simultaneously and across multiple data sets. Figure 3.2 depicts the process of qualitative thematic analysis used in this study.

Figure 3.2 *Process of Qualitative Thematic Analysis Used in the Study*



I transcribed the audio-recorded interview data from all Indian teacher participants and managers/head teachers verbatim. I began the analysis process by immersing myself in the data (Braun & Clarke, 2006), reading and re-reading the interview transcripts. The fact that I had conducted the interviews and transcribed them myself, facilitated the process of familiarising myself with my data. My research questions and the interview guides provided an initial analytical framework for the thematic analysis (Patton, 2015). I identified broad themes based on my research questions. At the next level, I developed sub-themes based on the interview questions. These sub-themes became the codes for the transcripts, which kept evolving throughout the analysis process. I then read and searched the transcripts for significant and telling ideas as evidence of the themes and sub-themes as they developed. I recorded relevant quotes from each participant to provide evidence for the themes and codes developed. In the process, some codes emerged from the interview data and were added to the

analytical framework. The codes were refined until I was able to find a fit between the data, themes, and research questions.

The data from the manager/head teacher interviews were used to learn more about the diverse ECE contexts of the Indian teacher participants in terms of the environmental philosophies and practices at their workplaces. Managers'/head teachers' perspectives specifically helped support and supplement practices and experiences shared by the teacher participants during their interviews. The data have been included throughout the findings to present teacher participants' experiences of culturally-oriented environmental identity transitions in Aotearoa New Zealand ECE (see Chapter 5).

Two additional sets of data helped build a context for the Indian teacher participants. These included observations of Indian teacher participants' ECE settings and an analysis of Learning Stories they had written. The interview data were analysed qualitatively by cross-referencing individual teacher interview transcripts with the observational data from their ECE setting. The purpose was to find supporting evidence for the practices and experiences shared by the Indian teacher participants. I also analysed the observational data for indications of contextual factors that might have had a bearing on the particular teacher participants' philosophy, pedagogy or practice related to environment/sustainability; and hence influenced their environmental identity as an ECE teacher in Aotearoa New Zealand.

The Learning Stories were analysed qualitatively for the nature and focus of environmental and/or culturally-oriented ideas in the documentations. They were also analysed for the frequency of stories with an environmental and/or cultural focus or aspect. Analysis of Learning Stories provided additional data on the Indian teacher participants' environmental inclination and identity as ECE teachers in Aotearoa New Zealand, and the influence of cultural transitions upon the process. These data supplemented teachers' interview data, managers'/head teachers' interview data, as well as the ECE setting observation data to interpret the contextual environmental identity for each teacher participant.

A thematic analysis of the multiple data sets enabled me to develop themes and codes that were applicable across the different data sets. This process was only applicable to certain themes and codes where similar data were collected or generated. Frequencies or numerical figures were used to identify and present the number of participants sharing the same or

similar perspectives for each code and/or theme. This representation helped provide a picture of similarities, differences, consensus and stark contrasts among participant views and experiences.

3.6. Trustworthiness: Establishing Validity and Reliability

Validity and reliability are essential components of an ethical and effective research study. They determine the worth of the research process and the findings (Lincoln & Guba, 1985). Traditionally, validity refers to evidence that the study actually measures what it purports to measure; while reliability refers to whether the study can be replicated with similar results (Mutch, 2013). The criterion for rigour is well defined for the scientific or positivist paradigm: internal validity; external validity or generalisability; reliability or replicability; and objectivity (Schwandt et al., 2007). On the other hand, post-positivist and naturalistic paradigms such as interpretivism are concerned with socially constructed multiple realities of participants, which does not lend itself to the same criteria and process of judgement and evaluation.

Lincoln and Guba (1985) proposed the term trustworthiness as a parallel to rigour for naturalistic qualitative inquiry. Over the years, analogous criteria for trustworthiness have been developed that can be applied to qualitative research paradigms and methodologies (Lincoln & Guba, 1985; Schwandt et al., 2007):

- Credibility (analogous to internal validity)

Credibility is a critical criterion in establishing trustworthiness (Lincoln & Guba, 1985). Credibility, the internal validity parallel in qualitative research, deals with the question, “How congruent are the findings with reality?” (Merriam & Tisdell, 2016, p. 242). Several techniques can be used to increase the credibility of naturalistic research: prolonged engagement with the phenomena or respondents; persistent observation and engagement; triangulation of data; peer debriefing; negative case analysis; and member checks (Schwandt et al., 2007).

- Transferability (analogous to external validity)

Transferability refers to “the extent to which the findings of one study can be applied to other situations” (Merriam & Tisdell, 2016, p. 263). Patton (2015) proposed the parallel notion of extrapolation, which is tentative assumptions on the possibility of applying findings to other

similar conditions. The criterion for establishing transferability is thick descriptive data (Lincoln & Guba, 1985; Schwandt et al., 2007). It is the responsibility of the researcher to provide as in-depth a description as possible of the study context and findings. Transferability can also be enhanced through a maximum variation sample (Patton, 2015). Selecting a variety of settings or participants allows for an increased chance of transferability.

- Dependability/Consistency (analogous to reliability) and Confirmability (analogous to objectivity)

Qualitative research refutes the existence of a single truth and objectivity in research methodology and process. Instead, the existence of multiple truths and realities is acknowledged, where the researcher is part of the research context and meaning-making process, rendering the research value-laden and subjective. Hence, the parallel qualitative criterion of confirmability is the process of demonstrating that research findings convey the participants' perspectives and experiences, and not that of the researcher, while the researcher positioning is accounted for simultaneously. Lincoln and Guba (1985) argued that since there is no credibility without dependability, the evidence provided to demonstrate credibility supports establishment of dependability. Strategies such as triangulation, peer examination, researcher positioning, and audit trails can be used to establish credibility and dependability (Lincoln & Guba, 1985; Merriam & Tisdell, 2016). Another way to enhance the dependability of a study is a detailed reporting of the research process such that another researcher can repeat the process, but not with same results or findings (Shenton, 2004).

As detailed in the introduction to this section, qualitative researchers establish trustworthiness through the criteria of credibility, transferability, dependability/consistency, and confirmability. I now elaborate upon how I addressed each of these criteria within my research.

3.6.1. Trustworthiness in this Study

The objective of research is to ethically present and share valid and reliable knowledge. As discussed in the preceding section, alternate criteria have been developed for evaluating the validity and reliability of qualitative research. This section includes a discussion of the measures I took to enhance the trustworthiness of my qualitative research process and study: triangulation; member checks; researcher positioning; thick descriptions of data; maximum variation sampling; and familiarity with participating culture/organisation.

Triangulation

Triangulation is one of the most effective techniques to increase the credibility and dependability of findings and interpretations (Merriam & Tisdell, 2016). Denzin (2017) proposed four types of triangulations that can be employed in a single research study:

- Data triangulation: the use of multiple sources of data
- Investigator triangulation: the use of multiple observers
- Theory triangulation: the use of multiple theories
- Method triangulation: the use of multiple data collection methods/designs

I conducted in-depth interviews with the Indian teacher participants with the aim of exploring their interpretations of their socioculturally-constructed realities in ECE settings. I simultaneously interviewed managers/head teachers in their ECE settings and conducted observations of their ECE settings. The interviews with the managers/head teachers enabled me to gain additional insight into their context specific teacher identities and provide a contextual background for their place of practice. The ECE setting observations provided supplementary information regarding the teachers' context and enabled connections between their descriptions of their contextual environmental philosophies, pedagogies, and practices.

In qualitative inquiry, triangulation of data sources does not imply total consistency (Patton, 2015). The aim was to collect data from multiple sources in order to obtain and build a clearer picture of each participant's context and collate all of the data gained from different methods and sources to strengthen the findings. Thus, multiple methods of data collection enabled me to supplement and strengthen the quality of my data by providing rich descriptions and interpretations.

Member Checks

Member checks or respondent validation is an effective strategy used to enhance the credibility of a qualitative research study (Lincoln & Guba, 1985; Merriam & Tisdell, 2016). Member checking refers to the process where participants have the opportunity to 'check' the data as interpreted by the researcher and are in agreement that these data are adequate representations of their experiences, as within interviews in this study. As part of this process, I informed all the participants that they would have the opportunity to check the data they had shared. I sent all the interview transcripts back to the respective participants for review and

asked them if they would like to modify or edit any of the information they had shared at the time of the interview, if they felt it did not represent the intended meaning.

However, some participants were unable to complete the member checks due to several personal and work-related circumstances. The primary reason was that of the participants dropping out before they were sent their interview transcripts for review. In two such cases, the participants had left their respective ECE settings between the time the interviews were conducted, and the transcripts sent back for review. Ethically, I was still able to use the data for my research as I had already obtained their informed consent prior to commencing data collection. Nonetheless, not getting participants' reviews on their interview transcripts presented a challenge for me, considering the impact this might have had on the trustworthiness of my study (Creswell & Miller, 2000; Lincoln & Guba, 1985; Mutch, 2013).

I had to overcome this challenge as best I could, given the circumstances beyond my control. I made the decision to include the interview transcripts in my analysis but remained mindful of how this would affect the credibility of my research. Thus, the interview data from these two participants were analysed with reference to the interview data from all other participants. The two teachers' interview data were also used for the purpose of supplementing and triangulating (Creswell & Miller, 2000; Lincoln & Guba, 1985; Mutch, 2013) the comprehensive set of interview data I had obtained from other participants and methods.

Researcher Positioning

Another important strategy to enhance the integrity or credibility of qualitative research is the detailed clarification of researcher positioning or reflexivity (Merriam & Tisdell, 2016). Researcher positioning refers to a description of how the researcher affects the research process and how the research process affects the researcher. I have explored and described my positioning as a researcher in this study in Section 3.2. Throughout the thesis, I attempt to explore my identity as the researcher and how my identity, beliefs, and values might have affected the way data were collected, interpreted, and discussed (Denscombe, 2010).

Thick Descriptions

Providing thick descriptions (Geertz, 1996) (Geertz, 1973) for every aspect of the phenomenon under study promotes credibility by conveying the true research situations and

contexts; and thorough accounts of the research procedure enhance dependability (Shenton, 2004). Such thick descriptions also increase transferability as thick descriptions of the study, participants, and context, enables “someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility” (Lincoln & Guba, 1985, p. 316). As the researcher, I aimed to provide thick descriptions of the study and context in order to facilitate any such assessment of transferability. The interviews yielded rich thick descriptions of participants’ perceptions, beliefs, experiences, and context with reference to their culturally-oriented environmental identities in Aotearoa New Zealand ECE.

Maximum Variation Sampling

The maximum variation sampling (Patton, 2015) method used for my study also added to the transferability criteria. I selected my sample purposively to fit the pre-defined criteria of my research participants and study. However, within this homogenous sample, I was able to recruit teacher participants from the diverse ECE settings in Aotearoa New Zealand (see Table 3.3). Such a sample facilitated analysis of similarities and differences among participant interpretations and experiences across the variety of contexts. Thus, this kind of maximum variation sampling allowed me to obtain and analyse qualitative detailed descriptions of each teacher participant’s cultural-environmental identity within her unique ECE context. At the same time, it afforded me the opportunity to study common patterns across the diverse ECE settings and contexts.

Familiarity with Participating Culture and Organisation

Shenton (2004) suggests another way of establishing credibility is “the development of an early familiarity with the culture of the participating organisation” (p. 65) prior to the data collection process. This criterion is ideally achieved through the study of appropriate documents and preliminary visits to the settings. Prolonged engagement (Lincoln & Guba, 1985) through preliminary visits was not feasible due to several extenuating circumstances such as the impact of the COVID-19 pandemic and the resulting limitations on access to ECE settings and participants. However, several experiences within the Aotearoa New Zealand ECE context provided me with familiarity with the local ECE culture, which formed the context of my study as also detailed in Section 3.2. As for familiarity with the participating culture, I was already what might be considered an ‘insider’ with a shared cultural and professional identity in this research context (see Section 3.2). I was a migrant Indian teacher

interviewing and interacting with other migrant Indian teachers in Aotearoa New Zealand ECE.

3.7. Ethical Procedures

There is a close link between the trustworthiness of a study and the ethical rigour of the researcher and the research process (Cohen et al., 2018; Patton, 2015). Qualitative research involves collecting data from people, about people (Punch, 2014). Educational researchers need to account for the effects of research on the participants (Cohen et al., 2018). Researchers need to ensure there are ethical provisions in place for the security of the participants, the researcher, the research institution and the integrity of the research process. Although a researcher can have an ethical approval in place for all anticipated ethical considerations, they must also be prepared to overcome unanticipated challenges along the way. According to Cohen et al. (2018), ethical considerations in educational research include, but are not limited to: choice of research topic and research design; informed consent; protection of participants from harm; privacy of participants; power and position; reciprocity; ethical analysis, reporting and dissemination of findings.

In accordance with The University of Waikato Ethical Conduct in Human Research and Related Activities Regulation 2008, I obtained full ethics approval for the research study (Appendix D). The following sections present the procedures followed to ensure ethical conduct throughout the research study.

3.7.1. Access to Participants

As detailed in Section 3.4.1, I initiated the participant recruitment process by approaching a privately owned group of ECE settings, with a large number of Indian teachers. However, due to the sudden onset of the COVID-19 pandemic and the resulting circumstances, and no response from potential participants, I had to alter my sample recruitment method. Using a combination of snowballing and organisational approach, I was able to secure a sample of nine Indian ECE teachers. Simultaneously, as the teacher participants were identified, the managers/head teachers in their ECE settings were also approached for participation through interviews and my observations of their ECE settings.

Following consent procedures and interviews with Indian teacher participants and managers/head teachers, the Indian teachers were requested to identify students for whom they had developed Learning Stories in the recent past. Permission was sought from parents of the identified children to access their Learning Stories, and from children whose Learning Stories were shortlisted.

3.7.2. Informed Consent

Where participants were approached through the management, I made an appointment with the shortlisted kindergarten head teacher, discussed the study, and invited their participation. Following their consent, I met with the Indian teacher from the kindergarten to discuss the research and gain her consent. I followed a similar process where I approached the other shortlisted ECE setting managers and requested consent from them and the Indian teachers for their participation. Two of the three Indian teachers agreed to participate in my study.

Informed consent was obtained from all participants included in the study. On identification of a potential Indian teacher participant through snowballing, I sought an appointment to introduce my intended research and request their consent to participate using the information sheet and consent form. For the teachers who provided their consent to participate, I met with their respective managers/head teachers, discussed the study, and invited their participation, and took consent for including the ECE setting in the study using a similar information sheet and consent form.

In the cases where I approached organisation/senior management prior to the participants, the information sheet was shared first with the educational services managers/regional managers. Once they provided consent, the kindergarten head teacher and ECE setting manager were provided with the information sheet and consent form to be signed. This was followed by sharing of the information sheet and consent form with the Indian teacher participant/s.

Verbal consent was sought from each adult participant every time before commencing data collection. I also sought permission to audio-record the interviews each time. During observations of the centers, I took field notes on environment/sustainability themed learning experiences and resources such as books and resources drawn from nature. The purpose of these observations was to familiarise myself with each participant's place of work in terms of the context. Each time I intended to observe an area where children were present, I obtained

verbal consent every time I wanted to make any observations of the said area. The observations were purely contextual and no observation of any specific child/children, teacher/s, or their actions/practices were recorded.

The participating Indian teachers were requested to identify children whose assessment documentation they had contributed to in the past year, for the purpose of accessing Learning Stories (Carr, 2001; Carr & Lee, 2012) written by them. Consent for access to this data was also sought from the respective parents and children. The teachers were requested to share the information sheets describing the research with the respective parent/s and obtain their permission on a consent form. The children's Learning Stories were accessed with their permission using a consent form designed for them.

3.7.3. Confidentiality

The confidentiality of all participants was preserved using pseudonyms. This was explained to participants in the information sheets and the consent forms. All participants were given the opportunity to suggest pseudonyms for themselves. I did not need to assign pseudonyms to the ECE settings as they were identified by their type for analysis. I ensured that my descriptions of the various ECE settings would prevent identification of the specific setting as far as possible. In order to maintain confidentiality of the data, no one other than the participants, my supervisors, and I had access to the raw data.

3.7.4. Potential harm to Participants

As the researcher, I ensured the participants knew that their participation in the research was voluntary, and that they could withdraw from the research at any time of data collection without any repercussions. Interviews with the managers/head teachers did not include questions about the Indian teacher participants themselves, and only gathered information to get a broad overview of the particular ECE setting and its environmental philosophies.

During observations of the centers, I only observed the physical spaces and resources at the ECE setting. The purpose of these observations was to familiarise myself with each participant's place of work in terms of the context. I did not conduct or record observations of any specific child/children, teacher/s, or their actions/practices. This was also made known to the participant managers/head teachers and Indian teachers.

3.7.5. Participants' Right to Decline Participation and Withdraw

Through all the information (written and verbal) provided, I ensured all participants that their participation was voluntary. They were advised that they could decline or withdraw their participation at any time by contacting the researcher. The managers/head teachers could withdraw their workplace up until the end of data collection from that workplace. No participant or early learning center withdrew data from the study.

3.8. Chapter Summary

This chapter presented the methodology used for the study. An interpretivist methodology was deemed most suitable to explore Indian teachers' interpretations of their own experiences in Aotearoa New Zealand ECE. This approach served the purpose of interpreting teachers' understandings of their multiple culturally-oriented contextual realities. An important component of interpretivist qualitative research methodology is researcher positioning which was explored with reference to the research process. I then located myself in the context of my study through an in-depth exploration of my researcher positioning.

Ethical approval was obtained for the research study before I began recruiting participants. Nine Indian-born migrant teachers with an Aotearoa New Zealand ECE teaching qualification and working in ECE settings were recruited as participants. This sample was representative of the population and phenomenon the study aimed to explore. In accordance with the research questions and the research paradigm, qualitative data collection methods and tools such as interviews, observations, and document analysis were used. This facilitated an in-depth exploration of the teacher participants' interpretations of their realities. The number of participants and data collection procedures were limited by the extenuating circumstances and time constraints as a result of the COVID-19 pandemic and lockdowns through 2020-2021. The data were analysed using thematic analysis (Braun & Clarke, 2006) in order to identify patterns of meaning within and across data sets, rather than make generalisations. I took measures such as triangulation, member checks, and clarifying researcher positioning to enhance the trustworthiness of this qualitative study.

4. Cultural and Environmental Orientations: Being Indian

4.1. Introduction

To explore migrant Indian teacher participants' interpretations of their cultural and environmental orientations, there was a need to begin from their home cultural context. During the data collection process, this was done by asking teachers to voice their understandings and interpretations for themselves as a people. This was important as culture defines the people and since the objective was to understand the process of the transition of their environmental identities, it would be pertinent to analyse their home cultural identity before attempting to investigate the host cultural identity and the ensuing environmental identity transitions.

In order to establish this context for Indian teachers working in Aotearoa New Zealand ECE with a focus on their environmental philosophies and ideas, I gathered data to reflect their journey beginning in their home cultural context. I establish a starting point by interpreting their general perspectives on their India cultural identity and their understandings, views, and experiences with the natural environment in their childhood, both within the home and the educational context (Section 4.3.1. and 4.3.2). An exploration of what they considered were early life influences on their environmental identities follows (Section 4.4). Section 4.5 includes the participants' interpretations of their home cultural perspectives on the place of the natural environment in early learning.

4.2. Perspectives on Indian Culture

The home cultural identity of the Indian teacher participants was a critical part of interpreting their transitioning environmental identities. The objective was to know how they viewed their own cultural identity and to explore their environmental identities within their home cultural context, as a prelude to considering the transitions from the home cultural context to the new cultural context of Aotearoa New Zealand ECE.

While discussing an Indian identity, it is critical to avoid over-generalisations, considering that India is an incredibly diverse culture as a whole with a wide variety of subcultures, religions and other cultural affiliations, and a defined socioeconomic stratification. For the purpose of this research, an Indian identity was studied in the broadest sense of the term. It

was inquired about in terms of a general holistic cultural identity and not in terms of the separate subcultures of the teacher participants. This generalisation was based on the criteria for sample selection detailed in the Methodology chapter. The findings in this chapter represent analysed data from the teachers as a group of currently practising migrant Indian teachers who have gained their ECE qualifications in Aotearoa New Zealand.

As part of the interview process, teachers were asked how they would describe an Indian person or Indian identity, in order to provide a context for themselves in their own words. Teachers frequently described an Indian identity or being Indian in terms of cultural values and beliefs held by the Indian people as a group. This might be expected, as a national identity is interdependent on cultural identity, and often interpreted along the same lines.

Overall, teachers voiced a realisation and recognition of the fact that their cultural heritage differentiated them from others and that was what they believed made them who they are as Indians. During the interviews, teachers initially stated the cultural values that they felt were part of their Indian identity. For instance, Meera stated, “Maybe culture, language, how you dress, what you wear, what you eat.” However, the teachers also believed that their cultural identity was not restricted to popular and obvious cultural symbols such as the ones mentioned by Meera, but everything that they held dear as part of their cultural traditions and practices. For instance, according to Simran, “It’s [Indian cultural identity] not only language, it’s about what you eat, what you wear, how you live, what you look like. It’s also about your life values, like I believe in sexual abstinence till one is married.”

The data showed how, apart from the broader cultural symbols, personal ethical life values may also form a part of the teachers’ cultural identity. Being Indian may mean believing in and adhering to the traditional values and norms followed by virtue of membership within a society or culture, which would then be expected of the future generations as well. The findings on teachers’ perceptions of an Indian cultural identity were grouped based on the sub-themes that emerged from the interview data. They are presented accordingly in the following sub-sections: the importance of relationships and interdependence; the importance of respect; the importance of religion; the importance of lifestyle; and the importance of cultural traditions.

4.2.1. The Importance of Relationships and Interdependence

The teachers often stated that interdependence and familial relationships were two important facets of the Indian identity. The teachers voiced this in various ways. For instance, according to Rosie, “I was dependent on my parents, as you know in our culture we completely depend on our parents until we get married, but here [in Aotearoa New Zealand] they are given the freedom to be independent.” While contrasting the interdependence feature of the Indian cultural identity to their perceived Western notion of familial relationships, Meera explained, “For us it’s [parental relationships] a duty and an obligation. We have to take care of our family.” The teachers talked about familial interdependence as part of the Indian identity in terms of children’s lifelong dependence on their parents, emotionally, socially, and in most cases, even financially from childhood right through youth and up to adulthood. This interdependence was also considered in the literal and physical sense, where children were expected to, and usually did, take care of their ageing parents, who lived with them.

The family as a unit and the relationships within, were considered an integral part of the social structure, held in high esteem, and valued over other relationships or social units in the cultural context (Clayton, 2012). For one participant, Rosie, this was defined by the relationship of marriage:

Culture would be the values and beliefs we hold, that is really important. Especially the Indian culture of marriage and relationships. It has a very special meaning. After you get married, you follow... you even try to compromise and follow all the cultural traditions.

Rosie added more about the importance of the sanctity of relationships as perceived by the Indian culture, primarily by way of legal and societal binding. Relationships like marriage, and the commitment they symbolised, were important cultural values for Rosie, ones that defined who she was as a married Indian woman. Her identity appeared to be linked to her relationships.

Family values such as interdependence and relationships were considered an integral and inseparable feature of the traditional and modern Indian cultural identity as expressed by the participants. Interdependence within the family appeared to be a clear descriptor of the Indian cultural identity for these teachers. Relationships appeared to be a common theme across the

group, where the teachers perceived cultural identity to include values and beliefs associated with the traditional norms of relationships.

4.2.2. The Importance of Respect

Teachers such as Meera, Ila, and Riya described the notion of respect as a deep and ingrained cultural aspect of an Indian cultural identity. For instance, Meera believed that respect was not only encouraged but also expected from children, and adults:

In terms of values, what you teach to others, how respectful you are towards others.

They may be my juniors in terms of work, but I will still show them that respect.

That's a part of my culture and I will not leave that behind ever.

Riya considered the value of respect as paramount to being an Indian when she stated, "Culture...respecting the elders, relationships...Giving respect to your elders, to your parents, respect and value the traditions that we carry within us."

As part of the Indian cultural identity and Vedic belief system (Guha, 1985), the notion of respect is applicable not only to people, but also to inanimate sources of life and existence. For instance, food is revered as *anna* (a source of sustenance) while books are worshipped as a source of *vidyaa* (knowledge). Meera believed that this respect for all life and inanimate objects was integral to her Indian identity, which she described as similar to Māori (Indigenous people of Aotearoa New Zealand) beliefs in some ways:

Even today, if I see a child step on a book, I will tell them to stop and put it back on top. It's our culture to respect books, and so I will. There are several such practices like not touching the feet to any food. It's tikanga [Māori ways of doing including practices, customs, and rituals] – it's similar in the Māori culture and ours.

Teachers such as Chery described an Indian identity in terms of personality characteristics and traits that an Indian would traditionally possess or be likely to possess by virtue of belonging to a particular cultural and historical context. According to her, Indians were "very respectful, very kind, very welcoming...adjusting, accommodating, hardworking, sincere."

It appeared that for many participants being Indian equated with being respectful. It was expected as part of one's attitude and behaviour with other people, especially elders, and all sources or symbols of life. The teachers believed that some general and typical characteristics were evident in and expected from them by virtue of belonging to the Indian culture. These

might be the characteristics that they had seen, experienced or know about among their own cultural group including hospitality, flexibility, hard work, and resilience.

4.2.3. The Importance of Religion

Religion and religious values or practices also featured as important aspects of being an Indian for these participants. However, the teachers expressed this idea in terms of Indians being religious and not in terms of a common religion. For Meera, it was about religion as part of culture, not as an ideology or strict practice as she explained, “I think cultural beliefs and values will be similar across the country. Most will be religious. So, we follow these cultural practices.” Another participant, Simran, drew upon the practical meanings and life lessons of the religious teachings rather than following them as strict rules of practice. She stated, “Culture and caste are not so important anymore. I’m Sikh but I don’t go to the Gurudwara [place of worship] all the time – I’m not so religious. But I believe in speaking the truth, good actions, no lies.”

The Indian cultural landscape includes several diverse religions, which was also the case with the participant teachers. This could be seen to mean that Indians were a religious people in general and held religious ideals and practices, irrespective of the specific religion they might have believed in or followed. A religious sub-identity formed a part of the larger cultural identity. For some participants, religion did not appear to define their Indian cultural identity, it was a contributing factor in the way that it provided them with guidance and direction for their lives.

4.2.4. The Importance of Lifestyle

The Indian identity was also described in terms of the way of life or lifestyle determined by the socioeconomic status of the individual or family. However, the way of life or identity discussed was specific to the broader Indian middle class with its own further sub-stratifications. Indian society is often viewed in the form of socioeconomic classes based on factors such as education, occupation, and income (Ayoub & Raja, 2023; Majumder, 2021). The reason for including this aspect as a defining factor for an Indian identity might have been because all the teacher participants appeared to belong to the Indian middle class, and hence related to that aspect of cultural identity.

One participant, Ila, felt that Indians equated money with success and respect, and hence were motivated to strive for monetary gains in general:

I think they value money because they relate money with success. I feel that there's nothing bad in it because a lot of people have dealt with a lot of problems with not having finances. So, when they see that, they provide respect to that person.

Aisha believed that social status had become a part of the Indian identity where the aim was pursuing financial gains in general, as she said "Running after money is quite important. Materialistic stuff is very important. Having high paying jobs is very important." Aisha added that striving for educational excellence was another common goal for Indians in general, especially the middle class, noting that "Education is quite important, the academic side of it is really important."

Therefore, as can be seen from these two teachers' interpretations, in keeping with rapid globalisation and commercialisation, their impression was that Indians in general seem to be getting competitive in all spheres of life and wanting to progress rapidly, especially financially. Thus, according to these teachers, this struggle for financial and material gain appeared to have become a defining feature of the Indian identity today.

4.2.5. The Importance of Cultural Traditions

Cultural identity symbols were believed by the participants to be important aspects of the Indian identity, representing Indians as a cultural group. For Meera, celebrating festivals was one way of sharing her Indian identity with others. Rosie shared her ideas about her cultural identity as an ECE teacher in Aotearoa New Zealand, "I usually celebrate some of the festivals here with the children, to share information about where I come from, and they accept it." Like other Indians living in adopted countries, the teachers considered it important to hold on to their cultural identity and share it with others around them.

With reference to their diasporic Indian identity, keeping this identity alive and preserving their way of life was considered important for some teachers. For instance, Riya believed that Indians valued their cultural heritage and identity, and worked hard towards its sustenance, arguing that "Indians value holding onto their culture, holding onto their language. They want the future generation to hold onto the culture. The language is very important, I feel, food, celebrations, which will keep the culture within the family."

Meera talked about her identity by drawing parallels between the Indian culture and Māori ideas of taonga (treasured or prized possession/social or culturally-valued resources) and tikanga (Māori ways of doing including practices, customs, and rituals). She explained, “You’re born into that culture, and you have that ethnicity, heritage, taonga, tikanga, whatever you have brought here with you from there. The religion you bring with you, the culture you bring with you.” The fact that Meera chose to focus on similarities with tangata whenua (Indigenous Māori people of the land) tikanga and cultural ideas might illustrate her efforts to connect with the Indigenous culture of her adopted country.

4.2.6. Section Summary

As illustrated in this section, the Indian teacher participants reported understanding and interpreting Indian cultural identity in various ways. Yet, there were common threads running through their discussions based on the importance given to certain characteristics and practices that might be perceived as typical of Indian culture. They perceived and described their Indian identity and that of Indians in general based on Indian values, both traditional and modern.

According to the teacher participants, the five broad aspects outlined above constituted a general Indian cultural identity. The teachers viewed traditional values such as relationships, interdependence, and respect as vital characteristics of an Indian identity. Additionally, their cultural identity was also viewed in association with their professional identity as ECE teachers in Aotearoa New Zealand. Participants’ descriptions of being Indian were specific to their diasporic identity as a cultural group in an adopted country. Cultural symbols helped the teacher participants stay connected to their cultural roots and identity. Some teachers also acknowledged the similarities between their own and Māori cultural identities.

The teacher participants’ cultural identity provided the starting point for mapping their cultural crossover journey in ECE and transitions they had undergone as part of this process. The next significant element in their original culturally-oriented environmental identity would be their perceptions of associations with the natural environment within their own cultural context.

4.3. Perspectives on Early Years Connections with the Environment

Indian teacher participants' cultural identities became the basis of their cultural lens through which they understood and interpreted the role of the natural environment in their own ECE experiences. This understanding was based on their personal, educational, and cultural experiences. As none of the teacher participants had ECE teaching qualifications or experience in India, their interpretations of ECE and the natural environment were not based on academic qualifications, formal training, or professional experiences within the field in their home country. The teachers based their ECE perspectives on their own early childhood experiences of attending formal/informal ECE. This section includes the Indian teacher participants' original or initial perspectives on ECE and the natural environment, specifically based on their home country culture and early life. The participants indicated that the kind of environments and experiences they had, determined their outlook towards ECE and the importance of the natural environment within it.

4.3.1. Indian Teachers' Early Years Home Context and the Natural Environment

The home context played an important role in shaping Indian teacher participants' views on the natural environment and its role in early childhood. For instance, Ila recalled her home experiences as:

From what I had in my house, we had a lot of greenery in those days. I remember spending a lot of time with other children, playing like dramatic play and creating stories out of that. But not initiated by my parents like "Let's take you to..." which is now a normal trend here. It was just us being creative.

Along the same lines, Aisha talked about how she and her siblings would use the natural spaces and resources in their home environment for play.

It is important to note that in both cases, these learning experiences and exploration of the natural environment were initiated by the participants as children themselves and not by their parents. Both Ila and Aisha believed that these childhood experiences in the natural environment fuelled their imagination and creativity. According to Aisha, the lack of artificial environments and resources compelled them as children to seek "What is outside, you go and find kids in the street and you go play hide and seek, or you use your imagination, okay what are we gonna play today, how're we gonna do it?"

Another participant, Meera, did not recall any intentional or purposeful trips into the natural environment in her early childhood. However, she did recall experiences within the home that shaped her environmental perspectives, “Spending time in our own garden with the grandparents, helping them doing what they’re doing.” Rosie recalled her experiences in a different home environment:

I’m from the South [of India], from [name of city]. It is an industrial city, so it was all the industries around there, no open spaces, no gardens, nothing like that. What we had was pots and plants in the houses [relatively small flats], on the balconies. But my father, he wanted to teach us about plants and so he would get some plants and put them in pots for that.

The constraint of space led Rosie to explore areas beyond the confines of her flat:

Whenever there was any construction going on around, we would play in the sand there and the bricks! But only if mummy agrees or else, we had to sit at home. Sometimes we needed to escape and play in the sand there.

In contrast, some teachers recalled their home context as a place that granted them opportunities to explore natural elements within their home context. Chery described her home environment, stating “It was a big home with lots of trees and we had the experience of climbing trees and natural swings, not plastic swings.” Ila recalled, “We had lots of mud, trees, water, playing with my brother in the mud, things like that.”

In my knowledge of my Indian cultural context, and my personal experience, a common scenario in many Indian families was the family’s frequent visit to grandparents and extended family in other parts of the state or country. This could have been a common childhood ritual, usually annually, where the grandchildren would visit the grandparents in their ancestral homes. In contrast to the urban home environments, these homes would usually be situated in rural areas, where the children would get rich opportunities to indulge in and explore the natural environment. As described by Riya:

Once in a year or twice in a year, we just go there and enjoy the nice big space over there. It is a kind of village. Just go outside, go and play. We always had a good time when we go back there. When we come back to the city, it’s just a small house and we don’t have much greenery outside, no garden.

Thus, as can be seen from the teachers’ experiences, they did seem to have opportunities to make connections with the natural environment in their home contexts. This was usually self-initiated, but also encouraged by family members in some cases. The participants’

experiences indicated their natural inclination to explore the outdoors and interact with the natural environment. They appeared to be able to recall vivid and powerful childhood memories that were associated with experiences in the natural environment.

One of the factors that seemed to influence the Indian teacher participants' interactions with the natural environment within the home context was the importance given to an acceptable form of physical appearance and presentation for children. Based upon my own upbringing in the Indian cultural context and urban schooling system, a child's physical appearance and presentation becomes a priority for parents and schools alike. Hence, the idea of a neat, clean, well-presented child seems to take priority over the child being afforded the opportunities to freely explore the natural environment. The child's clean dress almost becomes a reflection of the child's background and upbringing. This might be the reason that three of the teachers brought it up during their conversation. When asked whether Simran had experiences in the natural environment in her childhood, she replied, "No, not really. Just get dressed, go to the park, and come home. And since we were dressed in our finer clothes, we were not to dirty them and things like that." Riya recounted that, "Mum and dad, they will dress me up like a princess, and over there, in India you know, you just can't go...even while eating you have to be really, really careful not to get it on the clothes." Aisha shared her experience of the school uniform becoming a precious possession that needed to be taken care of and preserved, saying "I know we used to get a lot of that, 'You've only got 2 pairs of uniform, and you get it dirty!'"

All participants stated how their home context was a stimulating environment for their early learning in and about nature. Spending their childhood in houses with gardens and open spaces provided teacher participants the stimulation they needed to form some bonds with the natural environment and instil a sense of creativity and resourcefulness. However, even though they had the advantage of favourable conditions such as gardens and large open spaces, interactions with the natural environment were not initiated by their parents but were a result of their own exploration and curiosity. On the other hand, one participant stayed in a flat where the only source of any connection to the natural environment was the terrace garden within their house. Yet, for this teacher participant the interest in learning about the natural environment was initiated and encouraged by a parent in spite of not having optimal access to natural spaces at home.

Irrespective of the contrasting living situations, six of the nine teachers had an opportunity to associate with the natural environment in different ways. Interestingly, these infrequent experiences might have shaped the teachers' connections to the natural environment. For instance, for Rosie, her childhood experiences, and the lack of natural elements within her home and school environment sparked a desire for such an environment in the future. According to her, "I missed all of these things in my home in India, because we lived in an industrial area. We didn't have many trees and plants. Ya, so since it was missing for me, I like to have that around now."

Experiences of the natural environment in their early years, or the lack thereof, appeared to have influenced the teachers' perspectives on the subject. Several teachers described their home environment as being a catalyst for their interest in the natural environment. Teachers were able to recall events and situations that made them realise that the natural environment and spaces were a part of their home context even if in small ways. These experiences often resulted in vivid and powerful lasting memories of interactions and connections with the natural environment. Overall, the teacher participants made creative and optimal use of the natural environment and spaces available to them, urban or rural, small or large. These interactions and connections with the natural environment seemed to depend largely on the participants' living conditions, availability of natural spaces and resources, and sometimes encouragement by parents or family members. However, it was also evident that the participants were keen to explore their natural environment, and hence often initiated these associations themselves. Teacher participants' early childhood experiences with the natural environment might have had some influence on their beliefs about the need for, and role of the natural environment in early learning.

4.3.2. Indian Teachers' Early Years' Education and the Natural Environment

Apart from their childhood experiences in general and within the home environment, teachers' own ECE or early schooling experiences seemed to influence their views about the place of the natural environment in ECE. In most instances, teachers recounted the lack of experiences *in, about, for, and with* the natural environment in their early years' education. According to the teachers, their early educational experiences were focussed on academic achievement, stringent routines and usually restricted to the indoor environment of classrooms. This did not leave them many opportunities to experience the natural environment within the context of early education. According to Aisha and Ila, the only experience they could recall of being in

the natural environment was glimpses of the natural landscape during their commute to school and back home.

Teacher participants' access to natural and open spaces was dependent upon the type of town/city they lived in during that time. Rosie shared, "Like back in my country I didn't have a big playground at my school, or all these kind of activities in my school." As she lived in an industrial city with limited space, schools were likely to be multi storeyed buildings with limited area for large playgrounds and green spaces, as is the case with many schools in developed and crowded towns and cities. On the other hand, while Meera did have access to a large outdoor play area in her school, she did not have opportunities to explore the natural environment around that space.

The teacher participants perceived several probable reasons for this lack of opportunities to make connections with the natural environment within the context of their own early years' education. This included lack of opportunities to be in the natural environment, contextual factors such as safety and affordability, and an academically oriented early learning curriculum.

Lack of Opportunities/Indoor ECE Context According to Meera and Aisha, even though they might have had natural open spaces in or around their school, they were not granted the time or the opportunity to explore this natural environment during their early childhood schooling. In Meera's words:

Yes, but where did we get the chance to go to these (natural) spaces? We spent about 8 hours in the school inside the classrooms. It was scheduled that you have to go to school for the day, then get back home, and then stay in there.

For both teachers, early learning was about being kept indoors with little freedom or choice. Hence, even though they might have had access to limited outdoor spaces in the natural environment, they were unable to explore these.

Contextual Factors: Safety and Affordability In the case where contextual factors often became constraints in teacher participants' experiences and associations with the natural environment in the early years' context, it was either related to safety concerns or affordability. According to Riya:

No, I don't think I had any kind of [natural experiences]. But kindergarten, I think they didn't want to take the risk of letting the children out and play, because here kindergarten's just kindergarten. But there, all in one campus, it's a part of the school, right? Kindergarten, your primary and your high school, everything will be in one campus. It is a big school, it's just because of them being very much protective on us, they didn't let us experience the outside environment...I wasn't allowed much outside to go and play. We were very much protected and secured in one place, in that four walls.

In addition to safety issues, Riya discussed the broader constraint of affordability. She explained, "It depends upon your affordability, right? Probably if you pay more money, the school will be really big, the kindergarten will be big. You might get a chance to go out and enjoy the natural things." Thus, according to Riya, children within the ECE context might have had diverse opportunities to experience the natural environment depending upon their socioeconomic status and in turn ability to afford the exclusive schools that might provide relatively larger spaces and increased opportunities conducive to education about, for and within the natural environment.

Academic Orientation of the Early Learning Curriculum Most teachers (six out of nine) cited the academic nature of the Indian ECE curriculum as the primary reason for a disconnect between their early learning experiences and the natural environment. From Riya's perspective, "I couldn't see any kind of natural education over there. You just sit and learn your rhymes, and your numbers...sit there, study your ABC and your rhymes." For Aisha, her early learning experiences did not contain any elements of the natural environment and hence initially she felt unprepared for making connections with the natural world herself. In her words:

I love going to [a nearby natural attraction]. I think it's just with age and learning about nature slowly, because obviously there was nothing as part of the curriculum we were taught in school. We had no clue how to get close to nature.

According to Meera, an academic focus, stringent routine, and lack of freedom to make choices resulted in the inability to explore the natural environment in the early learning context:

Since Nursery/KG [4-5 years of age] there is no option for us, you have to write and learn ABC means you have to write and learn ABC, 1 to 10. It was immense pressure at that age. It's not the same here. There were no options for us, whether we wanted to play or write or any other thing. You do what the teacher tells you to do.

For Chery, the nature of early learning within the Indian context prioritised academic skills and hence a textbook orientation rather than exploration of the natural environment:

It was definitely an indoors classroom. There was a playground outside but I'm not sure how much importance was given to the outside. But definitely it was a lot of books and reading and you get into a lot of art and reading, and numbers.

Some teachers such as Meera and Aisha highlighted the focus on academic development at the cost of other learning areas. Meera's response provided a generic but stark picture of the place of the natural environment in the goals and philosophy of ECE in India. She stated, "Where is the environment there? Nothing is considered more important than academics, literacy, numeracy." Rosie believed that a less academically inclined and well-rounded curriculum would have better encouraged holistic development for her:

But when I did my kindergarten there, teachers usually focussed on academic skills rather than social skills. There are so many other things to be learnt. Like, I have stage fear. I cannot speak with a large group of people, and I don't like changes, that's why I was in one school from LKG [4-5 years of age] to Class X [15-17 years of age]!

Meera had some fond memories of indulging in experiences other than academics during her early years. However, she mentioned that these experiences were initiated and encouraged at home and not within the educational context. She elaborated:

We were not very well off, it's not like we had a lot of money, so my mother would collect waste material like empty bottles and caps from the house and invent games for us to play. She would do that, not the school. I don't recall doing anything at school that brought me any joy and was fun.

Chery's words summed up Indian teachers' generic perspectives with respect to the natural environment and its place in early years education in their home country: "From my own

personal experience in India, through my student years, outside was not important...my experience has not been with an early childhood centre in India. But the outside, I don't think it was important back then."

Due to reasons such as overcrowded spaces and lack of opportunities, safety and affordability concerns, the participants did not always have the opportunity to use the outdoor spaces to their maximum benefit and hence were unable to make connections with the natural environment available in their ECE settings or schools. The focus on academics seemed to overshadow the need for including the natural environment into the ECE curriculum and context. Moreover, as is evident from the above-mentioned accounts of early education, experiences with and in the natural environment were not intentionally initiated, encouraged, or ensured by the teachers or schools for any of the participants.

These experiences seemed to show that the participants did not have many environmental experiences in their ECE settings. They viewed their early life as a routine they had to follow, tasks they had to complete. In their view, the natural environment was a passing sight in their busy and primarily indoor early learning routines. In the teachers' experience, and as is generally the case with most Indian children living in urban developed and overcrowded cities, the schooling system and structure did not afford many carefree experiences in the natural environment.

4.3.3. Section Summary

The Indian teacher participants had varied early years' experiences in terms of connections with the natural environment. Within their home contexts, some teachers had opportunities of exploring the natural environment while others did not. This was usually determined by the nature of their home context in terms of location and space. Whatever natural experiences the teachers did have as children were usually initiated by them out of their own interest and inclination, rather than by family or school. They appeared to have made the most of whatever natural spaces and resources were available to them at the time. Within their early learning/schooling context, most teachers shared a lack of opportunities to interact with the natural environment usually due to concerns of safety, affordability, and nature of school, and the prioritisation of academic abilities and curriculum over Environmental Education or experiences.

4.4. Early Environmental Influences on Environmental Identity

For the teacher participants, their early experiences seemed to fuel their interest in the natural environment and in turn determined their cultural perspectives on ECE and the environment. These influences were described in terms of the effects these early experiences had on their interest in the natural environment as well on their personality or identity. Meera traced the roots of her connections to the natural environment in her childhood experiences stating, “I think it [connection with nature/environment] started in my childhood, but with my own experience and with time I got more interested.” Chery believed that the sense of security she felt while exploring the outdoor and natural spaces in her home as a child might have influenced her adult personality positively.

For two other teachers, their early years’ experiences affected their perspectives on ECE and the natural environment quite differently. Riya stated that since she could not experience the natural environment freely in her childhood, she believed those restrictions made her want to compensate for that, considering she could afford to do so now in a different cultural setting after moving to Aotearoa New Zealand:

No, because what all I can’t do, I can do it over here, so that’s what made me happy.
And here, it’s just you know, wear what you want to wear and get ready for the play.
What all I missed there, I catch up, I do it here.

Similarly, Meera described how her affiliation to the natural environment as an adult was also influenced by her childhood experiences, but in a different manner:

I used to get to do this in India too because we would go to [a coastal city] very often in the vacations. Most of my mother’s family is there. I think my connection to the beach is since then. Here too, I like going to [local nature attraction], gardening at home.

Thus, for both the teachers, early years’ experiences played a major role in their association with the natural environment. While one teacher might be seen as compensating for missed natural experiences, making her inclined towards the natural environment; for the other teacher it is a continuation of her interest and inclination developed and encouraged in childhood. Although their experiences were quite dissimilar, the resulting effect was quite the same. They both perceived the importance of the natural environment in the early years based on their personal experiences.

Most teacher participants had opportunities to build connections with the natural environment in their early years. While a sense of security within the family encouraged exploration and interaction with the natural outdoor spaces, being a girl child also had very different early influences on their environmental experiences and identity. However, in all the cases, these early experiences influenced the way teacher participants connected with the natural environment not only in their early years but in their adulthood as well.

4.5. Home Culture Perspectives on the Natural Environment in Early Learning

This section includes the teachers' perspectives on the environment rooted in their Indian culture and upbringing. The context that they were brought up in and lived through would become their point of reference and worldview. Their cultural background would influence their environmental perspectives.

Some teachers described their environmental perspectives based on their cultural background wherein the weather was an important determiner of outdoor environmental experiences. Riya shared her experience stating, "Back in India, if it's sunny you're not allowed to go outside, you'll become dark. If it's raining, you're not allowed to go outside, you'll get sick." Another participant, Meera, explained:

Weather is an important factor in India. We wouldn't let our children go outside in the winters. While here, they play outside no matter how cold it is. Here they say it's only bad clothing, not bad weather. That's why we let the children play outside even if it's raining. Only if it's pouring heavily, we don't let them. We have raincoats and everything and they can go out in the rain.

According to the teachers, contrary to the practices they had experienced in Aotearoa New Zealand, the weather often became a constraint that hindered children from experiencing the natural environment and conditions. One of the reasons seemed to be health concerns, where parents were usually concerned for children's health which they felt would be adversely affected by unfavourable weather conditions such as cold, rain, and the harsh sun.

Two participants voiced gender related experiences within the Indian context. For example, Riya stated, "I didn't have that secured feeling over there, but here I feel very much secured to go outside and enjoy nature." Aisha repeatedly mentioned the gender aspect as an influential factor in shaping her environmental experiences and identity:

I think I have developed it [association with the natural environment] slowly, because obviously being a girl, born and brought up in India in a very strict environment...the only connection with natural environment was when we used to go to the village or when we used to be out at the back or just playing outside.

In Riya and Aisha's experiences within their home cultural context, gender played a role in their experiences of the outdoor natural environment where restrictions on movement limited their environmental experiences.

For some teachers, prior to formal ECE education in Aotearoa New Zealand, their environmental perspectives were based primarily on their Indian cultural background. For instance, Simran stated, "So, as my children were born before I got any formal training or education in early childhood, my thinking was very Indian when they were young. The kids should stay inside, should not get dirty, must wear shoes outside."

4.6. Chapter Summary

This chapter presented the findings related to the cultural identity and the associated environmental perspectives of Indian teacher participants. This cultural identity was explored through the teachers' perspectives on their culture and identity, their perspectives and early connections with the natural environment, the influence of early years experiences on their cultural and environmental identity, and their cultural perspectives of the natural environment in early learning. This was followed by their perspectives on the adopted Aotearoa New Zealand culture and the place of the natural environment within it.

The teacher participants discussed their Indian cultural identity in terms of values and beliefs that they deemed important for themselves and Indians in general. The teachers focused on the importance of interdependence, respect, religion, lifestyle, and cultural traditions. These typical values described by the teachers were similar and contradictory among the group, reflecting the complex cultural dynamics of the diverse Indian society. The participants often made comparisons between their home and host cultural context, highlighting the differences between Indian and European cultures, while also discussing similarities with the Māori culture.

Teacher participants' perspectives on the natural environment in the early years were based upon their early childhood experiences, early education, experiences of the natural

environment, and early influences on personality/interests. The teachers believed that their early childhood experiences, within the home and in the educational context, influenced their perceptions of the natural environment and in turn their initial environmental identity. The data showed that for participants from a country as demographically diverse as India, factors such as size of town/city, location (urban/rural), living arrangements, housing conditions, and early learning contexts made a significant difference in the opportunities that one might have had to interact with the natural environment. Despite that, most participants showed a keen interest and inclination towards exploration of the natural environment, which was usually self-initiated but sometimes also encouraged by parents or family.

For the teachers, experiences within the home tended to be positive and favourable towards the development of their environmental identity, whereas educational experiences seemed less favourable towards the same. According to the teachers, lack of opportunities, contextual constraints like safety and affordability, and a focus on academic learning did not provide a very conducive context for positive early environmental associations through education.

Within the home context, most teachers were able to recall the nature of their early environmental experiences. The home environment provided opportunities to develop connections with the natural environment, but this was also dependent upon the participants' living arrangements and home environments. In most cases, experiences with the natural environment were initiated by the participants themselves rather than by parents, where the teachers made optimal use of the natural spaces available to them. Either way, early environmental experiences seemed to have had a lasting impact on teacher participants' environmental perspectives and identities as children and adults, specifically in terms of their personality and interests.

This brings us to the bridge connecting these aforementioned perspectives and interpretations to the next stage in the Indian teacher participants' journeys of environmental identity transitions in ECE from their Indian home cultural context to the Aotearoa New Zealand host cultural context. It would be appropriate to begin an exploration of this transition by understanding their interpretations and perceptions of the host culture including that of an Aotearoa New Zealand national identity and its connections to the natural environment. This would provide a background to their environmental identity transition process in the new cultural context.

5. Transitions in Culturally-Oriented Environmental Identities

5.1. Introduction

The preceding chapter detailed the context of the Indian teacher participants in terms of their home cultural identities, their home country context, and their identities as Indian teachers. This chapter details the participants' interpretations of their culturally-oriented environmental identities as ECE teachers in Aotearoa New Zealand. The first two sections (5.2 and 5.3) present Indian teacher participants' perceptions of their host cultural context. This includes data on their perspectives on the Aotearoa New Zealand culture and their interpretations of the place of the natural environment in the Aotearoa New Zealand cultural context. These two sections help establish a context for the transitions that Indian teacher participants might go through as they begin their journey in Aotearoa New Zealand ECE, specifically with reference to their environmental philosophies and identities.

Section 5.4 and Section 5.5 presents participants' philosophies and beliefs about ECE, and the nature of various ECE settings that they practised in respectively. The following sections (5.6 and 5.7) present these teacher participants' perspectives on their cultural and their environmental identities as Indian teachers within the Aotearoa New Zealand ECE context. They include participants' reflections upon, and explorations of, the transitions their cultural and environmental identities undergo as Indian teachers practising in an adopted cultural and environmental context.

5.2. Perspectives on Aotearoa New Zealand Culture and Identity

Indian teacher participants' environmental identity transitions from the home to host cultural context began with their introduction and orientation to the culture of Aotearoa New Zealand. Their migration to a new country, assimilation into the new culture, and ECE qualification and work experience enabled them to interpret and understand the cultural context of Aotearoa New Zealand. This cultural understanding and perspective formed a basis for their transitioning cultural and environmental identities. This section outlines the Indian teacher participants' interpretations of the Aotearoa New Zealand culture and identity that in turn shaped their perception of and assimilation into the ECE context.

The teacher participants voiced their understandings of the Aotearoa New Zealand identity and culture in terms of the values they thought people from this country upheld. The most expressed values were that of independence and personal freedom. For instance, Meera was of the view that in Aotearoa New Zealand culture, children might be encouraged to become independent “very early on” because of their value for independence. According to Aisha, the value of freedom and independence was also evident in the form of frequent and often extensive holidays that were considered an indispensable part of their lifestyle and identity.

Some Indian teacher participants expressed their understandings of the Aotearoa New Zealand identity and culture in terms of their outlook on financial or socioeconomic status and its place in their lives. For example, Ila stated, “There’s more creativity, there’s more human value, and people still have respect, no matter what kind of job they do. It’s not tied to the money or to the status.” A couple of teachers interpreted these values in terms of this country’s culture and beliefs related to monetary matters. Simran and Rosie both highlighted their understanding of the Aotearoa New Zealand identity and culture in terms of how their familial or household economic arrangement was quite distinct to that of their home culture. In their view, the importance of independence and self-dependence resulted in an individually determined financial and economic management system for families and homes in Aotearoa New Zealand.

Most of the teachers described their understanding and interpretation of a general Aotearoa New Zealand identity in terms of independence, self-dependence, freedom, financial or monetary practices and lifestyles that reflected their life choices.

5.3. Perspectives on Aotearoa New Zealand Culture and the Natural Environment

The teachers interpreted the association and inclusion of the natural environment within the lifestyle to be an integral part of the Aotearoa New Zealand identity and culture. Participants’ understanding of the environmental aspects of the Aotearoa New Zealand identity and culture would have likely influenced their environmental beliefs and practices in Aotearoa New Zealand ECE. This section presents Indian teacher participants’ perspectives on the natural environment and its place in Aotearoa New Zealand culture and identity.

Indian teacher participants interpreted the place of the natural environment in the Aotearoa New Zealand identity in terms of people’s love for the outdoor natural environment in general. For instance, Simran stated, “I think they like the outdoors more...Why do Europeans

come/move to NZ? Because of the environment. It has so many places to explore, visit, open spaces, natural environments. So, these are important for them.” According to her, the natural environment of Aotearoa New Zealand provided the perfect opportunities and spaces for people from other countries to come and visit or live here. Hence, it became a significant part of their identity and life. In continuing, Simran also interpreted the association between Aotearoa New Zealand identity and the natural environment through her understanding of their lifestyle. She believed that there was a connection between Aotearoa New Zealand people’s inclination towards natural spaces and outdoor learning experiences.

Aisha expressed her interpretation of the Aotearoa New Zealand identity and its association with the natural environment in terms of the time many New Zealanders spent regularly in natural spaces, especially on holidays. According to her, “Holidays are important to them...you have to go fishing, you have to go to the beach, no matter what, you have to go camping, you have to go on an overseas holiday. Adventure is really important for them.” From her perspective, for people in Aotearoa New Zealand, a sense of identity was closely linked to a sense of place. Additionally, she believed that they had an innate and natural connection to physical spaces such as the water and the mountains, giving them a sense of place and being in the island nation. She elaborated:

I think it is something with the connection to the water, I don’t know if it’s fishing, I don’t know if it’s being in the water, everyone has to have that connection with the water, they have to go no matter what! The kids too have to be involved in that.

Aisha further added that she was unsure whether people in Aotearoa New Zealand identified with the outdoor natural environment as a lifestyle, a source of relaxation and fun, or the source of a deeper sense of place and connectedness to the natural environment.

Therefore, some Indian teacher participants made connections between an Aotearoa New Zealand identity and the natural environment. Their perspective of a national identity in general included significant elements of the natural environment such as a sense of place and connections to the natural elements, which were reflected through their lifestyle including the importance of taking time off and exploring the rich natural spaces of Aotearoa New Zealand.

5.4. Perspectives on ECE as Indian Teachers in Aotearoa New Zealand

In this section, the Indian teacher participants' perspectives on ECE as migrant Indian teachers practising in Aotearoa New Zealand ECE are presented. These professional perspectives include bridges that connect the participants' home cultural context to the host cultural context. From the teachers' perspectives, their beliefs and philosophies about early learning form the crux of their transitioning cultural and environmental identities as Indian teachers in Aotearoa New Zealand ECE.

5.4.1. Play-based Pedagogy

For most Indian teacher participants, play-based pedagogy was an important philosophy in Aotearoa New Zealand ECE. None of the participants had any qualifications or professional teaching experience in ECE in India. Based on their personal early learning experiences and current understanding of the field in their home context, in their opinion play-based pedagogy was a novel and significant aspect of ECE. They often voiced this understanding in terms of what they had seen or experienced in Indian ECE as compared to the Aotearoa New Zealand ECE context.

Some teachers saw a contrast between the academic orientation of ECE in India and the play-based pedagogy in Aotearoa New Zealand ECE. In Simran's view, ECE in her home cultural context was about formal learning and teaching. She stated:

Earlier we used to think it was all about preparing for schooling, studying...what are they going to learn from play? But after studying here I have learnt a lot about that. They are learning all the time! They don't sit and study per se, but yet they know more than me! They're still learning letters, they're still learning counting, they're still learning colours, everything while they're playing.

Exposure to a new play-based pedagogy through their qualification and experience in the host ECE context provided the teachers with a fresh perspective on early learning and play.

Sheila gave an example of her personal experience as a mother when she had just migrated to Aotearoa New Zealand, prior to any exposure to an ECE qualification or experience. As she explained:

It was quite funny because my son came here when he was 5, and he was writing in cursive and all from India, and then he came here, and he went to the school, and they

were not doing anything like that, and he got bored! He was like, “Mum, we don’t do anything in the class!” I was like, “What do you do then the whole day?” He said, “We just play!” I had to get my head around how things worked here. This was before I even applied to study. So, for me it was like a whole new way of...I had to shift my thinking of how early childhood works over here.

Thus, some teachers explored the notion of a play-based approach to early learning with reference to their personal experiences. They made connections between their professional and personal contexts where learning and experience in one context was transferred into the other.

Two teachers explored the goals of ECE in terms of the focus of early learning in the Indian context, as opposed to the Aotearoa New Zealand context. In Meera’s view, academic skills were prioritised in the Indian ECE context, as she said, “Our culture was so different earlier; it was more about rhythm and routine. Even our early childhood education, academic skills were given more importance, while that’s not the case here.” Ila was of the opinion that the Indian ECE context viewed development as academic learning, which she felt should not be the focus of early learning.

5.4.2. Freedom and Decision Making in Child-Centred Learning

The Indian teacher participants interpreted their ECE philosophy in terms of the extent to which the curriculum allowed for freedom of choice, decision making, and child-centred learning. As in the discussion above, this was often explored by way of comparison between the two early learning contexts. One significant difference identified by the teacher participants was the opportunities provided for children to make choices and decisions. As Meera explained, “In India they need to follow the timetable and do what the period is set for, and you can’t say I don’t feel like doing this or that. Here it’s different. They’re free to do what they like.” Riya talked about the academic focus of the curriculum in India. In her words, “It’s all about academics and you have to do this, and you are forced to do it. But here, the children, they have the freedom to choose what they want to do.” Thus, according to the teachers, the Aotearoa New Zealand ECE context and curriculum made provisions for flexible learning where children could make choices and decisions, while in the Indian context, a rigid timetable did not always allow for the same.

One participant in particular talked about the culturally-influenced and focussed nature of the ECE curriculum and context in India. In Meera's view:

Our culture is strict and so are our early childhood centres...that's the main difference. [Here] they're free to live like children, while in India they're not. There, they have to do what they're told, which is academic skills, they don't have an option for anything. Here they have an option. They are free to sit or stand or play. They are not told to stay inside or outside; they can come and go as they please.

She highlighted the contrasting features of the Aotearoa New Zealand ECE curriculum, where the focus was on free play. She added, "In India, it's about making the child sit down and studying. Children sit there and listen most of the time. There's no free play, while here it's all about that. Here the child is physically involved in doing things. While doing that, if children want to learn, they do. But we don't force them to do anything up to 5 years of age."

The participants also interpreted their goals and philosophies of early learning in terms of how child-centric the two curricula and ECE contexts were. Sheila recognised the importance of independent choices and decision-making afforded to children in the Aotearoa New Zealand context. She explained:

I think it's just how much freedom the child has over here [Aotearoa New Zealand], to make decisions, to do stuff, to choose what they're learning. We don't get that choice in India. Here it's like I said, child-based learning.

According to Simran, the curriculum in Aotearoa New Zealand was based on children's perspectives and interests rather than those of the teacher. In her words:

That's why here it's about the child and her/his interest. In her/his eyes it is an apple, it may not be for me, but it is for him. And as she/he grows they will learn that an apple looks like this. Here [Aotearoa New Zealand], you look at things from the child's perspective, there you see everything from the teacher's/adult's perspective.

Within the theme of child-led independent learning, Meera voiced her reasons for believing one context was more favourable to children's learning than the other. She said:

I enjoy New Zealand early childhood centres because it's different, it allows children to grow in their space, not yours. It's not about what you want, it's about their needs. Here they get to learn freely, live their childhood to the fullest, which is not the case there [in India].

Thus, for Meera, an important goal of ECE was to let the children take the lead and experience a sense of freedom and independence in their learning. For her, this was an integral characteristic of childhood and so it should have been retained in the early learning context.

At the same time, not all teachers were in complete favour of a child-led, freedom and independence-oriented learning approach to ECE as in Aotearoa New Zealand. Sheila was cautious about this aspect of ECE as she believed that ECE philosophy and curriculum should be balanced rather than only child-led. Therefore, although the two cultural philosophies regarding child or teacher-led curriculum might contrast with each other, Sheila's philosophy appeared to draw from both in order to create a balance between the two.

Two participants cited contrasting examples from the two contexts to highlight the importance of the learning process, rather than the product or result in ECE. As Meera discussed:

They [Aotearoa New Zealand ECE teachers] allow the child to explore freely. You don't tell the child what to do. The process is important, not the result. In India, even if you're drawing or doing art, you have to draw a circle and colour it within the lines.

Another participant, Simran, made a similar observation with an example:

Even if the children in preschool are interested in writing and they learn to write their names, for example, they may write the letters in any order, we don't correct it. They think this is right, so that's fine. The child may draw an apple or a cat, even if it doesn't look like that to us, in the child's eyes it is so. We don't say – no, it's not that. But in India – no, it's not that.

Thus, teacher participants presented the contrasting features of ECE in India and Aotearoa New Zealand to highlight differences in the curricula and contexts. The differences in primarily child-led or teacher-led curricula were highlighted in terms of the extent to which children had the opportunities to make decisions and choices in their learning; rigidity and restrictions; focus on academics, and prioritising learning process over result.

5.4.3. Holistic Development and Views on Learning

Four of the nine Indian teacher participants also described their ECE philosophy and goals in terms of their views on holistic development and learning. According to Chery, "It is

definitely the overall development, whether it's mental, physical, emotional, psychological, the complete overall holistic development of a child is vital for creating competent learners, confident, capable, independent learners." Thus, she explained her philosophy in terms of holistic development in keeping with *Te Whāriki* (MoE, 2017).

Sheila interpreted her philosophy and objective of ECE in terms of all-round development. She stated:

I think it's to build a strong foundation in the child of growing into this human being that is aware of the world around him. He is sensitive to people around. The purpose is to build the child into an all-around...well rounded human being catering to his emotional, physical, spiritual, and intellectual well-being.

Meera referred to her ECE setting philosophy to elucidate her philosophy of holistic development in ECE. She stated:

We need to give them that love and nurturance. Our centre's philosophy is also along the same lines. You need to work on these and the rest will follow. We have all other components including a transition programme, but unless you are kind with the children, it's not much use.

She highlighted the importance of love and nurturing as the foundation of early education.

Some teachers expressed their interpretation of ECE as an interaction based on respect, trust, and relationships. For Ila, it was "important that we provide respect to children." Meera talked about her views on relationships with children and families as a primary goal of ECE. In her words:

I think taking care of the kids is more important. Their needs are more important for me than learning. Learning will occur any time, anyway. If we don't build relationships with children, there can't be much that will be learnt later. For me relationships with the children and the parents are the most important thing.

She believed that building and strengthening relationships with children and their families was a prerequisite to learning and education. Ila described the importance of building relationships with parents and families in children's early learning to facilitate individual development and learning for every child.

Identity development was recognised as a key goal of ECE by one participant. As Sheila explained, "I would say that curiosity is encouraged more here [Aotearoa New Zealand ECE

context] than it is there [Indian ECE context]. So, with that the child really develops a sense of identity basically.” For her, the development of children’s identities was an integral part of their holistic development in ECE. This was achieved by encouraging children’s curious nature, an aspect that was seen to be not given equal importance in the Indian ECE context.

For the teacher participants, holistic development was an integral part of their ECE philosophy and goals, in keeping with *Te Whāriki* (MoE, 2017). Within the broader aspect of all-round development, teachers emphasised the importance of love, nurture, trust, relationships with children and families as critical to the process.

5.4.4. Life Skills

The development of life skills to become confident and well-developed learners appeared to be an important aspect of ECE for some teachers. According to Aisha, “I think for a child to be confident enough in themselves, that is really important, like whatever they do, they know what they’re doing.” Aisha highlighted the importance of life skills and how early education should have focused on enabling children to become confident learners rather than on academic learning or school readiness.

Children’s self-esteem and self-confidence were also considered critical aspects of ECE. In Sheila’s words:

If the child is not confident or secure in themselves, they will doubt every decision they make, everything. And that’s the thing in India which we don’t have because you’re just going to the classroom and you’re doing that. Whereas now, here [Aotearoa New Zealand ECE context], I intentionally make sure that I’ve got some bit of guiding children to build their positive self-esteem. If they don’t have that, they’re gonna constantly question what they do and doubt themselves. To me that’s the most important thing.

She highlighted the importance of ensuring positive self-esteem in children as a prerequisite to ensuring confident learners and adults. For her, this aspect was not as evident in her home cultural context. For some teachers such as Ila, well-being was a primary goal of ECE. According to her, children’s well-being could be facilitated by way of encouraging risk-taking and building confidence.

All teacher participants were of the view that the primary goal of ECE should be to facilitate the development of life skills in children in preparation for adulthood. For instance, in Riya's view, "For me, it is not preparing children in kindergarten for school, it is preparing them for life." This quote reflected the overall views of what the other participants stated concerning life skills as a primary objective and integral part of early learning.

5.4.5. Social Development

Several Indian teacher participants considered the development of social skills and competencies to be a vital objective of ECE. Riya and Aisha recognised the importance of children's social interactions with other children and adults in order to develop social skills and supportive relationships within and beyond the ECE context. Empathy was also considered an important aspect of social development. According to Riya it was most important to help children learn:

How to talk to others, how to be a good friend, how to be a nice friend, how to use your manners, how can you be social with others, how you can look after them. How you encourage them to support the other children in any way.

Teachers such as Riya and Prachi discussed the prioritisation of social skills over academic skills in ECE. According to Riya, "Social skills are very very important than the academic skills. If they've got the social skills, the academic skills will definitely follow them."

Social development was considered a prerequisite to academic development where the teachers believed that academic learning could only be encouraged once the child was socially adjusted and competent.

5.4.6. Section Summary

The findings showed that teacher participants reflected upon their ideas and beliefs about ECE by exploring, and often contrasting, the ECE philosophy in the Indian and Aotearoa New Zealand ECE contexts. They did so in terms of transitioning ideas about philosophies such as play-based pedagogy and child-centred approach; views on learning in ECE; and the broader goals of ECE including social development and life skills. Since these philosophical and identity transitions occurred within the specific contexts of their respective ECE settings, it was imperative to explore their perspectives on the Aotearoa New Zealand ECE context, as practicing teachers therein.

5.5. Indian Teachers' ECE Settings and Contexts in Aotearoa New Zealand

This section provides a contextual identity for each Indian teacher participant as an early childhood teacher in Aotearoa New Zealand. Descriptions of their ECE setting contexts from their own perspectives are presented. Teachers' interpretations of their context and experience specifically with reference to the environmental philosophy and practices at their place of work is discussed. The varied backdrops represent the diversity of ECE settings in Aotearoa New Zealand. Although all learning programmes are based on the ECE curriculum *Te Whāriki*, each ECE setting has its own philosophy and values that lay the foundation for their specific local curriculum and daily practice.

The Indian teacher participants shared varied perceptions of the environmental aspects and philosophies of their ECE contexts. These perspectives have been presented for each teacher within the context of their ECE setting. The representations included teachers' interpretations of their setting's physical context and the related environmental philosophies and practices; respective managers'/head teachers' interpretations of the setting philosophies and practices; and my observations of the settings. The observations were broadly recorded for the ECE settings' indoor environments, outdoor environments, environmental/natural resources, environmentally themed literacy resources, environmental and sustainability practices.

5.5.1. Riya

Riya had worked with two different Kindergarten Associations over the past 15 years. Her current kindergarten setting consisted of a large indoor space and outdoor area with natural grass, trees, plants, artificial turf, and bark beds. The outdoor space had several natural landscaping elements such as small ponds, rocks, and bridges. Behind the kindergarten building, was a large winding garden with an abundance of trees, plants, green patches, and textured plants for children to explore. The garden has several fruit trees and plants including strawberries, blueberries, mandarin, passionfruit, apple, and peach. The fruit was used to prepare food and shared among the children. The indoor environment had several areas and displays dedicated to sustainability and the natural environment including the life cycle of worms, use of natural and recycled resources, and kitchen gardens. The children were encouraged to use natural resources and reuse paper and were involved in making paper bricks using a briquette maker. Large windows provided generous views of the outdoor green spaces.

The kindergarten head teacher shared that their settings was an Enviroschools kindergarten. She provided a background as to how and when these programmes were started. She shared:

Many years ago, kindergartens had good budgets and we would plant a lot of things, we would plan for and save for environmental aspects. Now we have a property manager that sees to a lot of those things. We do get a little bit of input.

At the same time, the head teacher also talked about the challenges of being an Enviroschools Kindergarten. She talked about how they were still at the beginner level of the Enviroschools programme as it required a substantial time commitment to conduct the paperwork and administrative tasks in order to implement the programme on a bigger scale.

As part of the Enviroschools programme (Toimata Foundation, 2023), the kindergarten was involved in several sustainability and environmental initiatives such as gardening, composting, and recycling through the Paper4trees programme (Environmental Education for Resource Sustainability Trust, 2020) where schools and ECE settings were rewarded with one native tree/plant for every two cubic metres of paper and cardboard recycled. Riya used the Enviroschools values to describe the kindergarten's environmental philosophy stating, "Mainly, reduce, reuse and recycle is our motto. We explain them at mat time how we reduce things, how we reuse things, how we recycle things." Riya detailed specific learning experiences that the kindergarten undertook as part of their commitment to the Enviroschools programme, which were also described by the head teacher in her discussion. She stated:

We have a worm farm, we have our own compost, grow our own fruit and vegetables. We have peach, we have guava, we have mandarin, we have passionfruit, these are all the fruit we grow in here and we have grown corn, sweet peas. Children are very much actively interested and involved in gardening.

The head teacher believed that such sustainability and environmental learning experiences were essential for children's learning. This became critical as the existing living arrangements of families disconnected children from the natural world. In her words, "A lot of children now, are brought up in flats, you know they don't have gardens, so they don't know that you can actually grow the food and eat it. So, this is all part of that."

The kindergarten shared a border with a local park. Riya explained, "Wednesdays we take them through the park over there. We just go quietly into the bush and talk to them about the birds and what kind of sound they make, how they eat, how we look after them." The head

teacher also shared her perspective on the advantage of a park next door. She stated, “We consider ourselves the caretakers of the park out here, the bush.” Its location provided the kindergarten with the space and opportunity to take children into natural spaces where they could explore and experience the bush. The children had an opportunity to develop a sense of place and build a connection with their place of being. In addition, the head teacher talked about how they used the rubbish dumped in the park for intentional teaching. In her words:

Unfortunately, the bush here is used a bit for dumping rubbish, so that’s always a good thing to talk about. What could have they done with that? We’ll ring and make sure somebody comes and takes it away and it’s disposed of properly.

The fence between the kindergarten and the park had large picture windows that provided wide clear views of the park. She talked about how the kindergarten teachers came up with the idea of the big windows looking into the park with the objective of making the “environment more open.” She further shared:

We have adopted a big tree, which was on council land and extended our environment so that there’s a bigger space for running. It was just wasted space otherwise that was never looked after, so now it’s part of our space.

According to the head teacher, including the tree into the kindergarten premises provided space for children to explore and a sense of ownership and responsibility to care for the tree.

Riya was well versed with the Enviroschools philosophy and practices since she had been a part of it for several years. She was able to articulate the prescribed significance of environmental aspects within ECE curricula and practices. She also relied on Enviroschools literature to revisit these ideas and practices during the interview. Thus, being a kindergarten teacher provided her with the knowledge and guide to implement Environmental and Sustainability Education practices within her ECE context.

5.5.2. Ila

Ila had been a teacher at various ECE settings in Aotearoa New Zealand for over nine years. She had worked as a teacher and as a team leader during this time. At the time of the interview, Ila was the manager at an ECE setting that was originally family-owned and farm-based. The centre had just been acquired by a chain of ECE services, making it a part of the specific corporate group.

The centre was housed on a large farm with large natural green spaces. There was an abundance of trees, plants in flower beds and paddocks surrounding the centre buildings. The area has some artificial turf patches, bark beds, concrete paths, landscape features such as stumps, rocks, and boulders for children to explore. The outdoor space included a large sand pit with abundant resources. There were some sheltered areas in the outdoors for children to use during extreme heat or rain. The children spent most of their time outdoors except for mealtimes and certain indoor learning experiences. The centre did follow an all-weather policy throughout the year. Being a farm-based centre, the farm was home to ponies and chickens. The children's indoor spaces consisted of four separate rooms housed across two buildings on the vast premises. The centre apparently used primarily natural resources. The literacy resources for children included several nature-themed books. One of the rooms was home to a lizard kept in a glass case. The location and context of the farm-based centre provided an environmentally rich space for the children. This allowed for several opportunities and learning experiences that a city-based or regular centre would not have. According to Ila, the centre was undergoing major modifications due to change in ownership, but the central philosophy still stood for "providing children nature as a means of learning, and the environment as a means of learning". As the centre manager, she interpreted the centre's philosophy of 'Learning in Nature' as follows:

We have farm animals in this space where children look after them, care for them. Or use the eggs in their own cooking curriculum. They understand where things come from or growing plants and growing things together. That kind of aspect is for children to see actually what nature does for us.

According to her, the centre's philosophy was also based on other larger aspects, some of which were new to her. She explained:

There's Mother Earth involved which is a Māori aspect, The Treaty of Waitangi says protection, participation...so that is one of the aspects. In bicultural practices, we have actually used Matariki (Māori New Year) as one of the huge events where we do Hāngi (food cooked in the ground) here, which I have not seen in my practice before.

Ila detailed some of the environmental practices of the centre including interaction with the farm animals and use of the natural spaces to encourage children's sense of care and responsibility. She stated:

So, there's horse riding that they get to have, the chickens that we have, they get to look after them. We've had ducklings in the year, so they're learning how to keep them safe in our space. Learning how to care for ducks and sheep that we've had, not

right now, but she's gone for now. Feeding them, looking after them, what do they really need, is part of their everyday learning.

She described how the natural expanse around the centre was used for walks and trips where children explored their space.

According to Ila, the centre followed an all-weather policy except in case of severe weather or low staff ratios. She explained:

During summertime we open early, outdoor area, and in the evenings as well. We will try and keep outdoors open as much as possible. They're out a lot of the times. We provide gumboots or ask parents to bring gumboots and have waterproof jackets and stuff that they can go out and play in the rain. The only challenge sometimes is with staffing or ratios that we are unable to, if the numbers are low, the teacher numbers are low and then covering the entire space can become an issue.

Along with the advantage of being a farm-based centre with vast natural spaces and resources, the centre also had teachers who were trained in environmental programmes. Ila stated:

We have a couple of teachers who are forest programme trained and we used to do forest programmes in the past. With the changeover we don't have a vehicle to take the children. However, in the past the teachers from here have taken children on a weekly basis to a forest programme. That's again, learning science, learning maths through nature.

For Ila, being a manager was in itself a relatively new experience. In addition, this was her first experience at a farm-based centre where the animals and the natural environment was part of the curriculum and daily practices. She appeared to be motivated to learn more about this aspect of the centre but was also aware of how she needed time to get accustomed to and comfortable with certain features of the nature-based centre and curriculum.

5.5.3. *Simran*

Simran had been an early childhood teacher for about 22 years. She was the most experienced teacher among the participants. For all of her years in ECE, she had worked with the same not-for profit organisation. At the time of the interview, Simran was working with the youngest age group ranging from 3 months to 2 years. The literacy resources for the children included several books on animals, water, exploring nature. The teachers also made use of

animal cards to share pictures and identify animals with the children. The Aotearoa New Zealand native plants were used as the theme for a calendar prepared by the teachers for a wall display. The main play area had a small aquarium. Several natural resources like pinecones and bark were used for art and craft activities. A covered patio provided shelter for the babies to play in all-weather conditions. The immediate outdoor environment of the centre had bark beds and concrete flooring, several flowering plants and grassy patches, a sandpit, and some play equipment. Next to this, there was a large open green space with natural grass, several trees, and plants and larger play equipment. However, as Simran stated, the youngest children spent most of the time indoors due to their routines, and the amount of time for which they could be taken outdoors was dependent upon the number of staff at any given time in the centre.

The setting had a prominent nature-based programme that was clearly reflected in the director's philosophy, Simran's experiences, and the curriculum. According to the director, her philosophy was to "give all of the children the very best of opportunities and that includes a nature-based programme." This was evident in the centre's environmental practices. The children went on regular excursions into the community including places of cultural significance and the bush to learn about the natural world. The director described the objective of such excursions stating:

Exposure to the natural world gives them an understanding about the cycles of the seasons, what's in the bush, they're not scared of it, and they understand that the bush can become their playground, a learning place for them. And then they want to protect it because they care about it.

The director gave an example to elaborate upon the philosophy of taking children into the community and natural places. She described how on one such visit children found a stream polluted with a lot of rubbish. The teachers and the children decided to take up the responsibility of writing a letter to the local authority to show their concern and request action to address this issue. In the director's view, these experiences were critical for children as they developed connections with their community and natural spaces, which encouraged them to care for it. In her words, "You can't want to protect something if you don't care about it." The five centres, including Simran's centre, were housed on large spacious premises with abundant natural spaces that provide numerous opportunities for experiences with and in the natural environment. The director described the idea behind the centre environment and infrastructure as a connection between children's environmental experiences:

We've spent a lot of time investing in our buildings, we've got spacious playgrounds. Linking to that is our nature-based programme. You can see the partnership between the children going out into the forest, and the environments we provide here.

Simran provided a background of how the centre came to include a strong environmental component into their philosophy and curriculum. She explained:

I think [the centre director] and some other head teachers had gone to Europe, but those centres do it outdoors, camping, sleeping, nature schools. They did that, since then, for the preschool it is compulsory, they will go out, whether it's raining or any weather. The toddlers will go to a park here. And two of the groups including ours, goes to the [neighbouring educational institution]. There's a science environment too there, we go there to explore that too.

It was evident from the discussions with the Indian teacher participant, the director, and observations that the centre had a strong environmental component within the ECE curriculum and practice. The director's environmental philosophy seemed to be prevalent across all the centres and integrated into the curriculum. The teacher participant also seemed to have moulded her teaching philosophy and practice to include similar environmental ideas for ECE. She admitted to having no exposure to environmental aspects prior to joining this centre but had since developed her knowledge and practice over the past 22 years based on the director's philosophy, the natural spaces, and the centres' curriculum and practices.

5.5.4. Chery and Rosie

Chery and Rosie both worked at the same Montessori centre. The centre had a large outdoor space shared among all the three age groups and rooms. The space included a large sand pit, natural grass beds, numerous pots, and plants but few trees. There were several landscape features such as big rocks, bridges, and paths for the children to explore. There was a large, sheltered space with tables and chairs for outdoor learning experiences in wet weather. The centre did not follow an all-weather policy and children were kept indoors in case of significant change in weather. The indoor spaces in three different rooms were organised according to the Montessori philosophy of the centre. As the centre manager noted, "the prepared environment is very important." It was intentionally kept simple and bare, except for Montessori resources. The literacy resources for children were generic and did not comprise

of many nature-themed books specifically. The manager described aspects of the centre's outdoor or environmental philosophy stating:

We have the indoor-outdoor flow. The outdoor environment is set up with experiences, which relate to the learning that they've been doing inside, but it also relates to the natural environment, biology, geography, all the sciences. One of our main areas is practical life, so that would involve gardening, social skills, and the love of water. So, it could be learning how to wash the clothes, and everything is about the process from the beginning to the end and completing each step.

The centre manager also mentioned walks to the neighbourhood park where the children explored the bush and experienced the natural environment through sensory experiences. Children were encouraged to engage in meaningful conversations as they made connections with their natural environment and learnt more about it. From her perspective, the objective of these experiences was for children to learn about:

Respecting nature, because what we put into it, it gives back to us. To take care of Papatūānuku (The Earth mother), if we give respect, it grows well. We talk about the air it produces, the oxygen, the flowers, vegetables. We talk about how it's a living creature.

She further described the value of life in the Montessori philosophy. In her words:

If they have a love of insects, learning to look after the insect and be respectful because it's very small. A part of our Montessori philosophy is cosmic energy, so where does our bread come from? It starts right from the person that grows the wheat right through all those different people.

Thus, according to the centre manager, the Montessori philosophy included a natural element in terms of scientific knowledge and awareness of the surroundings including life, nature, flora-fauna, and food.

Chery

Chery was a teacher with the youngest group at the Montessori centre. She had 11 years of teaching experience in Aotearoa New Zealand. In her description of the centre's environmental practices, she mentioned recycling as the primary sustainability and environmental practice followed by the centre. She referred to the Paper4trees programme (Environmental Education for Resource Sustainability Trust, 2020):

Recycling definitely. We've got these bins where we put all our papers in and they get sent over to one place where, I don't know how many bins you've got to contribute to get a tree for the centre, so, it's something to do on those lines.

Rosie

Rosie was a teacher with the oldest group of children at the same Montessori centre. She had been teaching for four years. According to her, the Montessori philosophy was about being closer to nature or natural resources and hence that was the practice followed by the centre. She stated, "Montessori is all about the natural resources. We have all natural resources inside like the trays, if we want to buy a resource, we prefer a wooden one rather than a plastic one."

For Chery, environmental aspects of the curriculum were primarily recycling practices, while for Rosie, being closer to nature defined the environmental aspects of the Montessori philosophy. Both teachers seemed aware of the environmental aspects of the centre and curriculum but with particular reference to their specific Montessori philosophy and practices.

5.5.5. Aisha

Aisha had 11 years of experience as a teacher in Aotearoa New Zealand ECE. At the time of the interview, she was a team leader at a faith-based early learning centre. The larger premises included the faith-based institution itself and the faith-based school next door. The director described the centre as having "a special character, so we have built our centre around our faith. We have a strong core [religious] teaching component." According to the director, sharing the larger premises with the faith-based institution and school meant more space for children to explore:

We are able to utilise our community, which is our school grounds, our [religious institution] grounds, our local parks. We have got quite a small outdoor environment, that's what we do, take the children for walks out onto the street and into their community.

The mixed-age centre was housed in one large building for all children. The outdoor space was limited with a small sand pit and some garden space. It was a mix of natural and artificial material such as grass, bark beds, and concrete paths. The centre followed an open-door policy where children had the choice of being outdoors or indoors throughout the day. The

centre did follow an all-weather policy but did not provide wet weather gear for the children. In terms of environmental and sustainability practices, a teacher had taken the initiative to begin a worm farm but since she was not at the centre anymore and nobody else had taken on the responsibility, it was not revived. The centre kept a bird, a frog and an aquarium indoors. The literacy resources for children included numerous nature or environment-themed books.

Aisha provided a picture of her centre context in terms of the environmental and sustainability philosophy and practices:

We've got grass at the front where the sand pit is but most of the year it is cordoned off because it's raining, it's too wet, the kids are gonna kill it, then summer it gets too dry, the kids can't walk on it because it has to be watered every day. They actually need some place where they can run.

She believed that the centre faced certain challenges and limitations in terms of natural spaces for children to explore and spend time in. There was limited outdoor space within the gates of the centre. The director echoed a similar opinion stating children needed 'Fresh air. The opportunity to be more active without falling over each other, being able to spread their wings, run, jump, climb.' Due to these limitations, the centre often took the children out to the neighbouring school playground or park. Aisha elaborated:

We go to the school playground. We just go around the block, and it'll be just down the street. We've got a cul-de-sac, we just go around there, it's a quiet area, but they've got a little ground kind of thing with grass and trees, they've got a tyre swing. I think one of the other reasons [for going on walks out of the centre] is because at our centre we don't have a big playground, we don't have many trees and greenery that we can let them loose.

These trips were essential in order to be able to provide opportunities for children to spend time in natural spaces. Children could be involved in physical activities and become familiar with their community. The lack of space within the centre meant the teachers had to make the most of the neighbourhood space and parks. In the director's words:

We use the street at the end of [location], so that's our back entrance, there's a little green down the end. It's got a little grassed area with trees. The children are taken down there, they'll go looking for natural resources, seeds, leaves, whatever. Just to get out from each other's feet and see what there is outside. That's one way of getting out into the outdoor world or outdoor environment.

In order to take children beyond the gates, the centre had organised a trip to a petting farm before the pandemic had hit. The visit was a successful learning opportunity as most children had never been to a farm or seen farm animals before the trip. According to Aisha, the centre was working on planning and executing more nature excursions in the weeks following the interview. She stated, “From this coming week, they’re going to start doing bush park, so it’s for the older kids.”

The faith-based philosophy was central to the centre’s curriculum and practice. However, it appeared that the lack of outdoor natural space within the premises was a concern that could only be addressed by taking the children into natural spaces beyond the gates.

5.5.6. Sheila

Sheila had been an ECE teacher in Aotearoa New Zealand for a little over 15 years. At the time of the interview, she was a teacher with a privately owned group of ECE centres. The centre has a large outdoor space that was shared between the two older groups of children. The youngest group had their own separate smaller outdoor space. The landscape was mainly natural grass with several trees and plants. The outdoor space consists of a sand pit, bridges, rocks, concrete paths, a sensory pathway, climbing equipment. The centre was involved in composting and had a worm farm, a vegetable garden, and some fruit trees. According to the centre manager, the children were given the choice to spend time outdoors as often as possible. However, one practical challenge that limited this outdoor time was the expectation to keep the children dry and warm depending upon the weather. The teachers tried to maintain a balance between children’s natural desire to explore the outdoors and concerns about their health. The indoor space consisted of primarily natural and wooden resources. The literacy resources did not appear to include many nature or environmental themed books.

Interestingly, the centre had been looking at sustainability as an overarching theme for that year, as prescribed by the management. According to Sheila:

It [the theme of sustainability] came from the management that they wanted that as the focus of the centre. So, because they wanted that, to push that and drive that, we kind of went on board.

The manager at Sheila’s centre also referred to the theme of sustainability and related learning experiences. As she described, “We also have a centre wide focus which at the moment is sustainability. We weave that and we’re looking at how we can encourage the children to

respond to the curricular issue and look after our environment.” According to the manager, “It’s just pushing more and more deeper how we can encourage our children to care for Papatūānuku and it really merges in with our bicultural practice as well.” Loose parts had been one important feature of the ongoing sustainability theme. As Sheila explained:

Part of that [sustainability theme] came with us using loose parts. We had focus of using loose parts in our play, so using recyclable things, not like buying new toys.

Apart from the specific sustainability theme learning experiences, the centre had been involved in regular sustainability and environmental practices as well. The manager also talked about practices such as “worm farm, composting, Paper4trees, paper recycling.” Sheila elaborated:

We have like regular recycling of paper. Things like yogurt pots and all, we wash them and reuse them for art and stuff. Wasting of paper, we are very particular about, we are trying now to get them to use both the sides of the paper when they are drawing because otherwise it’s a waste. They just draw a little bit on one side and then that’s it you know.

The children took part in regular gardening, growing fruits and vegetables and using them to make shared food at the centre. In Sheila’s words:

In the gardens, we help water the gardens with the kids. We grow veggies, herbs, and stuff like that, then we harvest it with them, and we even cook. We’ve got apple trees, so once the apples are grown, we take them off, sit with the kids, and make stuff with it.

A neighbouring centre from the same organisation had been taking the children for bush walks. Sheila’s centre was in the process of planning for the same under the guidance of teachers from the other centre. Sheila detailed this process stating:

Ya and then we’re gonna start the bush trips as well, that will also happen...maybe if not this week, the week after because we’ve got to plan with our other...we have another centre she must have talked about. There’s another centre at [location] which is again another 15-minute walk from here. They go for the bush walk, so we’ll probably go with them and get the hang of the thing and then start it.

The centre manager shared her perspective on the objective of these nature visits. In her words:

We feel that children deserve that connection with nature and that they learn so much respect and working theories about the world through that connection... respecting

nature and seeing its beauty and how open the learning can be within it...if we don't foster that nurturing from a young age then it's a lot harder journey to be on.

Another related directive from the centre management was to take the children into the community regularly. However, due to staff shortage, compounded further by the COVID-19 pandemic, the centre was unable to plan any such trips in a long time.

Sheila believed that the reason for encouraging community visits was to take the children out of the setting environment so that they can make connections with their community. As she detailed:

You move out and you experience the world around you. You go to the park, you get a...first of all it's a good exercise thing. Secondly, it's like you might meet other people. Third thing is, if you're going along the way and you do all this rubbish picking and all, you're helping keep the place clean. So, different objectives.

In Sheila's opinion, another motivating factor might have been parents' queries and suggestions to take children for excursions out of the centre. She stated, "The parents, I think they feel that some centres go out more often and they kind of advertise it. It's like, 'What are you guys doing for that?'" Sheila talked about her ongoing experience of planning and organising one such trip for the children. She explained:

We're actually starting, from this week, we're gonna start excursions regularly. I'll be taking the kids to a park close by. Every teacher is expected to plan an activity per week. Also, when we're going, sometimes we'll get rubbish bags and then they can pick up rubbish on the way, teaching them to keep it environment friendly.

For Sheila there were several places and locations within the community that the children could be taken to. However, she believed that the process should begin with a place that is familiar and fun for the children. This would provide a foundation for the next trip where they would be willing to explore unfamiliar places:

We don't always have to go to a park, but for me, I think to get children attracted to the...even the concept of going out is that...if they go first to a park, it's like 'Oh, you know we're going out, and we had this fun'. Next time when I plan a trip, it could be to a school.

For Sheila's centre, the sustainability, environment, and community-based themes and learning experiences appeared to have been initiated or suggested by the management in most instances. These overarching themes were then planned and implemented by the centre

manager and teachers. Staff shortage and COVID-19 pandemic related challenges seemed to have been the biggest impediments in this process.

5.5.7. Prachi

Prachi was relatively new in the Aotearoa New Zealand ECE context at the time of the interview. She has been a teacher for about four years. Her centre was one of several in a chain of ECE centres. The outdoor space was fairly large with several natural elements such as a large sand pit, grass, trees, and flowering plants. The concrete and bark beds were interspersed with several green patches including a wilderness garden that housed insects and bugs. This area was also used for an ongoing Save the Bees Project as a safe haven for bees where children could observe and learn more about bees. There were landscaping elements such as wooden bridges, walkways, stumps, that made the outdoor natural space challenging and interesting to explore for children. The centre did have chickens earlier, but due to COVID-19 and the centre closure, they had to let them go. According to Prachi, the children spent at least half of their day in the outdoor environment. The centre did not follow an all-weather policy and kept children indoors on days of severe weather.

The children were divided into two age groups, housed in two separate structures on the premises. The indoor spaces consisted of environmentally friendly resources. The literacy resources for children included several nature-based factual books that would enable children to develop a scientific understanding of the natural environment. At the time of the observation, the indoor space consisted of several displays on the ongoing learning experiences and projects at the centre. One such display included material and photographs of children as they engaged in learning experiences related to a local water conservation project. Another display highlighted children's involvement in kaitiakitanga through a river clean-up project; the creation of a river model in their centre's sand pit; and the Friday rubbish picking walk in the community. There were specific areas and corners set up to reflect the theme of kaitiakitanga at the centre including a display based on *The fish of Maui* by the Aotearoa New Zealand author Peter Gossage; celebration of the Moon Festival; and nature art by the children.

The manager described the centre philosophy as being “all about nature” and “children making life-long connections with and respecting nature, each other, and the environment.”

Prachi discussed her centre context and its sustainability and environmental philosophy in terms of the related learning experiences, spaces, and excursions. As for regular ongoing centre learning experiences, she talked about a worm farm and a vegetable patch:

We have a worm farm. And we also believe in growing our own food. We try doing...during spring we grew spinach, carrots, lemon, oranges, you know like all these sorts of things, flowers as well to make bouquets during springtime. We still have some farming going on. We got some beans; you know kids are so fascinated by that.

Prachi focussed her discussion on the outdoor spaces at the centre:

We have a large playground area, so just be with them whatever they're doing. We play soccer there, we do some obstacle course, I arrange somethings here and there and do some courses around so that they can enjoy it. We do some woodwork as well, like carpentry, all these sort of things.

In her view, spending time outdoors was a way to encourage children's interactions with natural spaces and resources. It also enabled risk-taking, which was an important part of the centre's philosophy and practice:

We have a big sandpit, so we make some volcanoes in the sandpit and during summer we do water activities, we make you know canals and rivers. We have [a] big woodwork area outside, like so we make you know...kids learn to use hammer and nail and saw, put them together and make so many different things.

Prachi also referred to encouraging the use of loose parts as part of the centre's environmental philosophy:

Even when we are doing art inside or we have a very big...you know...loose part area. We use all the natural things like acorns, leaves, small twigs, stones, shells, whatever we can get from nature. It's all about nature. We try to avoid you know...using plastic, anything that's not natural.

The centre also took children on excursions into the community so children could learn more about the natural spaces around them. Prachi noted:

Another one [trip] is coming in next week. We are going to [local natural attractions], zoo walks, we just keep doing excursions. Kids keep on getting you know exposure outside...out of our centre. So ya, they keep on getting exposure to nature.

In her view, the children also developed a sense of responsibility as they went on these trips into the community. She stated, 'And every week we go for rubbish walk, kids you know get

to pick rubbish from the roadside, you know the sidewalk. The four-year-olds and five-year-olds go for soccer as well in a big field.’ The centre manager echoed this idea of community participation when she stated that the vision of the centre was “Connecting with Community”. She listed several learning experiences and excursions that children were involved in including tree planting on Arbor Day, trips to the local arboretum, and a local river project. However, she mentioned how some of these learning experiences were on hold due to the impact of COVID-19 at the time.

Connecting with the environment and community seemed to be central to the centre’s philosophy and practice. The manager and teachers seemed to be actively involved in taking children beyond the gate for regular nature excursions. Children were able to sustain these connections they made within the centre as well through follow-up discussions and learning experiences based on the excursions.

5.5.8. Meera

Meera had just over five years’ experience as an ECE teacher in Aotearoa New Zealand at the time of the interview. Her centre, where she had recently become the head teacher, was part of a corporation that owned numerous brands of early learning centres. As I was unable to conduct observations of the centre or interview the centre manager, the centre context described here is based on information shared by the Indian teacher participant. Meera discussed her centre’s sustainability and environmental philosophy in terms of the outdoor spaces and learning experiences, and certain challenges in the process. Meera stated that her centre followed an open-door policy where children were free to stay indoors or outdoors as they pleased. This was only regulated at mealtimes or in case of severe weather:

[It’s an open-door policy] Most of the time. We leave it open unless it’s really bad weather, it’s pouring down. Other than that, we leave it open in all weather, even if it’s winters, we leave it open the whole day. They can come and go as they like except when it’s lunch time, they have to sit and eat. Otherwise, they’re free to go out anytime.

The children were encouraged to be outdoors, and several learning experiences were conducted outdoors in open spaces. She stated, “We have a sand pit. We have water play. We do everything outside. We paint outside. It depends on the day, but we have our activities outside.” The centre maintained a garden where the children spent time exploring the plants

and flowers and finding bugs, which often resulted in children-led inquiry-based learning. As she described:

We have flowers. It's not a big garden, but small. They still explore it and spend time in it. They search for bugs in there. They are so excited and happy if they find a ladybug or a spider in there! Then we do our research on that. How many legs does a spider have, what does a spider eat? They show their interest in these things and then we research that and learn this way. At the back we also had a swan plant. They see how a caterpillar becomes a butterfly, they see all of that, develop their science concepts.

However, the COVID-19 pandemic had adversely affected their garden and vegetable patch. She explained:

We had herbs and things, but due to COVID most of it has gone now. Whatever was grown there was consumed by the children. We used the berries, lemons, so they see the purpose and process of the plants and trees. They learn that they picked it and now they're using it. Of course, it is not maintained now due to the COVID lockdown, but earlier we had planted a lot of things.

The centre shared a wall with a public park next door. The children were taken for walks to the park several times a month. However, due to the onset of the COVID-19 pandemic and shortage of staff, the trips had to be suspended.

Meera highlighted the challenges in being able to participate in some environmental and sustainability programmes such as Paper4trees (Environmental Education for Resource Sustainability Trust, 2020) due to financial constraints. According to her:

You collect all your wastepaper and give it to them, and in exchange they will give you a tree to plant. You can enrol for the programme. I think most of the schools are a part of it. I did try it out, but it is too costly for us to enrol.

Meera explained further how the centre did not charge a high fee as it catered to children from all socioeconomic backgrounds. This became a challenge as then the centre management had to prioritise learning experiences they could pay for. In Meera's opinion:

They're already doing a lot of other things for the centre. Like, we have a music teacher coming in that they pay for. There are several such things that they pay for. It's your choice, what you begin first, and if you want to start something new then you have to arrange for that expense by cutting down or reducing expense on something else. Our centre is not so expensive that we can expect that. There are some centres

that charge a lot, and they can spend on these things as the parents will be charged for it. But when we call the music teacher it's free for the children and parents because we're bearing the expense for that. That makes a lot of difference.

As is evident from Meera's account, she was inclined to use the outdoor space within the centre as much as possible. The neighbouring park provided additional rich opportunities for the children to go beyond the gates and make connections with the natural environment and the community. Financial constraints and staff ratios did appear to impact the possibility of planning and executing sustainability and environmental programmes and learning experiences.

5.5.9. Section Summary

The teacher participants' views about, and experiences of, the natural environment and its place in ECE were significantly influenced by the nature of the ECE setting. For the teacher participant whose kindergarten was part of the Enviroschools programme, the natural environment was part of their curriculum and daily practice. For teachers who worked in ECE settings that had a prominent and clear environmental component, the teachers appeared to be better informed about environmental philosophies and practices in Aotearoa New Zealand ECE. On the other hand, teachers who were part of settings where the natural environment did not feature or was not included within their curriculum and daily practice, the teachers had little or no information regarding environmental programmes in ECE within the local context.

5.6. Perspectives on Cultural Identity Transitions

The Indian teachers made significant cultural transitions when they began teaching in Aotearoa New Zealand ECE. These transitions were important as the participants had no ECE teaching experience in their home culture. The process was further compounded by participant diversity in terms of varied academic backgrounds, the nature of ECE and professional experiences in the host cultural context. This had implications for their ECE philosophy and practice in the host cultural context. As migrant teachers who had not undergone similar early learning experiences themselves, they had to start at the beginning and familiarise themselves well with the Aotearoa New Zealand ECE context, curriculum, philosophy, and practices, including how the natural environment was a part of it. The culturally-oriented environmental identity transitions of the participants as ECE teachers in

Aotearoa New Zealand are presented in terms of their perspectives on the place of the environment in the curriculum in ECE; awareness of ECE nature-based programmes; cultural perspectives and their influence on ECE practice; and the process of acculturation into the Aotearoa New Zealand ECE context.

5.6.1. Environment and ECE in Aotearoa New Zealand

Indian teacher participants' cultural and environmental transitions as ECE teachers in Aotearoa New Zealand would include identifying and interpreting environmental aspects of the early learning curriculum. Another integral component of these transitions would be their awareness and interest in ECE focussed environmental programmes in Aotearoa New Zealand. Teachers' understanding and knowledge of these two aspects could significantly influence their philosophy and practice within the ECE context, particularly with reference to the natural environment.

Te Whāriki and the environment

As migrant Indian ECE teachers, an important task is to enact *Te Whāriki* (MoE 2017), the Aotearoa New Zealand early childhood curriculum in their teaching practice. The teachers develop an understanding of a new and unfamiliar curriculum, which they interpret through their cultural lenses, and then put into practice in the local context. This is a complex, dynamic, and multi-layered process. It begins at the start of their ECE qualification and remains ever evolving as they practise in the Aotearoa ECE context. Like all developmental and educational components, the environment is woven into the curriculum, and the teachers are responsible for its meaning making and interpretation. The Indian teacher participants interpreted the environmental component in *Te Whāriki* with a focus on the curriculum Principles and Strands (MoE, 2017). They believed the natural environment was woven into these two layers of the document, directing related ECE philosophy and practice.

Some Indian teacher participants highlighted the explicit and implicit environmental aspects within the *Te Whāriki* Principles. They cited the Principles of Relationships | Ngā Hononga and Holistic Development | Kotahitanga in their discussions. The Principle of Relationships | Ngā Hononga talks about children's learning through responsive and reciprocal relationships with people, places, and things (MoE, 2017). For instance, Aisha interpreted the environmental component with reference to this Principle stating:

It [*Te Whāriki*] does [include the natural environment], when it talks about children making relationships with people, places, and things. You have environment, it calls environment the third teacher. They talk about looking after mother earth, Papatūānuku, growing your own stuff and things like that.

The Principle of Holistic Development | Kotahitanga reflects the holistic way children learn and grow (MoE, 2017). Three teachers referred to this particular Principle to discuss their interpretation of the natural environment as reflected in the curriculum.

Sheila highlighted the link between holistic development and going beyond the gates (Kelly et al., 2013) into nature. She stated, “I think part of it is getting the child to get an all-round holistic development, which you can’t have with only being in a classroom. It helps in their personal growth.” Aisha had a specific interpretation in terms of being in nature and spending time in quiet places. In her words, “It’s more like taking them to quiet places because that’s where the curriculum comes in as well, because it says going back to nature, children develop holistically.” Environmental aspects were seen to be integrated into the curriculum framework where connections with the natural environment and spending time in natural spaces ensured a holistic development for children.

Seven of the nine teachers discussed the natural environment as part of the Exploration | Mana aotūroa Strand. The Exploration Strand of the curriculum states that the child learns through active exploration of the environment (MoE, 2017). According to Rosie, the Exploration | Mana aotūroa Strand was comprehensive and hence included exploration of and in nature. For Riya, although the natural environment was a part of all curriculum Strands, it was central to the Strand of Exploration Mana aotūroa. She stated, “It comes under exploration, how children explore the nature outside. It definitely encourages us to help children to explore nature.” Similarly, Sheila believed the Exploration | Mana aotūroa Strand encouraged children’s sense of place. According to her, “Children are encouraged to explore the natural environment because that’s where you make sense of the world around you.”

Teachers also interpreted the environmental aspect of the curriculum through the strand of Belonging | Mana whenua. In Chery’s view, “If you look at the Belonging strand...it does associate them to Papatūānuku. The whole family and how the child is connected to the land and the environment and the respect that they offer to the environment.” Prachi explained:

We are following *Te Whāriki*, and in *Te Whāriki* we talk about the Māori values as well at the same time. As per that, Papatūānuku (the Earth Mother) Ranginui (the Sky Father) are the biggest part of whatever we are doing. When they are chopping the branches of the tree, we have to ask permission from the tree you know. Everyday it's a thing, like you are doing something to the tree and tree has a life you need to ask the permission you know. So ya, of course they learn to respect nature.

Riya described her interpretation stating, “We talk about the Māori perspectives of how to look after the nature. Like I said how to respect for the diversity of people and culture that's related to the curriculum.” The teachers saw environmental aspects of the curriculum framework reflected through the Māori cultural notions of connectedness with nature. They referred to the Māori worldviews of respect for the environment, as included in the Belonging | Mana whenua Strand of the curriculum.

Meera provided a comprehensive interpretation of the natural environment within the curriculum. She believed the natural environment was implicit in all aspects of the curriculum, including the Principles and the Strands:

It [*Te Whāriki*] doesn't talk just about the environment. It talks about many things like well-being, belonging, relationship, and empowerment. You can link it to many things in that sense. How does being in the outdoors impact their well-being, how do you develop their relationship with nature, empowerment as in how you teach them that the plant they grow today will yield benefits for them in the future. You can link the environment to everything in *Te Whāriki*. It's like a mat, everything woven together, this is the same, the environment is woven into all aspects of the document.

All teachers comprehended and interpreted the curriculum framework as having environmental features and teaching interwoven within the document. They drew upon various Principles and Strands to develop an understanding of why and how the natural environment is a part of ECE in Aotearoa New Zealand.

Environmental Education and ECE

Along with learning about and implementing *Te Whāriki* (MoE, 2017), Indian teacher participants are also required to become familiar with the local and current practices related to the natural environment within Aotearoa New Zealand ECE. This would be a critical reflection and determinant of their interest, awareness, inclination, and involvement in environmental programmes within the larger Aotearoa New Zealand ECE milieu. The

teachers' responses showed a range of awareness regarding environmental programmes or components within these programmes for the Aotearoa New Zealand ECE context.

As described in Section 5.5.1 Riya was a kindergarten teacher, and her kindergarten was part of the Enviroschools programme. Hence, she was aware of this programme and of how it was included in the kindergarten's philosophy and practice. She quoted from the Enviroschools material to explain, "We just empower the tamariki (children) and sustainable communities, learning for sustainability." However, other than this particular element, she did not refer to any other similar programme in ECE.

Simran and Sheila were the only two teachers who had been part of ECE settings that included nature-based programmes within the curriculum, and hence they were aware of similar practices. Simran was aware of the forest-programmes as the director at her ECE setting had been on a visit to Europe and adopted ideas from those programmes to create a similar programme for the ECE setting. Therefore, Simran had the experience of planning and implementing community-based excursions for children. Although she had not participated in it, she was also aware of the bush excursions organised for the older children within her setting. Sheila had first-hand knowledge and experience of a bush-experience programme, since she had earlier been with a not-for profit centre that had a nature-based programme where the children were taken on regular excursions into the natural environment and community. At her current ECE setting at the time of this study, she was aware of a similar bush programme run at another ECE setting with the same education provider. She stated:

We used to go to the bush from my previous centre. Some centres are now moving towards that. They call it a forest programme. Our other centre, they go regularly. There's a place behind their centre where they catch a bus from but I'm not sure where they go.

Aisha was vaguely aware of nature-based programmes by name, but not their content or practices. She had no experience with any such programme herself. According to her, "There are courses that are run by different organisations or people which encourage teachers to go and be a part of it [nature-based programmes] and they're called Nurtured in Nature, Back to Nature." Prachi and Ila were aware of ECE forest/nature-based programmes in general, but they did not know of any specifically, nor did they have any experience with such a

programme. Prachi explained this stating she was keen on being a part of such a programme in the future:

Some daycares which are all forest-based, like they are about nature. All of their programmes, everything is nature-based. You know, every day they sit outside, they are you know...far deep into the forest in the woods. I don't have experience, but I have heard stories about that. Maybe at some stage in my life I will work somewhere like that because it's good, it's good. I wanna see how teachers work with the kids in the natural setting.

Meera was aware of recycling as an environmental and sustainability component of ECE programmes. She specifically mentioned the Paper4trees programme (Environmental Education for Resource Sustainability Trust, 2020). She also referred to farm-based ECE settings. However, she believed that these were the few broader programmes, and most environmental programmes were personal initiatives by individual teachers or groups of teachers at their own ECE settings. Chery was unaware of any broader or overarching nature or environment-based programme in ECE. Like Meera, she believes that any such component of an early learning context was a personal initiative of the teacher/s at their respective ECE settings. She stated:

I don't know. I don't think I've heard of anything. I think it's just the centre's personal initiative that we want to be sustainable, so we've got rid of most of our plastic bags. So, I think it's the personal initiative.

Rosie also stated that she was unaware of similar programmes in ECE. Her knowledge of ECE and related programmes and practices had been focussed on the Montessori school of thought, as her ECE education and work experience had been specific to that. She explained:

There are a few but I don't have much of an idea about those. I know about Montessori. My experience in early childhood was as a reliever, and I also completed my 14 weeks practicum in a centre, so I knew the basics but not about any other programmes like this.

Awareness of environmental programmes and components in ECE varied among the teachers. Understandably, teachers who had had exposure to or experience with such programmes at their ECE settings were more aware of the environmental programmes' objectives and practices. Teachers who did not have such experiences were either unaware or had minimal

information about these learning experiences, usually limited to the common national paper recycling sustainability programme.

5.6.2. Cultural Perspective and Influences on ECE Practice

This section presents participants' perspectives on being Indian teachers in Aotearoa New Zealand ECE, which laid the foundation for their cultural identity transitions as migrant Indian teachers practicing in an adopted cultural context. They detailed these transitions within the ECE context through their interpretations of the goals of ECE and their professional philosophies regarding the same as teachers practicing in the local context. Their cultural transitions were also reflected in their awareness of and exposure to environmental programmes in Aotearoa New Zealand ECE. One significant feature of the participants' cultural transitions as ECE teachers was their comprehension, interpretation, and implementation of *Te Whāriki* (MoE, 2017). This was important as first, none of the participants had any ECE teaching experience in India, and hence no exposure to an ECE curriculum professionally. Second, this meant that their first experience with an ECE curriculum was in an adopted cultural context, which added an additional dimension to the process. Therefore, the teacher participants' understandings, and implementation of the Aotearoa New Zealand ECE curriculum framework were based on their home cultural perspectives and adopted cultural perspectives of the ECE context. The extent to which their cultural orientation as Indian teachers influenced their overall ECE practices was varied. The findings discussed here show how participants believed their cultural identity influenced their general teaching practice and environmental teaching practices.

Cultural Influences on General Teaching Philosophies and Practices

In terms of cultural identity influences on general ECE practice, most participants were of the opinion that one's culture played an important part in one's teaching practice. In one instance, Meera stated, "No matter what, you can never leave your culture or nature behind, it's always with you in whatever you do." She further added that maintaining one's cultural perspective facilitated a cultural exchange within a multicultural Aotearoa New Zealand ECE context: "If you take your culture along, you will learn about other cultures as well. I have learnt a lot since being here in NZ." She gave examples of how she encouraged such cultural exchange by way of celebrating festivals and promoting languages in her ECE setting.

Some teachers believed that a teacher's identity and culture could not be separated from their practice. According to Sheila, her cultural identity was reflected in her teaching practice as she respected and celebrated all religions and cultures at the setting, including her own. She explained:

I always make sure...I have a big thing for celebrating all cultures, not just Indian culture. I've been involved in doing a Chinese New Year, celebrating...we have Russian girls...bringing that and the Māori culture into the classroom. I think you can't separate that from who you are if you're really authentic. You will not say 'Okay I cannot bring this Indian thing.'"

For the teachers, celebration of festivals was a common way of acknowledging and including all cultures, including their own, within their ECE settings. Prachi described the celebration of festivals in her setting as a part of bringing culture into the early learning context.

Some teachers talked about the importance of relationships and care for others as a part of their cultural identity that influenced their practice. Sheila explained:

For me personally, my big thing is relationships. And I don't know if that is necessarily about Indian culture or origin, it's just who I am, building relationships is the first key thing in any interaction, be it a child or family.

Another teacher, Aisha, mentioned a similar interpretation of her professional philosophy, where she believed her Indian cultural identity was the reason behind her consideration and care for others around her. For Meera, kindness and compassion were features of her cultural identity that she brought into her practice as an ECE teacher. She drew upon the Indian cultural notion of *karma* (each action has a consequence; Jain, 2010) as the basis for teaching kindness and empathy:

It's a cycle – we can call it *karma* or by any other name. You want your child to learn to be kind, how will you teach them kindness? Don't kill any other being, don't do wrong by anyone/anything, feed birds, they will learn all of this if they see it being done. That is very important for me. But how else will you teach the child to be kind to others, be good to others?

The teachers believed that relationships were equally important within their cultures and the ECE context, and they attributed their inclination to be hospitable and caring to their Indian cultural identity. They worked towards encouraging and practising these qualities in order to help children imbibe the same.

Two teachers believed that the Aotearoa New Zealand ECE context was not just bicultural but rather multicultural. For Prachi, she believed that as an Indian teacher, she was able to encourage a sense of belonging in children of Indian origin, as it was easy for children to form a connection with people from a similar cultural orientation. She shared:

Little kids, little children, they're trying to find their feet, they want to belong there, they want to find somebody who they can identify with. It's like my identity helps me in that situation because I'm kind of bilingual as well, I understand. Bilingual kids, sometimes they're not that good at speaking English, but I can understand what he is trying...what she is trying to say. And they see my skin, their own skin you know, they see that oh yeah, she's somebody that belongs to us. So, I think I use my identity that way as well.

In Meera's view cultural exchange provided opportunities where "Children learn to live with each other. This isn't our country, we're adopting it, so we get to learn a lot about it through this cultural exchange." According to these teachers, cultural exchange and sharing was an integral part of the multicultural ECE Aotearoa New Zealand context, a reason for them to include their cultural identity in their teaching practice. Teachers are required to be culturally-aware and competent as it is their responsibility to enable each child to develop a sense of belonging within their ECE setting. They believed it was especially important for the large number of migrant children, teachers, and families in ECE as it facilitated the process of assimilation into their adopted multicultural context of Aotearoa New Zealand.

Two of the teachers, Aisha and Simran, shared how they believed their cultural identity affected particular teaching philosophies and practices. Aisha believed that she was inclined towards what she viewed as the Indian cultural norm and expectation of discipline within a learning environment. Simran specifically referred to the perspective she took when writing Learning Stories for children. As she described:

Like, I always see what the outcome is, what's the result? What are they learning from this activity? They do too, they probably do it. But I see how they do it. Were they able to do it? Was there any learning in that? Did they get the result? They say you must observe what the child is doing. Is there an interest in what they're doing? Interest, observation, and then you write what they did.

She believed that her cultural orientation may have been the reason she sometimes focussed on the result rather than the process while writing the stories. However, she was aware of this inclination and realised the need to shift focus.

Only one teacher, Sheila, acknowledged religion as a significant part of her culture that she believed she brought into her practice as well. She shared how her talk about Jesus Christ at Easter sparked an interest in the children, which they then explored for several weeks. Thus, the initial cultural exchange encouraged child-directed learning in this instance. For Sheila, “You bring what you value there, if the kids have an interest, you follow and do that.” Sheila also narrated how though she was a practicing Catholic, her cultural identity and values naturally enabled her to embrace and encourage all Indian and foreign cultures and religions. She stated:

It’s the same if they talked about Diwali, I’ll tell them this is how it is, this is the festival of lights and that doesn’t mean I practice that as a religion, but I’m sharing that broad cultural thing with them. Then I tell them, because some people think that if you’re Indian you’re Hindu, and they’re amazed when I tell them, ‘Well actually I’m not Hindu, I’m Catholic, but I’m from India.’ But I embrace all the religions or practices, not like following those Gods but I have my identity, but I also share that broader cultural thing with people.

The manager at Sheila’s ECE setting shared a similar philosophy regarding the inclusion and celebration of cultures and families in the setting:

We want our parents to feel comfortable as much as possible to bring their culture in, that they want to share with us, teach with us. We try and celebrate as much as we can together with our families and encourage them to learn about each other as well.

Two teachers took a significantly diverse view of the role their cultural identity played in her teaching practice. Chery thought her teaching philosophy and practice were not affected by her cultural beliefs. From her perspective:

My teaching philosophy is quite similar to the Indian ethics. Montessori teaching is very very similar to what I have learnt from my own schooling in India, because the most important aspect is respect and focussing on the child and providing that overall development opportunity for a child. My own personal cultural beliefs don’t interfere with what I’m doing at the moment, the teaching methodology here.

She was of the opinion that this was likely because her Indian cultural ideas and beliefs and schooling experiences were similar to the ECE philosophy followed by her ECE setting. Riya's perspective on the influence her cultural identity had on her teaching practice was also unlike that of the other teachers:

I didn't have any kind of teaching experience over there [in India] and I didn't do any teaching course over there, so for me everything is new and I just kind of continued with what I learnt in here. And I also haven't compared any kind of learning from here to there.

For her, the fact that she did not have any ECE qualification or teaching practice from India, meant the Indian context and her current Aotearoa New Zealand ECE context were unrelated. She stated that she had developed an ECE perspective only after migrating to her adopted country and she did not have an Indian reference point to compare that to.

Cultural Influences on Environmental Teaching Philosophies and Practices

Four of the nine teacher participants believed that their cultural identity and orientation influenced their environmental philosophies and teaching practices in particular. The nature of the cultural influence appeared to be diverse yet supportive of teachers' environmental inclinations to include the natural environment within the early learning context. The teachers thought that their cultural identity enabled them to bring in their cultural views on the natural environment and include them in their ECE teaching practices.

As discussed in the preceding section, Chery did not think her cultural identity influenced any other aspects of her teaching practices. However, she did think her childhood memories and experiences had a positive impact on her environmental beliefs and practices, which encouraged her to share similar experiences with the children at her ECE setting. Simran discussed how her cultural identity provided her a unique lens through which to view and assess children's development and learning. According to her:

For me, it's good to go out, explore the outdoor environment, for the children too. Because when another teacher takes them, they will see it differently, they will look at other different things that the children are doing, when I go along, I will look at different things differently. Otherwise, when you're writing the Learning Stories it's all going to be the same. I have a different perspective; I see what the children are doing in my way. It's good to record what I saw in my way for what the children are doing.

Her cultural lens provides a different perspective on a child's learning just as any other teacher from another culture.

Drawing upon several cross-cultural similarities, Meera, talked at length about the cultural influence on her environmental practice. She discussed an example of cultural beliefs about respecting all life forms:

If you go to see, the Māori culture is similar to ours in many ways. They consider all beings and things sacred or God - like food, air, plants. If the children are breaking or destroying plants, I will tell them that it's not ok. Many a times children kill a spider, and they do it often, but if I see them doing so, I will try to explain the value of life to them and how the spider is also a living being and must not be killed. It wouldn't like being hurt just as we wouldn't. I can't let go of that.

She believed that the cultural similarities between her home culture and te ao Māori (the Māori world) made it easier for her to facilitate environmental practices in her ECE context. She further linked these ideas to her cultural beliefs about *karma* (each action has a consequence; Jain, 2010):

It's the universe. What goes around comes around. If you do good to others it will come around to you. That's what we want to teach children, it's in our culture – that *karma* comes back. How will you do *karma*? If you believe in that philosophy, you can practise it. That's what you want to teach the children, how to be kind, nurturing, good human beings.

In her opinion, it was essential for children to learn about good deeds or actions with respect to the natural environment as that would determine their environmental attitudes and practices in the future.

For most teachers their cultural identity appeared to be linked to their teacher identity and was integral to their teaching philosophies and practices as teachers in Aotearoa New Zealand ECE. This was seen in the way of celebrating various festivals, acknowledging diverse languages, and valuing relationships and care within their ECE contexts. Some teachers also acknowledged the influence of their cultural identity in terms of certain specific teaching ideas such as a discipline and results oriented lens. Cultural identity also appeared to influence the teachers' environmental teaching philosophies and practices in particular. This was evident in the connections they made between their environmental teaching ideas and their childhood environmental experiences and unique culturally-oriented perspectives on

assessments and learning. The teachers also referred to the bicultural and multicultural nature of Aotearoa New Zealand ECE and made cultural similarities between te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals) and the Indian culture in terms of reciprocal relationships with the natural environment.

5.6.3. Acculturation and the Natural Environment in ECE

This section presents participants' perspectives on acculturation into the wider Aotearoa New Zealand culture and the ECE context. For most teachers, the process had been gradual and sometimes long. The teachers faced challenges and made adjustments in their ECE beliefs and philosophies to suit the new context. Some teachers discussed the challenges they faced as they adjusted to the Aotearoa New Zealand ECE context as early childhood teachers. For one teacher, Riya, the challenge was to come to terms with the play-based ECE curriculum (MoE, 2017). She stated, "It took a bit of time for me to think what are they doing? I came to understand that there is heaps of learning happening here." It took her a while to understand the reasoning behind this curriculum philosophy and the benefits of it.

The role and inclusion of the natural environment or related learning experiences in ECE also presented certain challenges or contradictions for the teachers. According to Ila:

No, we never did [have experiences with the natural environment]! And it [environmental elements in NZ ECE like all-weather policy/water play] can be hard like you say, that we've never had the opportunity. I can see why some teachers would want to keep themselves clean because they've always been like that, or it can be a belief that has been handed down to us. It's nice to see teachers here that they have different beliefs that go in line with our philosophy. It's good to learn from them for me as well.

Another participant, Rosie, described her experience stating:

But there, back in my country, our parent wouldn't allow us to play in the puddles because they felt if you played in the puddles, you would catch bugs or germs. But here, children need to play in the puddles, they need to feel and touch the mud. It was very hard for me to understand all those things but when I started working here, I learnt from the teachers working here and the ones who were born here that they've grown up like this, they've done things like this, here early childhood works like this. So, then I took everything in.

Similarly, Meera discussed her transition in terms of the all-weather policy followed by many local ECE settings, in contrast to her home context:

Even when it's cold during the winters, the children can stay outside. We may not let our children stay out in such weather, so I did get a culture shock for some things, but now I am used to them. I have been here for many years now; it doesn't bother me anymore because I have become used to it and I started adopting the new culture as well.

The teachers presented a comparative perspective of ECE in their home and host contexts describing what some termed 'culture shocks'. For some of the teacher participants, the experience of working in the local ECE context and support from colleagues within their ECE settings had enabled them to adjust their lenses, overcome challenges, and take different perspectives on the importance and inclusion of the natural environment in early learning. These experiences came in various forms and facilitated diverse transitions for the Indian teachers' philosophies and practices.

Contradictory to the participant experiences described so far, one teacher, Sheila, expressed a different view where although she was initially surprised at the difference between the Indian and Aotearoa New Zealand ECE context and practices, she did not view them as challenges but accepted them as the norm and adjusted her philosophy accordingly.

For the teachers who acknowledged challenges in the transition process, their professional and personal experiences in the host culture had been instrumental in the transition process of adapting to and overcoming challenges. For instance, another participant, Simran, shared her experience with reference to spending time outdoors in sunny weather, another contrast to her experiences in India:

Earlier, like we did in India, I would feel the kids shouldn't go out in the sun, because we are so concerned about the skin colour in India! Wear a hat, don't go in the sun. But now I use sunscreen and put on a hat, like the children, role model it for them, and then go out and play in the sun.

With reference to the outdoor environment, she further added, "This [setting up the outdoor environment] is important for them and I can provide these experiences for them. I've been working for long, so I can do it." The teachers believed that with years of experience, they had been able to take a completely new perspective on various aspects of the environment in ECE such as outdoor play.

The teachers further elaborated upon their specific adjustment processes while facing the several above-mentioned challenges. They explained how through experience they had understood and accepted the new philosophies and pedagogies of the ECE context. They voiced their transitioning perspectives on environmental aspects of the curriculum and their ECE setting practices. Riya talked about her setting's environmental philosophy and practices and about how she had made this a part of her beliefs:

You know even if it is raining, we have got raincoats over here, it's not about the day, it's about what you wear. That is what we believe in, our kindergarten philosophy is that you know. If it's raining you can't go there, if it's snowing you can't go there, it is really sunny you can't go there, nothing like that in our kindergarten or wherever I worked. If it is sunny, put your hat on, put your lotion on. If it is raining, put your raincoat on, just go on with the flow.

Simran's words reflected her setting's evident environmental philosophy. In line with the setting's practices and her experiences, she described her transition using the commonly quoted ECE philosophy of weather and clothing. She stated, "But they must be clothed accordingly. They say children never get sick while playing with or in water." For Chery, "It's all been a good learning experience for me as well. How to introduce, even to the youngest babies, how to introduce gardening. That's just been my learning as well because I haven't done that before." Thus, the initial challenges the participants faced as new ECE teachers were overcome with the help of adopting their particular ECE setting's philosophy, increased work experience in ECE, exchange of ideas with experienced colleagues, support from managers/head teachers, and personal reflections. Working with ECE settings in the Aotearoa New Zealand context had introduced them to new ECE practices and hence enabled their transition process. Adopting their setting's philosophy facilitated their transition process and adjustment into the new context, especially with reference to the environmental beliefs and practices.

Professional development activities seemed to be a significant enabler for one teacher in the transition process, specifically with reference to the inclusion of the natural environment in ECE practices. According to Simran, a recent professional development event provided her with the guidance to be able to include aspects of the natural environment in the curriculum and her teaching practices. She talked about one such experience that was based on the importance of loose parts:

Like, if you don't have a sandpit, the idea came from there, put the sand in that [any loose part]. The babies can access it according to their height and level. They also said that the outdoor environment has to be inviting for the children. The other thing is if there's a box – it's a loose part, things like lids, shells, drift woods, they can use them outside or inside.

This participant's experience also reflected the ECE setting director's philosophy and objective of "providing valuable professional development" for the staff to facilitate teachers' skills in "programme planning, the way we do our assessment, the way we write Learning Stories."

Sheila did not undergo any environmentally focussed professional development activity herself but was inspired by what she had learnt about the same from other teachers:

I haven't been to a PD [professional development] as such but I read from one of my friends who had gone to a PD, there's this guy David Spraggs, he's done PDs on sustainability. I read these notes and he said, so if you have 5 paint pots for the morning activity, to teach children that that's not endless supply, you're teaching them sustainability. That is also a part of the sustainability practice which I never really thought about till I read that, and I thought actually this is so good. So now, after that I put it into practice. You be reasonable, you give them enough but then draw a line because otherwise kids don't learn to be sustainable.

She took inspiration from others who were working in the area of sustainability and Environmental Education, or had opportunities for professional development in the area, and was putting these ideas into practice at her ECE setting.

For a teacher from the Montessori centre, Rosie, the nature related aspects of the Montessori philosophy were the basis for her decision to study that school of thought. This made the transition process smoother for her as she was focussed on a specific philosophy and put the same into practise at her ECE setting. She explained, "Maria Montessori, who was the founder, talks about children having peace, and then being closer to nature. Maybe that's why I was attracted to Montessori."

Some participants referred to their personal experiences as facilitators in their transitions process. For Ila, not having had similar experiences in her childhood made her realise the significance of environmental experiences in ECE for her son. Another participant, Sheila,

highlighted the contrast between her home and the host context in terms of the inclusion of the natural environment in ECE where back home her child had “no opportunities for this unless we took them out as parents.” These personal experiences as parents had enabled the teachers to understand the role of the natural environment in early learning and in turn facilitate their acculturation into the local ECE context. Their children’s ECE experiences in India and in Aotearoa New Zealand provided them with a fresh perspective on the role of natural experiences in ECE.

5.6.4. Section Summary

Indian teacher participants made the cultural transitions from their home context to that of Aotearoa New Zealand ECE through all the above detailed processes. They discussed their interpretations of the new adopted culture, their understanding of ECE within this new cultural context, and the specific acculturation progressions that enabled them to become practicing professionals in the current context. Their personal and professional experiences from their home culture, their setting contexts, and professional development opportunities appeared to have been instrumental in this adjustment process. An understanding of the teachers’ perspectives on their own cultural transitions provided a foundation for interpreting various focussed aspects of their identity. One such aspect, and the focus of the study, is the Indian teacher participants’ environmental identities and the related transitions as part of the cultural shift, which are the focus of the following section.

5.7. Perspectives on Environmental Identity Transitions

A glimpse into the teachers’ environmental identities or perceptions of self in relation to the natural environment are central to an understanding and interpretation of their environmental beliefs, philosophy, and practices in Aotearoa New Zealand ECE. The current section presents their diverse perspectives, beliefs, and ideas about the inclusion of the natural environment in ECE. They described this in terms of the importance of the natural environment in children’s growth and development, their personal associations with the natural environment, and their strengths and challenges while facilitating children’s and their own connections with the natural environment in ECE.

5.7.1. Significance of the Natural Environment in ECE

Holistic Development

The Indian teacher participants described the role and importance of the natural environment in ECE through ways in which interactions with the natural environment positively affected all areas of children's growth and development. Some teacher participants talked about how children's associations and interactions with the natural environment facilitated holistic development in the early years. Sheila stated, "I think it [being in the natural environment] is really good for the child's overall well-being, emotional, physical, holistic well-being." According to Riya, children's interactions and associations with the natural environment helps them "grow physically and mentally". For Meera, being in the outdoor environment provided an alternative to children who spent long hours in a single room at her ECE setting:

I think it's more important to spend time in the natural environment than inside. If you think about it, there are many children at the centre who're there from 7:30 to 5:30. It is much better to have children out in the open, this will facilitate their development as well, physical, and mental.

Physical Development

Some teacher participants highlighted the value of children spending time in the natural environment and outdoors, as they believed it was important for their physical growth and development. Rosie stated, "I think [it helps in] building gross motor skills outside. They get really strong when they play outside, like climbing, going on the slide, or taking on challenges." For Chery, the outdoor environment provided older children with numerous opportunities to engage in physical learning experiences:

Then we move to the middle group that is 2-3 years old. Their experiences are gardening, developing gross motor skills, which is climbing, running, hopping, using the hoop, digging. They've got experiences of digging, climbing, and watering.

From Rosie's perspective, spending time in the outdoor environment facilitated the development of gross motor skills in children. Meera took another perspective on the importance of the outdoor environment for physical development. She believed that spending time outdoors enabled children to use their energy optimally. She noted, "They use their energy more, it's quieter and calmer. The centre gets calmer. If they're stuck inside all day, it's really hard. When you have 35 children in one room, it's very hard". This refers to the

notion of children utilising surplus energy (Schiller, 1875 as cited in Dockett & Fler, 2008) while also being a positive alternative to a cramped classroom or indoor space.

Chery's ideas regarding the importance of outdoor space and environment in ECE were focussed on sensory experiences specific to her ECE setting:

They learn a lot from the sensory interactions whether it's touching the grass or feeling the clover in the grass, or touching the sand, sometimes they even eat the sand. Touching the leaves, looking at the sky, looking at the aeroplanes, the birds. So, it's all about gaining those sensory perceptions for them, yes.

She further elaborated that younger children have similar positive experiences when interacting with the natural environment in the outdoors, facilitating early sensory development. According to her:

When we start with the youngest children and the environment, their experiences would be crawling, standing up, running through the grass, feeling the grass, feeling the sand, touching the fence, actually touching the natural material outside. They've had experiences with plucking flowers and eating them, right now we don't have any. We have edible plants in our nursery where they have had the experience of plucking and eating it.

Another participant, Riya, believed that positive experiences in the outdoor environment enabled children to explore and take risks. Such experiences equipped children to overcome physical barriers and challenges. In her words, "The physical play, the challenging area, it's really good for them. We just go and help the children to move their body and take a little bit of risk." Riya's head teacher shared a similar perspective:

We like to provide a natural looking environment that enhances children's curiosity and helps build their resilience as well. We have lots of climbing, balancing, because children need those foundation skills to be able to do reading and writing. A lot of parents want us to do that formal kind of thing, but really, they need to be hanging from the monkey bars to be able to grip a pencil.

Sheila's developmental perspective was based on the perceived benefits of children spending time in the natural environment, especially considering the increased amount of time they spent indoors and on technological devices today. She stated:

It's a big physical development thing.... I think it's just something I like to do and get the kids to do because nowadays kids don't really do that! It's like you know you just sit in one place and...at home they're just sitting and watching the television or iPads

and all. For me it is like getting those kids' energy going, to keep them active you know. It helps their brain also.

In the teacher participants' views, the natural and outdoor environment was essential for various aspects of children's physical growth and development as it facilitated motor skills, surplus energy consumption, sensory experiences, risk taking and time away from technological devices.

Social Development

Two teacher participants talked about the importance of children's interactions in and with the outdoor and natural environment to facilitate their social skills. This was specifically relevant when children were going into the outdoors in groups. According to Simran:

When you go outside, you're not going by yourself, you're going with other children. You help them, sometimes with crossing, sometimes playing together, basically mixing, social interaction. Social interaction is a big part of your life. If you are not competent socially, you can't do much when you grow up.

She further added, "Children also develop friendships and self-regulation when they go out on these trips. More bonding between the older and younger children." Sheila talked about outdoor group learning experiences providing opportunities for developing social skills. She stated, "It [trips and excursions] builds their social skills because they're learning to support each other if they're stuck." The teachers believed that nature trips and excursions in groups facilitated children's social skills development and encouraged relationships among younger and older children within the group.

Emotional and Spiritual Development

Four of the nine teachers were of the opinion that it was beneficial to include the natural environment in ECE in order to facilitate children's emotional and spiritual development. Simran referred to her own experience to make her point stating, "I think it's good for them physically and mentally. They feel calm, just like us! We go out and we feel fresh with the fresh air, just like that." In Meera's view, "They [children] become calm. They make connections with nature, that soothes them." Aisha stated, "It's (being in nature) more peaceful. I think that it's getting them to be grounded." The teachers voiced their beliefs in the calming effects of spending time in the natural environment.

The teachers also made connections between environmental experiences and emotional regulation and development. Meera stated that children develop an “emotional attachment with nature”. Ila explained with reference to her farm-based setting:

Having the open space to run around or to play with whatever for as long as they want to, are one of the few key factors for children to learn about themselves and to self-regulate...I think it is important. If you see as a holistic approach...really listening to our self and getting in alignment with who a person can become. The endless opportunities and creativity that can come with being provided this open space, especially other than animals, the open space is another key aspect of our centre here, which you do not get normally. Those are one of the things that you actually get in touch with, who you can become or who you are.

Two teachers referred to open spaces as being essential to children’s early learning routines. Simran believed they are critical to break the monotony of being cooped up indoors all day. She stated, “If they only play indoors, they will be *ghute ghute* [experience stuffiness].” Chery opined, “But sometime of the day they need to experience the outside as well, not just be constricted in the inside.”

According to the teacher participants, children develop an emotional bond or relationship with the natural environment which facilitates their emotional development and regulation. They elaborated upon various ways in which they thought children’s experiences in the natural environment enables them to develop emotional self-awareness and self-regulation.

Knowledge about the Natural Environment

The Indian teacher participants believed that it was important for children to interact with and relate to the natural environment as it contributed to their cognitive development and knowledge about the natural world in many ways. Some participants discussed this from the perspective of children developing scientific knowledge about the natural environment. For instance, Meera and Riya both shared their experiences of taking children on excursions into the bush. Meera elaborated:

It’s important not just for their physical growth and development but also their mental development. If nothing else, we ask them what sounds can you hear? They listen carefully, they think about it, try to figure it out. If it’s birds, they try to look for the birds and see which birds they are. They look at butterflies. It involves everything –

science, nature. What do you see on the way to the park and back to the centre? We often see people walking their dogs, we stop and sit and talk to them, we don't let them touch the dogs, but we look and see. So many things to learn from these trips.

Teachers such as Chery and Meera believed that if children were to learn how nature works, they should see it for themselves. Chery used the example of planting and gardening with children to elaborate upon her view:

[If] children are more connected with the environment, they actually know what's happening, then they care for it. Once they see...when we do plantations with our children, so they understand the concept of putting the seed in the ground, we water them, look after them every single day, and they see that progression of that plant or seedling, they want to look after it. They don't want to pull it out. They understand the whole concept of the growth of that plant.

According to the teacher participants, children developed knowledge of and appreciation for the natural environment through direct experiences.

Some teachers took another scientific perspective on children's interactions and associations with the natural environment, with reference to an awareness of their surroundings. According to Prachi:

My centre's policy is like, whatever the weather is, it's winters, rain, whatever, they should be given exposure outside. I believe in that. They should understand how the cold feels, you know, or how rain feels like on your body, how hot scorching sun feels on your body. So of course, nature is an important part, ya, I believe that they should stay in nature.

Prachi also believed that knowledge and awareness of one's natural environment provided children with a sense of their own strengths and endurance:

They will understand about themselves more, how much tolerance they have for anything. You know if they don't bear it themselves, if they cannot challenge themselves outside, how would they tackle any difficulty in life. They learn their tolerance; how tolerant they are.

Riya voiced a similar opinion about children developing a sense of awareness about the natural environment by spending time in it. She stated, "Children know about the weather, they will know about how to survive in what kind of conditions." From Aisha's perspective, "They are learning what the natural environment is made of. I think that's more important

when you're slowing down because there's lots to learn even from the natural environment." According to the teachers, spending time in the natural environment facilitated a slowing of momentum in children's daily rushed routines, where they became aware of their surroundings. This awareness enabled children to learn about weather through sensory experiences of the natural elements, and in turn facilitated self-awareness of their place.

Rosie provided a comprehensive view of how children's interactions with the natural environment enabled them to develop knowledge and awareness about nature and the cycle of life. As she explained:

Everyone needs to know the food comes from the earth, how does it come? The process, cultivating and then processing, everything. So, if you want to eat something, if you want to live, we need nature. If you don't protect nature, you're going to die without food. The main source of our body is food, and food comes from the earth. And I also believe that we have to grow vegetables, at the same time we need to put all the peels and everything into compost, put it all back in the earth. That's where all these things belong.

Some participants added other dimensions to this discussion by touching upon the significance of teachers developing similar awareness about and connections with the natural environment. Meera shared a personal experience explaining:

We [Meera and her husband] tried feeding the birds in the backyard when we moved here, but since it was our first time, we learnt that they come in the summers and not at all in the winters. As summer began, we didn't realise we need to start putting out the feed, but they began to come and sit and wait. That's when we knew. But you will only get to see and learn about these things once you do it, and children will also learn from there. If I don't know it, how will the child learn about it.

She highlighted the critical prerequisite for teachers to develop awareness and a similar sense of appreciation and responsibility for the natural environment if they were to encourage the same among children. Aisha's words sum up most participants' views, as ECE teachers, regarding the importance of the natural environment. She stated, "Getting back to nature, I think that is quite important, how to be peaceful, how to calm yourself, I think you can't learn it from anywhere, nature is the best way to teach you."

The teachers believed that it was critical for children to gain knowledge about their natural environment. This was discussed in terms of scientific knowledge of the flora and fauna around them, the seasons and weather, and other natural elements. Alongside this scientific knowledge, teachers also considered it important for children to become aware of their surroundings through direct experience in and with the natural environment. These direct experiences were perceived to enhance children's confidence in terms of their sense of strengths and challenges with reference to the natural elements and environment. The teachers believed that an awareness and sense of place facilitated by direct experiences with the natural environment encouraged children's appreciation and sense of responsibility towards their place. It was also deemed important for teachers to have similar experiences and opportunities to make connections with the natural environment in order to facilitate the same among children.

Learning Dispositions and Life Skills

Seven of the nine Indian teacher participants discussed the importance of the natural environment in ECE by way of highlighting the value of such experiences in facilitating various learning dispositions and life skills in children. Some participants believed that experiences and associations with the natural environment encouraged independence in children. Simran provided a comprehensive view of this perspective stating, "They develop independence, confidence, and resilience. They learn all of this when they're outside." She added:

Once they go out, they explore the outdoor environment, they become independent, they can be flexible about what they want to do, what they don't want to do. [Being outdoors in nature means] giving them independence to choose what they want to do, how they want to do it, not only the one way that you can do it.

Some teachers talked about how experiences in the natural environment encouraged resilience and risk taking among children. According to Simran, "[In the outdoor environment] they learn, what they want to touch, what they don't want to touch, they learn by taking risk." Sheila also highlighted the advantages and opportunities in an outdoor environment:

There's not much opportunity [indoors] for them to grow in those things like risk taking, being resilient, or persevering you know. You go to the park there, there's high slides, there's things that are tricky, like you know the climbing frames and stuff.

She further shared her experience of excursions with a former ECE setting where children would trek up a small hill, an experience that helps build resilience in her opinion. She explained, “When you’re in nature, the teachers don’t say anything. You are left to explore. It builds the child’s resilience, stamina, you know you’re going up to the summit [of the hill]”. In Rosie’s view, “Because inside we have all resources, but they can’t take on challenges or risks as they might break something. We want them to take on challenges outside. Taking challenges and problem solving sometimes.” According to Prachi, “Children are able to take calculated risks in the natural environment. They are allowed to take risks as long as they are not harming themselves physically, emotionally, socially. They can just do whatever they want to do outside.” The teachers were of the opinion that children should have opportunities to explore their spaces, take risks and challenges in the outdoor natural environment. They discussed the importance of experiences in the natural environment as crucial to children’s confidence to take risks and provide a change in routine and pace for children.

Two of the nine teachers who had worked in ECE settings with clearly outlined environmental components talked about the role of nature excursions. According to Simran, “Children gain confidence, they learn about their strengths, what risks I can or can’t take.... they develop confidence in themselves.” The director at Simran’s setting had echoed this as her personal and the organisation’s philosophy when she had referred to the all-weather policy. She had stated it was an important learning experience for children to:

Go out in the rain, you’ve got a raincoat, and you can splash in the puddles, instead of sitting there thinking “Oh, I’m gonna get wet and that’s not very nice”. People grow up with those attitudes that inhibit them engaging in the world.

In Sheila’s view:

It builds their confidence, a lot of you know risk taking and stuff like that happens there [on nature trips and excursions] which you probably...we don’t have that much opportunity in our centre for risk management. I think the children are more confident because they...like again they are in an unknown environment, but they are sort of let to be themselves.

Sheila added another perspective as explained with an example:

It’s amazing you see...you see the ones...the other very important thing I noticed is the ones who are very reserved and shy in the classroom, as you keep going on those trips, their confidence builds, their social interaction abilities change. Because they are in that small group, they’re not judged by like...I can’t do this activity in the

classroom, but I can be myself out there. I've seen that work wonders for...especially for the ones that are a bit uncertain or unsure.

Thus, the teachers with experience of environmental programmes highlighted the importance of outdoor natural experiences such as nature trips and excursions in encouraging children's confidence, especially as opposed to the restricted indoor environment. Sheila in particular talked about how these natural experiences were especially crucial for diverse learners who might not have been as responsive or confident in the indoor ECE environment.

Some teachers shared their perspectives on the ways in which the natural or outdoor environment facilitated various life skills among children. Meera described visits to the neighbourhood park:

They also learn about what danger is and taking care of themselves. They learn how you get to the park. When our playground was being renovated, we had to use the main road and wear our [visibility] vests. They learn about how you need to use the road, wear the vests, stranger danger. They develop in so many ways, learn so many things by going outside.

Chery talked about routine cleaning tasks within the setting's outdoor environment stating:

They also do scrubbing, sometimes they draw on the concrete and they have got to scrub it as well. Washing chairs outside, once the days get warmer, they will be washing more. Even washing socks, the bigger children wash their socks outside. A whole lot of experiences for them outside.

Aisha referred to the use of new language and vocabulary:

They'll watch the road, they'll be like, "Oh look! There's a big truck!"; "There's a car". They keep talking about that stuff because then it's like building their vocabulary as well, they're getting that language development as well because they're getting exposed to all that.

At the same time, Aisha also believed that natural experiences within the gates (Kelly et al., 2013) needed to be natural and spontaneous in order for children to make the most of them. In her opinion, crowding the outdoor environment with learning experiences limited the opportunities for children to connect with nature and restricts their imagination. In her words:

They're outside means they have to use their imagination, they have to connect with nature, because they've got nothing else to do. But when they're outside and you've got the activities, you've got glue, you've got messy play, that is not connecting with nature for me!

These teachers focussed on the importance of outdoor natural experiences beyond the gate (Kelly et al., 2013) for children in ECE in terms of developing life skills, encouraging self-help skills and a sense and responsibility among the children. They also talked about how being in the outdoor environment provided children with increased learning opportunities and experiences as compared to an indoor environment.

For one teacher in particular, being a manager at the time of the interview meant additional responsibility. It was now her role to prepare and equip teachers to best use the natural environment at the farm-based ECE setting to the children's advantage. According to Ila, "[It is important to use the natural environment] not just for children now, to train teachers to see how to use that practice or what is the best practice to provide independence and social emotional development for children."

The participants elaborated upon the ways in which risk-taking experiences in the natural environment encouraged children to become resilient, confident, and independent by developing numerous life skills. They believed that outdoor experiences and nature excursions provided children with alternate opportunities to make choices independently and ensure inclusion of all children and their development.

Connections with Nature

Teachers such as Riya, Chery, and Rosie discussed how it was important for children to spend time in and with the natural environment, in order to be able to form connections and relationships with the natural world. According to Riya:

Children have to be a part of the nature; I believe in that. Nature and children, they are very much related to each other. How we look after the environment, how clean it should be, and what is our role as a human in the world to look after the nature, how we look after the animals.

Aisha and Chery added another dimension to the importance of children forming connections with nature by emphasising the need to do so at a young age. According to Chery, "If we can generate that respect for nature from the early years our planet is more safe for the future. Aisha elaborated upon how the current familial conditions and commitments necessitated the need for children to make connections with the natural environment. In her view, children

might be deprived of these experiences due to parents' busy schedules and routines, thus making it a critical aspect of early learning contexts.

Thus, the teachers believed in the idea that children must create connections with their natural spaces, in order to become aware of themselves and their place. They believed that these connections with the natural environment were the most effective ways to encourage a sense of self-awareness, care, respect, and responsibility among the children with reference to the world they lived in. Children's natural connection with the environment needed to be nurtured in order to encourage a sense of environmental respect and reciprocity among children, which is crucial for the sustainability of the planet.

Real Life Natural Experiences

One significant aspect that the Indian teacher participants focussed on was the importance of children's interactions with the natural and real world as compared to artificial and simulated environments in ECE. Chery provided a comprehensive interpretation of this perspective:

They need to have that fresh air. They need to feel...this is all artificial environment, as in created by the air conditioning, the warmth, it's not real. They need to feel what's actually outside...just feeling what's actually real, fresh air. Even listening to the birds, that's vital for them.

Sheila talked about the children going out into the natural environment and experiencing it for themselves. She stated, "I think it's really good for clearing your head because you're cooped up inside and you're not getting sunshine and the fresh air, so it's valuable."

Aisha highlighted the lack of natural elements in ECE settings stating, "You'll find some centres here as well, the matting is all artificial, there's no natural grass, there's no natural resources. The child is gonna go play, but the child is not going to learn anything about nature." In Simran's words, "Exploring the outdoor environment [is very important], the natural environment. Because inside is just like the toys, the materials, the outdoors is all natural." Simran's ECE setting director echoed a similar view when she stated that while children are in the natural forest environment:

...they're going to have to engage with the natural world, they might be making a hut out of sticks, or they might be learning about the plants, or they might be learning about a different walk or making a rope ladder. But all of that involves different skills than you would be learning in a centre.

Prachi provided several examples of practices within her ECE setting to present her perspective on the importance of children's real-world experiences in the natural environment. According to her:

We just want to give them the real-life experiences wherever they are going because their learning is not limited to the four walls of the...you know...our centre. What's going on, what's happening outside the centre. When they're going to the zoo, they're just not seeing the animals, they're getting to know like...why these animals are here, and why some of the animals are extincting [going extinct], and so many other things. Like when we're going to [local natural attraction], we get to see like all these butterflies. Some of these butterflies are just you know only a few in numbers left. There's a historical importance of any place we visit, kids get to know that you know. These experiences, we can only talk to them in our centre, to get a real-life experience they will have to get out of the centre you know and go there.

The participants highlighted the significance of children's experiences in their natural environment. It was essential for children to make connections with the natural environment by having interactions with it and vice versa. As opposed to artificial environments, natural elements within the settings were equally important if children were to make connections with and learn about the natural environment. This was critical as children made connections with the natural environment through sensory experiences of the natural elements. The teachers understood and realised the importance of children experiencing and connecting with the natural environment as they believe they felt the same need as well.

Freedom to Explore and Express

Participants such as Prachi and Simran were of the belief that children had freedom and opportunities for uninhibited exploration and expression in the outdoor natural environment. In the teachers' opinions, the outdoor environment provided many more opportunities to explore freely with fewer restrictions as compared to an indoor environment. The teachers also touched upon how such free exploration of the environment reveals more about each child, and hence is an opportunity for the teachers to get to know each child better.

Sheila provided another perspective on the importance of the natural environment in ECE. She stated, "I think nature brings out our...our actual being and...you know you can be

yourself in nature, because there's something about being in the natural environment. It's like there's no expectations about what you have to do." She also talked about how, unlike the structured ECE setting environment, children felt more confident and freer to express themselves in the natural environment. In her words:

Ya I think so, because it [being in the natural environment] just helps them be who they are. And we guide them and support them. The other thing is when you watch the child in the natural environment, you will find out if you watch closely, if they've got any insecurities, if they've got any fears, then you learn to support them with those fears. You probably won't see it so much because you're in a group and when you go in the forest, you're taking something like 6 or 8 children. So, your group is narrowed down anyway. You can focus more closely on one-on-one. In the classroom there's like activities, there's like say 5 people doing an activity. You're not able to pick up what the child's anxiety or need is as much as you would. You will pick it up but not so much as when they're outside.

The opportunities for children to be and express themselves freely helped teachers become familiar with each child and hence learn about their developmental and educational strengths and challenges. This in turn enabled the teachers to identify ways in which certain children might need focussed encouragement or support.

Creativity/Imagination/Innovation

Four of the Indian teacher participants highlighted the inclusion of the natural environment in ECE as it nurtured and encouraged creativity, imagination, and innovation in children. According to Riya:

You don't have any imagination when you're surrounded by the wall. The imagination is totally gone. When you go out there, you sit on a stone and imagine it as a horse, you go up a tree you imagine that you're flying in a plane...they create their own games and stuff.

For Meera, "It's more energetic. It's more fun outside than inside. Inside, you have fixed activities, you can set fewer tables, but outdoors they have their own way to play, they have their own games to come up with." Aisha provided examples of how she puts this idea into practice:

Sometimes I do know the answer [to children's questions] and I'm like, "Oh okay, what do you think, why is this happening?" It's just to instigate that imagination in them. They'll find some twigs and they'll find some branches and they'll be like,

“What do you think it is?” and I’ll be like “Oh, what do you think it is?” It’s just to have them being inquisitive.

Ila provided another example of the creative play children become involved in using the mud kitchen area at their setting. “They have a mud kitchen area that they can just be creative with it, that’s one.” Thus, the teachers were of the perspective that the outdoor natural environment provided more opportunities to be imaginative. They highlighted the unstructured and flexible aspect of outdoor learning experiences that encouraged children’s creativity. Being in the outdoor natural environment also provided teachers with opportunities to encourage children’s curiosity and imagination.

Sense of Joy/Wonder/Place

Four of the nine Indian teacher participants focussed upon the inclusion of the natural environment in ECE as they believe it nurtured and encouraged the inherent sense of wonder and joy children experience while exploring their environment. For Meera:

It’s more fun to be outdoors than inside. There are more children outside. If it’s summer, it’s really more enjoyable. Winter it’s different because you can’t have water play or messy play outside. In summer they have lots of water play outside, they love it! Children enjoy more.

According to Sheila, children enjoyed being outdoors in the natural spaces as they were open and big. She stated, “They’ve [children] got the idea that going out is fun, we don’t have to be stuck indoors or in the confines of the ECE setting you know.” Riya used the example of outdoor learning experiences to show how children enjoy the experience of playing with water and sand. According to her, “Water! Water is really good outside, especially at this time of the year. They just play with the water and sand for hours and hours. They love it.” Aisha understood and empathised with children’s desire to explore natural elements such as water in their environment. She explained with an example:

Well, I still like them playing, jumping in the puddles, because sometimes I don’t have proper shoes, but if I have, I go and accompany them. It is something that is joyful for them. Even when we take them for walks, in winter if they have their gumboots on, I clearly tell them, “If you’ve got your gumboots on, feel free to jump in the puddle”. I know I would like to do that.

Three of the teachers touched upon the idea of how interactions with the natural environment were uniquely and inherently exciting and magical experiences for children. Meera used the example of visits to the neighbourhood park to explain:

We have a park next door; we take them there quite often. We let them climb up the smaller trees, it's an open ground, they can run around. There's no resources or things to play with, but they are always so excited to go to the park and play out in the open, you can see that excitement only when they're outside there in the park, not inside the rooms.

Aisha shared a similar perspective, as she believed the natural environment provided children with little yet exciting experiences. She stated, "We take them for walks as well, it's just tiny little things, they'll find a flower on the road, and they'll be like it is something magical." Ila referred to the swale walks at her farm-based setting. According to her:

And just again, going around in the nature, having a swale walk. Sometimes children go around this way. During Matariki (Māori New Year) I remember they did a swale walk around at the back. So yeah, just getting connected with what we have around us.

Sheila added her unique perspective of the spiritual benefit of children connecting with the natural environment:

The children are just able to explore nature, look, show, you know...their sense of curiosity and stuff. It just expands, because in the classroom there's no...not many opportunities for it. You can be curious but not so much as when you go outside. You seek little bugs, insects, creatures, you admire leaves, the beauty around you. I think it's really soothing for the person's...child's soul.

The teacher participants believed that interactions in and with the natural environment in outdoor spaces nurtured children's inherent sense of exploration, curiosity, and wonder. Children's exploration of the natural elements in their environment helped them become familiar with their place. Real-life and regular experiences of and in their natural environment facilitated children's connections with their place. According to them, being in the natural environment was a joyful and enjoyable experience for children that needed to be embraced and encouraged as teachers in ECE.

As is evident from the above discussion, the teacher participants shared varied perspectives and ideas about the inclusion of the natural environment in ECE. All participants agreed upon

the fact that the outdoor natural environment was a crucial part of early childhood development and learning. They touched upon the apparent spheres of development where they believed interactions with the natural environment facilitated children's holistic development including the physical, cognitive, socio-emotional, and spiritual aspects. They also talked about how the natural environment provided children with more opportunities and freedom to explore and express themselves. Connections with nature allowed for creativity and nurtured children's imagination while satisfying their innate sense of curiosity, joy and wonder for the natural world. However, real-life experiences with the natural environment within and beyond the ECE setting premises were critical to this process.

5.7.2. Assessment Documentation: Learning Stories

As part of the data, I was able to gain access to some recent assessment documentation in the form of Learning Stories compiled by six of the nine teacher participants (Chery: 8; Rosie: 6; Riya: 12; Simran: 15; Prachi: 20; Aisha: 20). I analysed the Learning Stories in terms of their focus, theme, and content. The objective was to learn about the extent to which the Indian teacher participants focussed on various aspects of children's development and learning, especially with reference to culture and the natural environment. The Learning Stories were looked at with respect to the child's interest in, or relationship with, the natural environment and the inclusion of environmental aspects in teachers' observations. This analysis provided a glimpse into the Indian teacher participants' interests in, and perspectives on, environmental aspects of children's learning and development. It also reflected the role teacher participants' cultural and environmental identities played in their assessment practices.

Riya

Riya worked with a Kindergarten Association that was also an Enviroschools Kindergarten with a visible environment and sustainability feature and a large outdoor green space. Of the Learning Stories Riya shared, one was about cultural identity and awareness. The story was about the Cook Islands Language Week celebration at the kindergarten. Riya described the various ways in which the culture and language were celebrated with the children. As Riya also mentioned in her interview, it was extremely important for her to ensure that children were welcomed and included in the group, much like she was as a new immigrant to Aotearoa New Zealand. This philosophy and practice reflected her strong connections to her cultural identity and ways in which she included that in her ECE teaching practice. Some of Riya's

other stories were about learning experiences located in the outdoors as they described children's outdoor learning experiences but were not specifically focussed on the environmental aspects of the context and learning. However, all the stories in the outdoor context referred to the ways in which outdoor play in the natural environment promoted children's imagination and creativity.

Prachi

Prachi was a teacher who worked for a corporate chain of centres. Her setting was fairly large with opportunities for children to engage in and with the natural environment. Learning Stories shared by Prachi were clearly focussed on the outdoor space and natural environment. She connected children's learning in the natural environment with the curriculum Principles, Strands, Goals and Learning outcomes in the stories. Most of her stories made a reference to the various aspects of the natural environment as given in *Te Whāriki*. She made specific references to aspects such as meaningful links with people, places, and things; manaakitanga (the process of showing respect, generosity, hospitality, and care for others); kotahitanga (unity/solidarity/togetherness); and most often kaitiakitanga. She often referred to the Māori worldview of connections between the living and non-living to describe children's learning. These environmental beliefs were also evident in her interview data where she discussed the connections between Māori values and environmental experiences for children.

Prachi's Learning Stories focussed on children's curiosity and exploration of the natural world including animals and bugs within the ECE setting. These included stories focused on children nurturing chickens at the setting and children discovering praying mantises, ladybugs, and snails. Other stories focussed on the Matariki (Māori New Year) celebration, including children's creation of the seven kites of Matariki using natural resources like twigs and paper to learn about sustainability or kaitiakitanga, and make connections with the land and cultural heritage of Aotearoa New Zealand. She also described nature walks to look for patterns in leaves and trees and the learning experiences children were involved in for an environmental project within their city. Even though some of the Learning Stories did not focus directly on the natural environment, they included various aspects of it. The stories linked children's outdoor learning experiences with various additional aspects of their learning. She made connections between tree-climbing and developing resilience and the capacity to overcome

challenges; making sand slides with pipes and learning physics concepts; using an obstacle course to overcome challenges and develop confidence.

The Learning Stories stated the clear objectives of intentional teaching in order to facilitate respect and appreciation for the natural world; nurture children's curiosity about the natural world and animals; use the environment as a teacher; and make connections between natural exploration and scientific knowledge about the natural world. Her stories seemed to reflect her attempt to use every opportunity available to encourage conversations about the natural environment and exploration of the natural world with children at the setting, as was also clear from her interview discussions. The stories highlighted children's interest and enjoyment of the natural environment and outdoor space and the ways in which Prachi took these interests further with the objective of encouraging a sense of kaitiakitanga among the children.

Aisha

Aisha was the team leader at a faith-based centre that was focused on faith-related philosophy and education. The indoor and outdoor space was limited with few natural elements and hence the children had to be taken beyond the premises for time in open natural spaces. The Learning Stories shared by Aisha focused primarily on the indoor environment considering she worked with infants. Of the few stories that were about the outdoor environment, some were based on prepared learning experiences such as painting in the outdoors. One story highlighted how spending time on the slide outdoors encouraged the child to gain confidence in her body movements, explore, overcome challenges, and persevere. Another story was about a child's exploration in the sand pit outdoors. She discussed the child's sensory exploration of the sand and the related learning taking place in terms of confidence in the use and control of one's body and a sense of belonging in the ECE setting. As was evident from Aisha's interviews and observations of the setting, due to a lack of natural spaces within the gates, the stories seemed to be focussed on specific learning experiences in the outdoors rather than children's interactions with the natural environment. Other stories described children's experience of the community. Aisha described children's sensory experiences as they took a walk out of the setting and into the community. She also made connections between these sensory experiences and learning about the natural environment including leaves, flowers, trees, and animals in the neighbourhood. She highlighted the importance of children going beyond the confines of the ECE setting to experience the real natural world

and to take in fresh air outdoors. She stated the importance of these experiences for children to make connections to others and the natural environment.

One story described the children's visit to a petting farm. She described children's curiosity and excitement on the bus journey there and their observation of the natural world including farms and farm animals along the way. She highlighted how even the youngest of children got an opportunity to see and touch farm animals. They learnt about the animals as a way of getting familiar with the natural environment. Aisha made evident connections with the early learning curriculum, the Principles, Strands, Goals and Learning outcomes within for each story.

Chery

Chery worked in a Montessori centre with a shared outdoor space between three rooms. Most of the Learning Stories that Chery shared were about indoor learning experiences. This might have been because she worked with infants and toddlers, and their care routines require more time indoors. They did not spend as much time outdoors as the older groups. One of the stories did focus on the outdoor environment where Chery described a toddler's enthusiasm to be outdoors in the natural environment enjoying the sensory and tactile experiences in the sandpit. Chery made a note of how these experiences contributed to the toddler's physical and holistic development while building her confidence.

Rosie

Rosie worked with the oldest group of children at the same Montessori centre as Chery with the shared outdoor space. Learning Stories provided by Rosie focussed on the theme of culture and reflected her strong cultural identity as discussed in her interview. The stories described how the teachers and children celebrated the Indian festival of Diwali at the ECE setting. She highlighted children's sensory experiences through various learning experiences and the objective of learning about other cultures. The stories reflected Rosie's connectedness to her cultural identity and the ways in which she brought that into her teaching practice. Another story described a child's interest and exploration of the Montessori Nomenclature Cards. The child in the story chose to work with the fish cards enabling her to learn about the fish and its parts. Thus, Rosie noticed the child's interest in the fish and took it further by

offering her several related tasks, which could be her way of introducing and encouraging children's interest in and affiliation with animals and natural life.

Simran

Simran worked in a not-for-profit ECE centre with a significant nature-based programme and large outdoor green spaces for the various age groups. However, the Learning Stories provided by Simran were focused on learning experiences indoors. This was likely because she worked with infants and hence spent more time indoors to suit their care routines. Her work with the youngest group of children would not have been conducive to many outdoor learning experiences and excursions.

Thus, most of the teachers shared stories where the learning experiences or learning took place in the outdoor natural environment. For teachers who worked with infants and toddlers, there appeared to be comparatively fewer opportunities to take children in the outdoor environment due to the children's care routines. However, they highlighted children's interactions in and with the natural environment in terms of sensory experiences of natural elements. Some teachers did not implicitly state the environmental connections within their Stories, however there were indications and signs of children's connections with the environment through learning experiences and how the teacher took that interest further. Cultural connections were the theme for several stories shared by the participants. For a couple of teachers, environmental connections and learning was an important part of the Learning Stories. It was the focus of most of the Learning Stories they shared as part of the data. They appeared to have made concerted efforts to record children's interactions with the natural environment. Some stories highlighted teachers' interests in this area and how they made relevant connections between children's experiences, te ao Māori (the Māori world) and specific Principles, Strands, Goals and Learning outcomes within the curriculum framework.

5.7.3. Perceptions of and Associations with the Natural Environment

The Indian teacher participants talked about their broader perspective of what the natural environment meant for them and what it meant in general. They also presented a focussed interpretation of their personal associations and interactions with the natural world, primarily in the home context. The teachers shared these perspectives and interpretations in terms of the physical components of the natural environment; the nature of interactions teachers have with

and in the natural environment; associations with the natural environment within their ECE contexts; and the perceived positive influences on the self as a result of associations and experiences with the natural environment.

Natural Elements and Physical Components

Some teacher participants interpreted the natural environment in terms of the basic elements of nature. For Chery, the natural environment was “the elements of nature. The sky and the air and the ground, those elements are nature.” Similarly, according to Ila, “You get to play with mud, water. The open and the sky. Get to experience what fire is, or how do we work with that or what’s the safety measures. All five elements of nature.” Rosie’s interpretation was centred on flora as the primary element of the natural environment. In her view, “If you have more trees or plants around you, that’s nature. You will have fresh air, cool breeze, and you will be relaxed, pure oxygen.” Rosie’s interpretation reflects the nature of her environmental identity transition where her current environmental beliefs reflected a strong link to her early childhood experiences of the natural environment where a terrace garden was her only connection to nature.

Meera, Aisha and Prachi viewed the natural environment as a juxtaposition of natural and manufactured components of the environment. In Meera’s words, “Anything...like the sky, land, river, for me it’s all natural.” Similarly, for Aisha, “Natural environment is like grass, plants, shrubs, trees, parks, water, anything outdoors that is not man-made.” Prachi detailed this perspective through a comparative picture of the natural environment in her home context of India and her adopted context in Aotearoa New Zealand. She explained,

Natural environment...I think everything as per the nature. As nature has planned it, like the trees, nature is trying to grow there, the grass, or whatever you know, a stream you know. But still like I am from a city so I wouldn’t say that that is natural, it wasn’t natural. But those trees were planted in a way, they were helping us you know, to go through the pollution and everything.

Prachi reminisced about her childhood experiences and expressed her concern at the changing context and depletion of the natural environment in her rapidly changing home context. She stated,

But still, I think in like where I used to live, we still have greenery, we still have our parks intact. Though we can’t see them from our house now, but like still, there is some greenery around. But I wish it was like 20 years back, more trees, more greenery.

Prachi's nostalgia and desire for the natural environment from her past had transitioned into the Aotearoa New Zealand context by way of her increased interest in plants and trees within her home garden. She shared experiences about her passion for plants that she believed she had not reflected upon earlier. Chery provided a philosophical interpretation of the natural environment. She highlighted her admiration for the perpetuity of the natural world and the role of humankind in nature's sustenance. In her words,

Nature is very giving, it's continuous, it's permanent. No, I won't say permanent, it just depends on humankind to look after it to make it permanent. But it's very giving and it's continuous in the way that it never stops, it just keeps doing its work - day in day out, never takes a holiday. That's very inspiring for me.

Learning Experiences in the Natural Environment

The teacher participants discussed the nature of interactions they have with and in the natural environment as a way of connecting with it within the home context. Some teacher participants believed that they made connections with the natural environment by interacting with natural elements such as plants. Gardening was one way they associated with the natural environment in their immediate context. For Meera and Riya, having a garden space within their homes in Aotearoa New Zealand was a priority. The desire and opportunity to have green spaces within their homes reflected the teachers' transitions from a context where they did not have the same opportunities to a context where they could afford to prioritise these environmental preferences and connections.

For some teacher participants, spending time outdoors included talking walks, which was their way of making connections with the natural environment through sensory experiences. For instance, Ila stated, "I go for a walk. That's my way of looking at hills or sitting in the air." For Chery also, interacting with the natural environment was a sensory experience. She stated, "I still like to just go out for a walk and actually listen to nature sounds". Riya believed that the Aotearoa New Zealand context provided ample opportunities to connect with the natural environment. Due to safety concerns and limited accessibility to natural spaces in the home context she was unable to explore her environmental interests. Thus, the host cultural context appeared to facilitate her environmental identity explorations and connections with nature. Meera and Prachi talked about connecting with the natural environment via treks and trips to the beach.

Spiritual and Emotional Associations

The Indian teacher participants believe that their associations and interactions with the natural environment were important and healthy influences on their sense of self in relation to the natural world. They discussed several ways in which their various relationships with the natural environment encouraged a positive sense of self. Six of the nine teacher participants shared the perspective that their experiences in and with the natural environment brought them a sense of peace and calm. They felt relaxed and soothed in natural fresh air. Simran stated broadly, “When you go out into the fresh air you feel good.” Chery shared that she liked “going to the parks or the gardens” as she found spending her mornings there “very calming”. Sheila and Aisha were of the view that experiences with the natural environment, associations with natural spaces specifically, relieved stress and enabled them to relax and form deeper connections with the natural world. According to Sheila:

I think of the trees, the grass, the sea, I love the sea. I think water is very calming and soothing. I don’t know what it is with nature, but it’s just...a sense of abandonment or whatever you want to call it. I’m trying to find words to think...I just feel really good when I’m out in nature. I can just kind of push aside my thoughts, my worries or whatever and just kind of find a sense of peace and tranquillity because there’s no business, there’s no nothing, it’s just you and nature.

Aisha shared similar experiences and views stating,

I can feel that my body relaxes when I’m outside, with big trees and grass and shade... you can feel the tension loosening in your body. [I like to] go to the beach, find a quiet place, a shady place to sit or just walk along the beach, the water just touching your feet. It just calms you down. It’s something in nature that just brings all the tension out of your body and relaxes you like anything.

Riya’s words summarise these shared perspectives. She stated, “[It encourages] great imagination, peace of mind, I always get that peace of mind when I go outside. Fresh air keeps us healthy.” For all the teachers with these shared views, the Aotearoa New Zealand context provided opportunities and easy accessibility to explore open natural spaces. This contrasted with most of their early childhood and adulthood experiences in their home cultural context. Thus, the teachers appeared inclined and motivated to be in and make connections with the natural environment.

Simran presented some diverse views on the positive influences of making connections with the natural environment. According to her, experiences and interactions with the natural environment enabled her to learn more about herself and challenge herself. She explained:

I didn't go out initially, but now I've started going out, walking uphill. I try to go higher each time, go further, I also get to know what my strengths are, I set goals, I try to reach the distance I believe I can. You get to know your strengths and limitations as well.

Sheila also talked about how being outdoors in the natural environment facilitated her thought processes and encouraged fresh and diverse ideas. In her words, "You're doing something and then you take a break and go out, you get more ideas, I can do it this way or that way. You think better and differently when you're outside."

Shelia took yet another perspective on her experiences in the natural environment and its impact on her personal self. Being a religious and spiritual person, she believed that making connections with the natural world facilitated her connection with God. In her words, "I'm quite spiritual, so when I'm in nature, I'll identify with God at that time. So, I see more...I'm able to kind of connect more with God in natural surroundings." Sheila extended her perspective on the positive link between the natural environment and the self by highlighting the importance of spirituality in te ao Māori (the Māori world). She explained:

I think it brings out a bit of spirituality as well, when you're in nature. You can think and focus on something beyond yourself. In saying that, if you're not religious, you can still be...you know like, if you look at the Māori culture, spirituality is part and parcel of their life. I've seen Māori people that are not necessarily religious, but they still have that thing of focusing on the spiritual world. I think that is part of every human being. Some acknowledge it, some don't. But it's present in people's lives I think, relating spirituality to the environment.

Like Sheila, Meera also presented a cultural perspective on the relationship between the natural environment and the self. According to her, her cultural orientation and upbringing determined her positive relationship with the natural world around her. As a result, she had learnt certain ways of associating with the natural environment in her home context, while also developing her own ways of making these connections in her adopted cultural context. In her words:

I am very creative, I've made a bird feeder, every evening I put out grains for sparrows, more than 50 come here to feed. I have three fish in my pond outside. I like

all that, interacting with nature. It's from the beginning with us, you feed dogs, that's our culture. My mother would put out grain for the birds too. I think that's where I get it from. Even today, my mother feeds birds, cows, and I think that's who I get it from, but I have just developed my own ways of doing things, connecting with nature.

Thus, for Sheila and Meera, their environmental identity transitions were closely linked to their home cultural identity. They sustained these connections as they transitioned into their current host cultural context by making the most of opportunities to further explore their environmental identities and develop connections between their cultural and environmental identities within the home and host cultural context.

Natural Environment in their ECE Settings

According to Ila, Meera, Aisha, and Prachi, experiences at their respective ECE settings provided opportunities to connect with the natural environment. Ila talked about how providing natural experiences for her own child and all the children at her farm-based setting was also a way for her to connect with the natural environment. Meera discussed her personal preference for the outdoors and outdoor learning experiences with children as a way of connecting with natural elements in her ECE context. She stated,

Personally, I like water play and outdoor play. I like the sandpit as well. It's my work of interest as well when I am outdoors. I make up lots of games with them as well and enjoy outdoors more.

For Prachi, who considered herself an outdoorsy person, spending time outdoors in the natural environment meant keeping up with the children as they enjoyed the experiences. This was a way of connecting with the natural environment for her. In her words, "When you're outdoors you have to stay active with the children, it's more fun." For these teacher participants, their ECE settings within the Aotearoa New Zealand context were spaces to explore their environmental identities and connections. This inclination and motivation to do so within the ECE setting might be linked to the lack of similar opportunities in their own ECE experiences within the home cultural context. These experiences reflect their transitions into a different ECE context that provided new and increased prospects for environmental identity development for themselves, and in turn the children within their settings.

The teacher participants shared their perceptions of and association with the natural environment within their current host cultural context in diverse ways. Some teachers

interpreted the natural environment in terms of the natural physical elements around them while some referred to their interactions with and learning experiences within the natural environment. A few teachers discussed a spiritual and emotional association with the natural environment, while for some it was about association with the natural environment in their professional capacity within their ECE settings. The diverse environmental perceptions, associations, and experiences reflected the teacher participants' cultural and environmental identity transitions from their home cultural context to their host cultural context.

5.8. Chapter Summary

This chapter presented the findings related to Indian teachers' transitions from their home cultural context to the host cultural context specifically with reference to their environmental philosophies, practices, and identities as qualified practicing ECE teachers. A description of teachers' transitions in this chapter began with their interpretations of their host culture, presenting their perspectives on the Aotearoa New Zealand culture and identity. The teacher participants discussed their interpretation of the Aotearoa New Zealand culture and identity in terms of the general values and beliefs held by the people of Aotearoa New Zealand. This included personal independence and freedom, lifestyle, and socioeconomic factors. The teacher participants made clear connections between their perceptions of the Aotearoa New Zealand identity and the natural environment. They interpreted these connections in terms of a natural sense of place, connections to the natural environment of Aotearoa New Zealand, and the lifestyle followed by the people of Aotearoa New Zealand in general.

The teachers highlighted the differences they perceived in their home and host ECE contexts in this regard. The comparisons presented by the teacher participants highlighted the transitions their cultural and environmental identities were undergoing as ECE teachers in Aotearoa New Zealand. In terms of their perspectives on ECE as teachers in the host cultural context, Indian teacher participants explored the philosophy of child-centred or child-led learning as an important cornerstone and goal of ECE. They believed that the ECE philosophy and curriculum should be based on the freedom to learn through play where children direct the learning. It should be focussed on holistic development and learning that enables children to make informed choices and decisions. Children must have opportunities to develop social and life skills in the process.

The teacher participants' interpretations of the ECE context as teachers in Aotearoa New Zealand were detailed through their perspectives of their respective ECE settings where they were working at the time of data collection. These data were supplemented by observations of their ECE settings' environmental context, and an analysis of environmentally focussed Learning Stories created by them. The teachers were from a range of ECE settings including a kindergarten association, a farm-based centre, a not-for-profit centre, a Montessori centre, a faith-based centre, and privately owned centres. They provided insights into their respective early learning services' environmental philosophies and practices and their role within those. Overall, the participants' awareness of and experience with ECE Environmental Education programmes or components was determined largely by the nature of their ECE settings, their philosophies, and curricula.

Teacher participants' personal and professional experiences from their home culture, their setting contexts, and professional development opportunities appeared to have been instrumental in the process of cultural transition. The Indian teachers' perspectives on teacher cultural identity and transitions were presented through their views on the environment and ECE in the Aotearoa New Zealand context, cultural perspectives and influences on their ECE practice, and acculturation in the host context with reference to the environmental philosophies and practices in ECE.

The last section detailed teachers' perspectives on their environmental identities and the related transitions. The Indian teacher participants' interpretations focussed on the importance of the natural environment in early development and learning. They touched upon the apparent spheres of development where they believed interactions with the natural environment facilitated children's holistic development including the physical, cognitive, socio-emotional aspects. They also talked about how the natural environment provided children with more opportunities and freedom to explore and express their true selves. Connections with nature allowed for creativity and nurtured children's imagination while satisfying their innate sense of curiosity, joy and wonder for the natural world. However, real-life experiences with the natural environment were considered critical to this process.

The Learning Stories reflected teacher participants' cultural and environmental focus with reference to their assessment documentation. For some teachers, the Learning Stories

reflected strong connections to their cultural identities where cultural inclusion and exchange was an integral part of the documentation. For others, the natural environment appeared to be a significant feature of their Learning Stories from diverse perspectives. Most Learning Stories shared by the teachers did include children's interactions with and in the outdoor natural environment, in one form or another. These opportunities were relatively fewer in the case of a couple of the teachers who worked with the youngest group of children, but their stories were focussed on younger children's sensory exploration of the environment. Cultural learning experiences and connections appeared to be the focus of Learning Stories for some teachers. A couple of teachers primarily focussed on environmental connections and learning for the children. They initiated environmental learning experiences, made it a part of their intentional teaching process, and recorded the respective Learning Stories with references to *te ao Māori* (the Māori world) and the curriculum framework *Te Whāriki* (MoE, 2017).

The Indian teacher participants explored their environmental identities and the related transitions by considering their own sense of self in relation to the natural environment. The teachers' experiences in and with the natural environment seemed to reflect their transitions from the home to the host cultural context. The opportunities and nature of environmental experiences within the two cultural contexts were significant factors in this process. Limited opportunities to make environmental connections in the home cultural context were contrasted with increased opportunities in the host cultural context, in turn facilitating their environmental identities. These positive environmental identity transitions were then evident in their perceptions of the environment and the resulting impact on their environmental and sustainability teaching practices.

To summarise, through the findings presented in Chapter 4, I provided a cultural context for Indian teachers in Aotearoa New Zealand ECE. It included data on Indian teacher participants' home context in terms of their cultural identities, their home contexts, and their identities as Indian teachers. It also provided a glimpse into their cultural perspectives on the place of the natural environment in early learning. This led into their transition from their home to host cultural context as ECE teachers. Chapter 5 included data on the participants' cultural and environmental identity transitions as Indian ECE teachers in Aotearoa New Zealand. The findings provide an insight into migrant Indian teachers' culturally-oriented environmental identities, the related transitions from the home to host cultural context, and the impact of

these transitions on their cultural and environmental teaching philosophies and practices within the Aotearoa New Zealand context.

6. Discussion and Conclusion

6.1. Chapter Outline

The final chapter in the thesis begins with a brief restatement of my study and the emerging research questions. The findings of the study are then discussed in response to the research questions. The discussion begins with findings related to Indian early childhood teachers' understandings of their own culturally-oriented environmental identities as they practice in this country followed by their understandings of the role of environmental identity in the Aotearoa New Zealand ECE context. The teachers' perceptions of their environmental identity transitions and how these influence their practice in the local context is discussed next. Conclusions from the discussion of my findings are drawn and limitations of the study are outlined. I conclude the chapter and the thesis with implications of my research and the scope for further research in this area.

Environmental identity has been found to be a key component of Environmental and Sustainability Education for children and teachers alike. It is a recent consideration in early childhood Environmental and Sustainability Education. Specifically, the environmental identities of culturally-diverse teachers in the Aotearoa New Zealand ECE context are an uncharted territory. Yet, the literature reviewed illustrated that there is value in examining connections between Environmental and Sustainability Education in ECE, teachers' environmental identities, and the role of culture therein.

One growing group of culturally-diverse teachers in the Aotearoa New Zealand ECE context is Indian teachers. Migrant Indian teachers' cultural and environmental identities undergo continual transition between their Indian home cultural context and the Aotearoa New Zealand host cultural context. These teachers are expected to implement a bicultural curriculum in a multicultural ECE context, where their environmental ideas, beliefs, practices, and identities as teachers are likely to be influenced by their home and host cultural orientations.

My doctoral research explored the potential role of environmental identity for culturally-diverse Indian teachers in Aotearoa New Zealand ECE. As a cultural insider, I looked at Indian teachers' perceptions of their culturally-oriented and negotiated environmental identities where the environment may hold different meanings and place in their home and

adopted-country cultural systems. I studied this previously unexplored intersection of Environmental and Sustainability Education, environmental identities, and cultural orientations by seeking to answer the following specific questions:

1. What are migrant Indian teachers' perceptions of the role of environmental identity in the Aotearoa New Zealand ECE context?
2. What are migrant Indian teachers' perceptions of the influence of their own cultural identities on their environmental identities as they practise in Aotearoa New Zealand ECE?
3. How do migrant Indian teachers perceive their cultural and environmental identities influence their practice in the Aotearoa New Zealand ECE context?

An interpretivist methodology was used to develop a research design to answer these questions addressing Indian teachers' understandings and interpretations of their own cultural, environmental, and contextual experiences and realities in Aotearoa New Zealand ECE. Qualitative methods of data collection and analysis were employed. Data collection tools and processes included interviews with Indian teacher participants, interviews with their ECE setting managers/head teachers; observations of teacher participants' ECE settings; analysis of Learning Stories created by teacher participants; ECE curriculum referencing; and visual representations. The data were analysed using thematic analysis within and across the different sets of data.

The discussion maps the journeys of migrant Indian teachers from their past home sociocultural context to their present host sociocultural context in the form of responses to the three research questions. It begins with teachers' perceptions and interpretations of their cultural and environmental identity and their experiences beginning in their early childhood years while in India. A discussion of their early childhood experiences also enables a better understanding of where these migrant teachers, like me, are coming from. The discussion then moves onto the next phase of the journey as the teachers make the crossover from their home cultural context to the host cultural context. I discuss their perceptions and interpretations of the cultural and environmental identity transitions that they underwent in the process. The section concludes with a discussion of the teachers' ongoing journeys, that is, their culturally-oriented environmental identity within the host cultural context. This includes an interpretation of ways in which they negotiate between their two possibly co-existing cultural

and environmental identities and how this affects their teaching philosophy and practice in Aotearoa New Zealand ECE.

6.2. Responses to Research Questions

6.2.1. Teachers' Perceptions of their Culturally-Oriented Environmental Identities

The origins of the Indian early childhood teachers' environmental understandings and identities are determined by and within their home sociocultural context of India, which is the beginning of their journey of cultural crossings to becoming an ECE teacher in Aotearoa New Zealand. The findings indicated their perceptions of their cultural identities, the significance of their own early childhood environmental experiences in the Indian context, and the influence of the home cultural context on their environmental identities.

Teachers' Perceptions of Their Cultural Identities

The teachers' perceptions of their cultural identities, and their sociocultural context, both appeared to have influenced their environmental identities, and their environmental and sustainability related teaching philosophies and practices. An understanding of their cultural identities within their macrosystems (Bronfenbrenner, 1979) established a backdrop from which their environmental identities are likely to have originated.

For the Indian teacher participants, several aspects defined their Indian cultural identities. Broadly, cultural traditions, values, beliefs, and symbols were the noteworthy features that defined their cultural identities and worldviews. Yet, there were similarities and differences amongst the participants, an expected pattern given the sociocultural diversity that exists within the Indian subcultures. From my perspective, they perceived and described their Indian identity and that of Indians in general based on general Indian values, both traditional and modern. Some teachers believed that the broader collective Indian identity, including their own, was defined by but not limited to, explicit cultural tools (Smidt, 2009; Vygotsky, 1978) or surface culture such as language, dress, food and clothes (Frank, 2013; Hall, 1976). For instance, Simran shared that in addition to explicit cultural tools, the Indian identity also included abstract and implicit deep culture (Frank, 2013; Hall, 1976) values and ethics that were part of their macrosystem in the home sociocultural context (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). According to Simran, cultural values determined the

collective and individual Indian identities. Thus, from a sociocultural perspective, the teachers mediated their interactions within their home cultural context by way of the various explicit or surface cultural elements and implicit deep cultural values and beliefs (Frank, 2013; Hall, 1976).

Four of the nine teachers talked about respect for others and specifically for elders as an integral feature of the Indian identity. According to Meera, this notion of respect and reverence is not restricted to people but also extends to all life forms and inanimate objects in the environment. Meera believed that these were features that were common between the Indian culture and *te ao Māori* (the Māori world) and *tikanga Māori* (Māori ways of doing including practices, customs, and rituals), where people and other beings or things were believed to have a life force that was valued and respected in various ways (Alcock & Ritchie, 2018; MfE & Stats NZ, 2022; Duhn, 2012a). Meera's views also highlighted her environmental identity transitions through connections between the environmental beliefs and values of her home and host cultural contexts. These aspects of transitioning cultural and environmental identities were situated within the larger macrosystem (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) of the teachers' home cultural context.

The sustenance of cultural traditions such as languages, celebrations, festivals, and food were considered an important part of the Indian identity by most teachers. Meera specifically drew similarities between the significance of cultural traditions for Indians and for *tangata whenua* (Indigenous Māori people of the land) in the form of *tikanga Māori* (Māori ways of doing including practices, customs, and rituals), and *te ao Māori* or the Māori world (Alcock & Ritchie, 2018; Duhn, 2012a). In her view:

You're born into that culture, and you have that ethnicity, heritage, *taonga* [treasured or prized possession/social or culturally-valued resources], *tikanga* [Māori ways of doing including practices, customs, and rituals], whatever you have brought here with you from there.

From a sociocultural perspective, Meera seemed to mediate her cultural and environmental identity transition by making connections between her home cultural context and the host cultural context. She made use of cultural tools such as shared traditions, beliefs, and understandings of *te ao Māori* (the Māori world) and *tikanga Māori* (Māori ways of doing including practices, customs, and rituals), to interpret and describe her cultural and environmental identity transitions. Her experience of the new host culture and its meaning

appeared to be mediated by focusing on the similarities between the cultural contexts. Thus, it seems that migrant teachers like Meera are likely to employ cultural tools that they bring from their home cultural context while they learn about and employ new cultural tools within the host cultural context. These cultural tools facilitated the interactions or mediations between the teachers and their dual sociocultural contexts or macrosystems.

Most teachers stated that retaining their home cultural identities was especially significant for them as migrant teachers as they wanted to maintain their diasporic identities and preserve their way of life. In their own way, each of the teacher participants expressed the importance of maintaining their cultural identity and traditions even as they assimilated themselves into the host culture of Aotearoa New Zealand. These findings are consistent with Rana's (2020) study on Indian student teachers' perceptions of their identities and enculturation process within Aotearoa New Zealand ECE. The participants were keen to conform to the host culture, but also wanted to hold onto their home culture and philosophies (Rana, 2020).

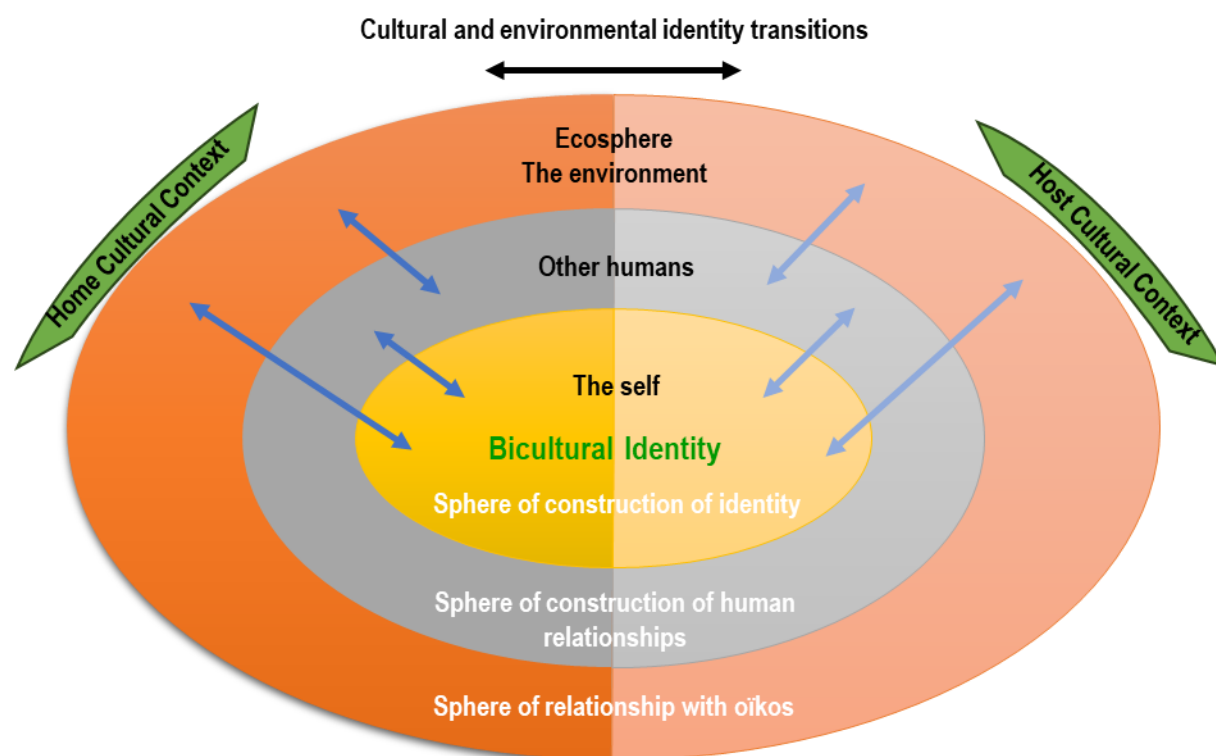
Interestingly, for the teacher participants in this study, it was not only about maintaining their home cultural identities but also about sharing them with others. Rosie described the process of sharing her cultural identity and practices stating, "I usually celebrate some of the festivals here with the children, to share information about where I come from, and they accept it." Rana (2020) also found that the Indian student teacher participants in her study were keen to share their culture with others and celebrate diversity within their ECE contexts. This inclination to share their cultural identities with the children and others within the ECE context is one way that migrant teachers might develop a shared sense of belonging in their host cultural context. A sense of belonging is also highlighted in *Te Whāriki* (MoE, 2017) where connections between people, places, and things are encouraged.

Additionally, familial relationships and interdependence were considered central to the traditional and modern Indian identity. Three teachers highlighted the values of intergenerational relationships, familial obligations, and commitments. These features formed the teachers' microsystem (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) where the family was viewed as a significant determinant of their cultural identities. A few of the teachers considered socioeconomic and lifestyle aspirations, and their Indian subcultural religious identities, to be important features of their broader national cultural identities.

Whilst this is a small study with only 9 teacher participants, these findings are indicative of the transitions that Indian migrant teachers undergo as part of their cultural crossovers from one sociocultural context to another, especially in terms of acculturating into the new ecological system (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). For example, Meera's process of cultural crossing might mean a smooth and positive cultural identity transition where she had been able to, and was continuing to, learn about and make connections between her home and host cultural context. This smooth transition might also indicate the successful co-existence of both the home and host ecological systems (Bronfenbrenner, 1979) that were likely to have influenced the cultural and environmental identity transitions for some teachers. Teacher participants' successful cultural crossover and adaptation appears to have facilitated the construction of bicultural identities through an integration of their Indian and Aotearoa New Zealand cultural identities. This finding is akin to what Kaur (2017) found in their study of migrant Indian teachers in Aotearoa New Zealand ECE.

Sauvé's model of environmental identity and education (discussed in detail in Section 2.6.4.) depicts the three interrelated spheres of personal and social development. The psychosphere is the sphere of construction of identity, the sociosphere is the sphere of construction of human relationships, while the ecosphere is the sphere of relations with our environment or *oïkos*. With reference to Sauvé's (2009) spheres of development, this finding is indicative of a positive transition between dual co-existing sociospheres (home and host sociocultural contexts) for some participants. This transition appears to strengthen their psychospheres or the two co-existing home and host spheres of cultural and environmental identity development as depicted in Figure 6.1.

Figure 6.1 *Cultural and Environmental Identity Transitions Between the Home and Host Cultural Contexts*



Note. Three interrelated spheres of personal and social development. Adapted from “Being here together”, by L. Sauvé, in M. McKenzie, P. Hart, H. Bai, & B. Jickling (Eds.), *Fields of green: Restorying culture, environment, and education* (p. 330), 2009, Hampton Press Inc. Copyright 2009 by Hampton Press Inc.

Teachers’ Early Childhood Environmental Experiences in their Home Contexts

Within the teacher participants’ home contexts, in terms of the external and built environment, factors such as geographical location, living space or arrangement, and availability of natural spaces and resources affected the teachers’ environmental orientations and experiences. For teachers who were fortunate to have early environmental experiences, these were voiced in the interview data in the form of powerful and vivid childhood memories of being in natural environments. Six of the nine teachers considered their home context as a significant catalyst for their interest and inclination towards the natural environment. Ila, Aisha, Chery, and Meera talked about how they made the best possible and creative use of the natural environment and spaces within and around the gates of their homes regardless of whether they were urban or rural, small or large. Meera’s experience highlights the ways in which her

home or place held special meaning for her. Her home and its surroundings defined her environmental experiences and shaped her sense of place or how she viewed herself in relation to the place. Thus, she made clear connections between her place-based identity, cultural context, and environmental experiences. Greenwood (2012) also discussed how environments are understood and experienced culturally. Aisha shared her significant memories and experiences where being in natural spaces would compel her to think about “What is outside, you go and find kids in the street and you go play hide and seek, or you use your imagination, okay what are we gonna play today, how’re we gonna do it?” Childhood memories played a meaningful role in teachers’ environmental interactions and connections in childhood. Similarly, Giusti et al. (2018) and Hecht et al. (2019) also found that adults were able to recall significant memories related to time spent in nature that influenced their environmental identities as children and as adults.

The home experiences for Rosie and Riya were quite different from the other teachers. They recalled their childhoods in industrial cities that were becoming increasingly crowded. According to them, living in relatively modest houses and the lack of natural experiences sparked their interest and motivation to develop closer connections with the natural environment as adults. In Rosie’s words, “I missed all of these things in my home in India, because we lived in an industrial area. We didn’t have many trees and plants. Since it was missing for me, I like to have that around now.” The opportunity to now engage in increased and more accessible environmental experiences had awakened Rosie to the possibilities that she had missed in her home context. Thus, the home context as part of the microsystem (Bronfenbrenner, 1979) was seen to be an influential factor, irrespective of whether it afforded natural spaces and experiences or restrictive and challenging experiences. These teachers’ experiences might also indicate the importance of considering factors that are present in one’s microsystem or other ecological systems as well as the significance of factors that are not present. The diverse nature or complete absence of significant environmental experiences might also be influential in shaping one’s cultural and environmental identities. These two teachers’ experiences also highlight the diverse ways in which the sociosphere mediates one’s environmental identity development at the intersection of the psychosphere and the ecosphere (Sauvé, 2009). One’s experiences within a particular socioeconomic and cultural context are likely to determine the trajectory of one’s sense of self in relation to the environment or place of being. Early childhood experiences such as time spent outdoors, exposure to natural settings, exploratory play, and support from significant adults, appeared to

be influential factors in developing environmental inclinations and commitments among the teacher participants, as was also evident in related studies (Dewey, 2021; Hecht et al., 2019).

Interestingly, all teacher participants mentioned family members as they recounted their experiences and memories that shaped their environmental beliefs and attitudes. For six of the nine teachers, childhood memories included spending time in natural spaces with their siblings, parents, grandparents and friends. Alternatively for Simran, Riya, and Aisha it was the family members who were sometimes the source of restrictions and challenges in their environmental experiences. They shared their experiences of losing out on natural experiences often due to cultural and educational contexts where personal presentation was prioritised, and hence resulted in muddy or messy play in the outdoor environment being ruled out for them. For example, in Simran's experience, she would "...just get dressed, go to the park, and come home. And since we were dressed in our finer clothes, we were not to dirty them...". Aisha shared another perspective where the uniform was a prized possession that needed care with instructions along the lines of "You've only got 2 pairs of uniform, and you get it dirty!" Thus, irrespective of the nature of the memories and experiences, for all teacher participants, significant others and experiences appeared to have played an important role in determining their environmental inclination and connections. Parents, siblings, family members and friends, all part of the microsystem (Bronfenbrenner, 1979) and the sociosphere (Sauvé, 2009), were integral to the participants' childhood experiences in, about, for and with the natural environment. These findings reflect similarities with significant life experience studies (see for example, Bixler et al., 2011; Chawla, 2007; D'Amore & Chawla, 2020; Eames et al., 2018; James et al., 2010; Scopelliti et al., 2022) where family members and familial experiences were cited as significant influences in the development of lifelong positive environmental attitudes, behaviours, and commitments.

Although all of the teacher participants recalled having a strong desire to explore and be in the natural environment in their childhood, for eight of the nine teacher participants, these interactions were reportedly not initiated by parents, family members or significant adults, but by the participants themselves. For instance, Ila recalled:

I remember spending a lot of time with other children, playing like dramatic play and creating stories out of that. But not initiated by my parents like 'Let's take you to...' which is now a normal trend here. It was just us being creative.

Despite challenges and limited or no encouragement from significant adults, the participants shared strong memories of their desire to spend time in and explore natural spaces. This childhood innate curiosity and affiliation toward the natural environment shared by the teacher participants has been extensively discussed by Pelo (2009, 2014b) and Wilson (2012, 2018) in their frameworks for children's environmental identity development. These authors propose that children have a natural inclination towards the environment that must be facilitated and encouraged by significant adults in their lives. In these teacher participants' experiences, despite limited opportunities and few influential adult role models, they displayed an innate inclination and curiosity to make connections with the natural environment as children and now as adults. This finding is akin to those from studies where parents' nature connectedness was not found to be associated with young children's nature connectedness in Finland (Savolainen, 2021) and China (Wu et al., 2023). These findings also present an alternative perspective on the significant life experience (SLE) framework where studies have found that the presence of significant adults who facilitate environmental experiences is critical to one's environmental attitudes and behaviours (Bixler et al., 2011; Chawla, 2007; D'Amore & Chawla, 2020; Eames et al., 2018; James et al., 2010; Scopelliti et al., 2022).

Therefore, within the home context, teachers shared vivid and powerful childhood memories that showed how the natural environment and spaces were a part of their home context, even if in small ways. Significant childhood memories and self-initiated experiences appeared to be important influences in their naturally occurring quest for interaction with the natural environment. These experiences apparently made the teacher participants inclined to continue their environmental connections further, something that was now part of their adult, professional and environmental identities.

Teachers' Early Childhood Environmental Experiences within their ECE Contexts

Environment and sustainability did not feature prominently in the teacher participants reports of their ECE experiences. Six of the nine teachers shared that their educational experiences were typically academically-oriented with a focus on routines within the indoor environment. As Chery described:

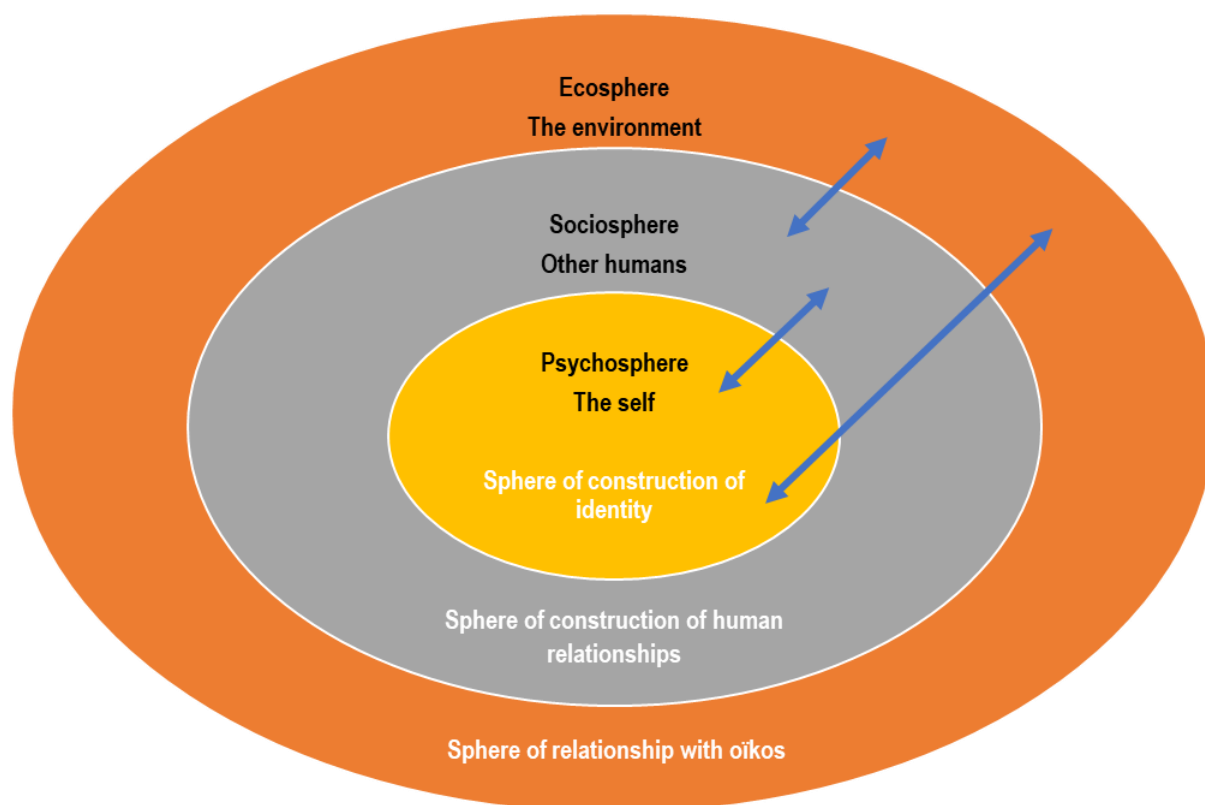
It was definitely an indoor classroom. There was a playground outside but I'm not sure how much importance was given to the outside. But definitely, it was a lot of books and reading and you get into a lot of art and reading, and numbers.

The teacher participants believed such contexts offered limited opportunities for environmental experiences in their early years. Meera recalled a big playground in her school, but described the lack of time spent there, "Yes, but where did we get the chance to go to these (natural) spaces? We spent about 8 hours in the school inside the classrooms". These narratives indicate early childhood educational experiences that did not include or encourage interactions in, about, for or with the natural environment. Ernst (2014) made a similar observation in her study with early childhood educators in the United States where the participants found it difficult to incorporate environmental experiences in ECE due to the focus on academic preparation.

From another perspective, Riya raised important questions about the diverse nature of ECE settings and schools in her home country and the resulting range of educational experiences. She indicated, "It depends upon your affordability, right? Probably if you pay more money, the school will be really big, the kindergarten will be big. You might get a chance to go out and enjoy the natural things." Thus, the socioeconomic status of a family appeared to be an important predictor of whether the teachers had access to environmental spaces and experiences in their early childhood and school education.

These findings highlight clear and important connections between the participants' sociospheres and ecospheres that directly impacted their psychospheres (Sauvé, 2009), as also discussed by Milfont and Schultz (2016) and Sarigöllü (2009) among others. Specific contextual features of the teacher participants' home cultural context or sociosphere, such as socioeconomic status and the nature of the ECE or school system determined their interaction with the ecosphere, comprising of the natural environment or *oïkos* (shared ecological spaces of being). The nature of these interactions had a significant impact on the teachers' psychosphere or environmental identities, demonstrating the distinct connections between the three spheres of personal and social development (Sauvé, 2009) with reference to Environmental and Sustainability Education (see Figure 6.2).

Figure 6.2 *Distinct Connections Between Participants' Three Spheres of Personal and Social Development with Reference to Environmental and Sustainability Education*



Note. Three interrelated spheres of personal and social development. Adapted from “Being here together”, by L. Sauvé, in M. McKenzie, P. Hart, H. Bai, & B. Jickling (Eds.), *Fields of green: Restorying culture, environment, and education* (p. 330), 2009, Hampton Press Inc. Copyright 2009 by Hampton Press Inc.

Broader Cultural Influences on Teachers' Early Childhood Environmental Experiences

Along with their specific home and educational context, Indian teacher participants' environmental perspectives and identities were rooted in their broader home cultural context, beliefs, and practices. The teacher participants' sociospheres (Sauvé, 2009) become the sites for their environmental identity development where their foremost culturally-oriented environmental experiences influence their environmental understandings and ideas at later stages.

Four of the nine teachers talked about various aspects within their home cultural orientations and experiences that they believed influenced their beliefs about children's interactions in,

about, for and with the natural environment. Riya and Meera mentioned the weather as influential in determining outdoor environmental experiences in their home cultural context. Meera highlighted the difference in cultural perspective that was evident when she had to get accustomed to all weather play and the idea of “it’s only bad clothing, not bad weather” in the Aotearoa New Zealand ECE context. On the other hand, Riya and Aisha shared how gender-related concerns affected their outdoor play and exploration as young girls. According to them, safety concerns often limited their uninhibited outdoor explorations and environmental experiences to an extent and in turn might have impacted their environmental identity development. Thus, the teacher participants’ experiences provided evidence that their environmental identities were likely influenced by contextual factors such as their gender, cultural orientation, sociocultural norms, place of being, social and educational experiences. These factors have also been discussed in literature (see for example, Milfont & Schultz, 2016; Sarigöllü, 2009) where cross cultural data indicated differences in environmental attitudes, concerns, and behaviour.

6.2.2. Teachers’ Perceptions of the Role of Environmental Identity and Environmental and Sustainability Education in Aotearoa New Zealand ECE

The teacher participants’ environmental identity journeys followed similar trajectories through their migration to the Aotearoa New Zealand context. This next phase was a transition process where they learnt about their new host cultural context. They underwent a cultural crossover as they began what could be seen as the long-term gradual acculturation process while simultaneously working to maintain their home culture. However, their Aotearoa New Zealand ECE qualifications, experience and sociocultural interactions helped them interpret and understand the cultural context and the place of the natural environment in Aotearoa New Zealand, which was reportedly different from their home sociocultural context in several ways.

Teachers’ Perceptions of the Aotearoa New Zealand Cultural and Environmental Identity.

Ila, Meera, and Aisha shared their perceptions of their new host cultural context in terms of cultural values and personality traits such as independence (financial, familial) and personal freedom. According to Meera, the value of independence in this country was in contrast to her home cultural value of interdependence. She held the opinion that as a result of these values,

children in Aotearoa New Zealand might be encouraged to become independent “very early on”. For Ila, Simran, and Rosie, a considerable element of the Aotearoa New Zealand identity was people’s outlook on financial or socioeconomic status and monetary matters. They correlated the value of personal freedom and self-dependence with an independent and individually-determined financial and economic arrangement among a household or family. This independent economic arrangement allowed for personal and creative pursuits where, as Simran stated, adults had to “live their own lives and children make their own lives” unlike Indian parents who had to “save money for our children”.

Some participants believed that the natural environment was a significant element within national culture and identity in Aotearoa New Zealand, as evident through the people’s interest in, and interaction with, the outdoors and the environment. For instance, Simran’s reasoning stemmed from her view that the country’s rich natural landscape provided “so many places to explore, visit, open spaces, natural environments”, a major attraction for people to move to Aotearoa New Zealand. Aisha believed that people in this country had an innate and natural connection to physical spaces such as the water and the mountains, giving them a sense of place and being in the island nation.

Thus, according to these views shared by the teacher participants, people living in Aotearoa New Zealand generally experienced connectedness with the natural environment and had a strong sense of place which was closely linked to their identity. Their sense of place was shaped by their identity and relationship with the natural world (Adams et al., 2017), while reciprocally their sense of place shaped their identities and relationships with the environment (Greenwood, 2012). Similar links between elements of an Aotearoa New Zealand identity and the natural environment have been discussed by Alcock and Ritchie (2018), where they focussed on early childhood outdoor education and a strong connectedness to place in te ao Māori or the Māori world. Additionally, as mentioned by the teacher participants in this context, these connections and identities appear to be established at an early stage for children (Pelo, 2009, 2014b).

The teachers’ descriptions and perceptions of the value of personal freedom and independence and connections to the natural environment for people from Aotearoa New Zealand could also be considered typical generalisations based on their personal experiences. While these are impressions, they might have developed because of their time spent in the country, these

cultural values may not accurately reflect the various cultural and ethnic groups within Aotearoa New Zealand. For instance, the values of independence and personal freedom could be more prevalent amongst the Pākehā cultural group identified as individualistic, whereas familial interdependence might be more highly valued among Māori, Pacific, and other migrant cultural groups that have been found to be more collectivist in structure (see for example, Ando et al., 2007; Rameka et al., 2022; Sarigöllü, 2009).

Teachers' Professional Reorientation and Cultural Identity Transitions

The teacher participants believed that understanding and implementing *Te Whāriki* (MoE, 2017) within the Aotearoa New Zealand ECE context required professional reorientation and cultural identity transitions on their behalf which were still ongoing in some ways. Their professional perspectives on ECE were significant to these cultural and environmental identity transitions as teachers in Aotearoa New Zealand ECE and acted as bridges that connected their two cultural contexts. Their perspectives were based on their professional experience and/or personal experiences of their own young children who had been a part of ECE programmes in India and/or Aotearoa New Zealand. Thus, teachers' professional and personal histories and cultural orientations evidently influenced their teaching beliefs and philosophies. These findings on cultural influences were also evident in literature including studies with migrant teachers in Canada (Massing, 2015), Australia (Yip et al., 2019; Yip et al., 2022) and Indian teachers in Aotearoa New Zealand (Kaur, 2017; Rana, 2020).

Teacher participants shared their perspectives in the form of comparisons between their experiences within the home cultural context and the new host cultural context. As a result, they believed they had to professionally reorient themselves to these contrasting ECE philosophies and practices. The teachers cited home and host cultural ECE contradictions in terms of the freedom of choice and increased decision-making opportunities for children, and the prioritisation of academic skills in Indian ECE contexts in contrast to the importance given to life skills (risk-taking, confidence building), social competence, and holistic development (related to relationships, trust, respect, identity) in Aotearoa New Zealand ECE contexts. In contrast to ECE in their host cultural context, Aisha referred to the ECE context in her home culture as “structured” while Sheila believed children were expected to “follow instructions” for most part. Riya's narrative reflected the effect of her professional orientation within the host cultural context where she stated that, “Social skills are very very important

than the academic skills. If they've got the social skills, the academic skills will definitely follow.”

Play-based pedagogy and a child-centred curriculum were novel and vital aspects in their knowledge and experience of ECE in Aotearoa New Zealand. For instance, Meera's professional orientation was characterised by accepting and working around such contrasts between her home and host cultural context and ECE when she stated that, “our culture is strict and so are our early childhood centres” while in Aotearoa New Zealand the child-centred curriculum “allows children to grow at their pace, not yours”. On the other hand, Sheila was in favour of a more balanced curriculum that adopted the complementary features of both a child-led and a teacher-led curriculum. Her view could be an indication of her effort to balance her home cultural beliefs and host cultural beliefs of ECE.

As the teacher participants transitioned from the home ecological system to a parallel host ecological system, the influence of each on their teaching philosophies and practices seemed to vary between individuals, and at various times, and would likely have impacted their environmental identity development and transitions. Within the Aotearoa ECE context, they seemed to have acculturated themselves to the broader cultural and immediate ECE context through their orientation to and interpretations of *Te Whāriki* (MoE, 2017) and teaching practice and experiences. These elements within the sociosphere enabled their awareness of the new reference culture of Aotearoa New Zealand. It appeared to be a process of understanding and accepting differences as the teacher participants strove for a balance between their original cultural ideas and the new host cultural systems (Sauvé, 2009).

Teachers' Perspectives on the Significance of Environment and Environmental and Sustainability Education in ECE

All of the teacher participants agreed upon the importance of Environmental and Sustainability Education in early childhood development and education. They articulated several apparent developmental benefits of education in, about, for and with the natural environment. These views were often supported by evidence from their managers/head teachers, who discussed their personal and the ECE setting's environment and sustainability philosophies and teaching practices. Aisha, Sheila, Riya, and Meera highlighted ways in which children's interactions with the natural environment facilitated their holistic

development, as also discussed extensively by Pelo (2014b) and Wilson (2011) who highlight the environmental self as being integral to the whole child.

Other specific benefits discussed by the participants align with the head/cognitive, hands/psychomotor, and heart/affective approach discussed by Tilbury (1995) and Sipos et al. (2008). With reference to the head/cognitive approach, five teacher participants focused on the benefits of environmental interactions on children's cognitive development and increased knowledge about natural elements and phenomena, as also highlighted in literature (see for example, Campbell & Speldewinde, 2019; Cutter-Mackenzie & Edwards, 2013; Wilson, 2018). The teacher participants highlighted the significance of sensory experiences, bush walks, and park visits. Prachi and Riya agreed with their ECE setting's all-weather policy as they believed children's understanding and experience of the cold, heat, and rain for themselves increased their awareness about nature and of their own strengths, tolerance, and endurance. Rosie talked about cognitive elements and knowledge in her interview stating, "Everyone needs to know the food comes from the earth, how does it come? Similar findings were reported in studies with Swedish (Ärlemalm-Hagsér & Sandberg, 2011) and North American (Torquati et al., 2013) ECE teachers regarding their views on Environmental Education and nature-based play. Experiencing cyclic weather changes, understanding life cycles, and learning about nature-human connectedness were viewed as important for children's development and learning.

Under the hands/psychomotor domain, the link between natural experiences, learning dispositions and life skill development was highlighted by seven teachers in this study, a link which was also evident in studies on teachers' views of being outdoors such as in Iceland (Norðdahl & Jóhannesson, 2016) and Sweden (Ärlemalm-Hagsér & Sandberg, 2011). The Indian teacher participants in the current study discussed ways in which experiences in the natural environment encouraged children to take risks and become confident, independent, responsible, and resilient as also highlighted in the early learning curriculum (MoE, 2017). For instance, Simran believed that through being in the natural environment children "gain confidence, learn about their strengths, what risks I can take...they develop confidence in themselves." This view was echoed by Simran's ECE setting director as her personal and organisational philosophy. Thus, the sociosphere or microsystem appear to have played a significant role in Simran's environmental identity development and transitions. She had received support to develop an awareness of the environmental culture within her ECE setting

which had influenced her Environmental and Sustainability Education ideas and philosophies (Sauvé, 2009).

Three teachers discussed how outdoor natural experiences provided children with the freedom to explore and express themselves, with fewer restrictions as compared to the indoor environment. For instance, Riya shared her views on the ways in which physical outdoor play encouraged risky play and helped children overcome physical challenges. The head teacher echoed this setting philosophy where children were encouraged to take on physical challenges to build resilience. Chery, Sheila, Riya, Prachi, Aisha, and Simran highlighted the significance of real life and direct experiences with, and in, nature for children. Similar observations have been made in several studies demonstrating young children's understanding of the natural world developing through direct engagement with it (see for example, Campbell & Speldewinde, 2019; McClain & Vandermaas-Peeler, 2016; Miller et al., 2022a).

Within the heart/affective domain, Environmental and Sustainability Education was seen to benefit socio-emotional and spiritual development, as described by six teacher participants. The teacher participants perceived these benefits in the form of emotional attachments to nature, socioemotional regulation, and increased creativity and innovation. These findings are akin to studies that linked natural experiences to the affective domain of development (see for example, Bang et al., 2018; McClintic & Petty, 2015; Miller et al., 2022a; Tillmann et al., 2018).

Some of the teacher participants discussed the importance of natural experiences for the development of connections with nature (Ritchie, 2010b; Ritchie, 2013b; Robinson, 2019). According to Riya:

Nature and children, they are very much related to each other...how we look after the environment, how clean it should be, and what is our role as a human in the world to look after nature, how we look after the animals.

Riya's head teacher shared a similar sentiment that interaction with the natural environment "gives children a good grounding for life and it teaches them respect for nature." Riya's perspective depicted the influence of interactions between her psychosphere and ecosphere on her environmental identity. It clearly indicated an environmental identity that reflected a sense of self in relationship to the *oïkos* or biophysical environment. In this case, the environmental

identity was not dependent upon the sociosphere, and the focus was the self and the natural environment.

A further aspect of affective development discussed by some participants was the ways in which natural experiences encouraged children's inherent sense of joy and wonder, as also proposed by Vincent-Snow (2017) and found in Miller et al.'s (2022a) study with primary school teachers in Australia. They believed that visits to nearby natural spaces helped children develop connections to the place (Adams et al., 2017). For instance, Riya viewed this connection developing in the form of children learning about the different native birds they saw during their regular bush visits, taking on the role of caretakers of the neighbouring park, and ensuring the rubbish is picked up. Meera saw these connections to place developing during park visits where children learnt about the route, climbing the same trees each time, and bringing lemons back to cook with. From the teacher participants' perspective, the natural environment provided children with the freedom to explore and experience the natural world around them through a sense and awareness of place (Adams et al., 2017; Penetito, 2009; Sauvé, 2009). Similar views were expressed by (Ritchie, 2017) highlighting how children's interactions with the natural environment facilitated life skills development; nurtured creativity and imagination; and encouraged their innate sense of curiosity, joy, wonder, and spirituality.

Interestingly, besides these benefits of Environmental and Sustainability Education under the three domains of head, hand and heart, some teachers viewed the impact of Environmental and Sustainability Education in terms of their specific ECE work context or setting, reiterating the diverse nature of early learning services and the inherent opportunities and/or challenges. For instance, Simran and Sheila focussed on life skills development and healthy social development for children as a major impact of nature trips in ECE. Their experiences with nature-based programmes might have facilitated their positive environmental identities and diverse perspectives on the role of Environmental and Sustainability Education in ECE. For Simran, her interest in environment and sustainability and motivation for it appeared to be the result of her participation in the setting's nature-based programme, the director's personal and professional environmental philosophy, and professional development opportunities available to her.

On the other hand, Meera, a teacher from a chain of ECE settings mentioned how the outdoor environment was extremely beneficial when the children required more space and freedom as opposed to the restrictive indoor environment. The outdoor environment helped counter the limited indoor space for a large number of children especially for the purpose of using their surplus energy (Schiller, 1875 as cited in Dockett & Fler, 2008), something they could not achieve in a restricted indoor environment. In this case, children's access to and time spent in the outdoor environment was a positive counter to other contextual factors.

For some teacher participants, the connections appeared to be focussed on aspects of environmental and sustainability practice that they perceived as essential or most in need of attention for their setting. Meera highlighted the requirement of better staff ratios for effective and consistent environmental and sustainability practices. These perceived links imply that the process of making connections between the ECE curriculum and environmental and sustainability philosophies and practices might be dependent upon the teachers' experiences in their setting. This context-specificity of teachers' environmental and sustainability experiences has also been discussed in studies by Kelly et al. (2013) and Ritchie (2013b; 2010) where nature-based learning and environmental sustainability were found to be specific to each ECE setting.

Teachers' Interpretations of Environment and Sustainability in *Te Whāriki*

One noteworthy feature of the participant teachers' cultural and environmental transitions from their home cultural context to that of Aotearoa New Zealand was their comprehension, interpretation, and reported implementation of the early learning curriculum *Te Whāriki* (MoE, 2017) and its inclusion of Environmental and Sustainability Education ideas. According to their responses, these perceptions become especially important for migrant teachers who might have had no prior involvement in ECE within their home cultural context and hence this was their first experience with an ECE curriculum. The teachers interpreted the curriculum framework as having obvious and underlying environmental and sustainability features interwoven into the curriculum Principles and Strands (MoE, 2017). According to Meera, "you can link the environment to everything in *Te Whāriki*. It's like a mat, everything woven together, this is the same, the environment is woven into all aspects of the document."

Three of the nine teachers referred to the Principle of Holistic Development | Kotahitanga, to discuss their interpretation of the natural environment as reflected in the curriculum.

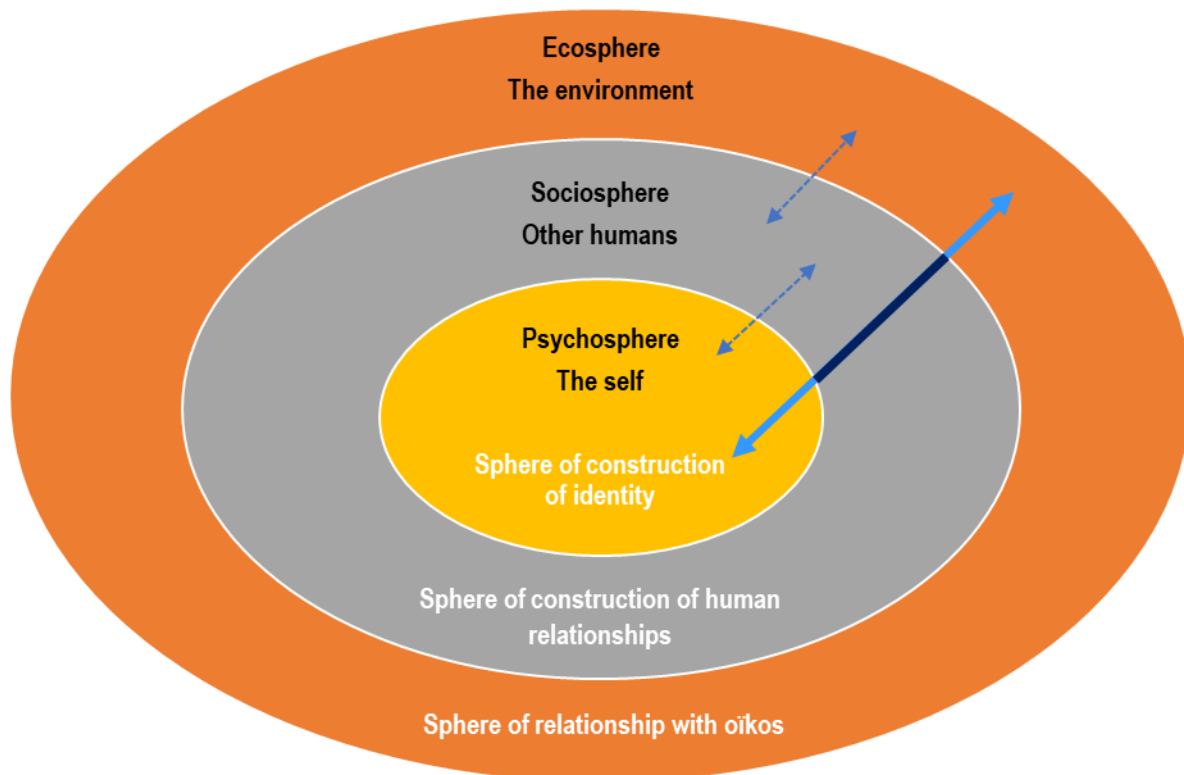
According to Sheila, “part of it is getting the child to get an all-round holistic development, which you can’t have with only being in a classroom.” Aisha interpreted the environmental components of *Te Whāriki* (MoE, 2017) with reference to the Principle of Relationships | Ngā hononga. For instance, when she discussed the notion of children making relationships with “people, places and things” (MoE, 2017, p. 21). Seven of the nine teachers discussed the natural environment as part of the Exploration | Mana aotūroa Strand. For example, from Sheila’s perspective, the strand was about encouraging children to explore the natural environment as that is the place where they learn to “make sense of the world around them”.

The teacher participants appeared to use their Indian cultural and environmental identities and philosophies to make connections between the Māori culture and various elements within the ECE context. They referred to te ao Māori notions of tīpuna/tupuna (ancestors) and connections to whenua (land). Indian philosophies and traditions reflect similar connections to the past and ancestors, as well as the sacredness of, and connections to, land (Awasthi, 2021; James, 2014; Singh, 2012). The teachers made references to how the strand included children’s understandings and relationships with Papatūānuku (the Earth Mother) and Ranginui (the Sky Father). For instance, Aisha talked about children bringing in “energy from their past”, Chery referred to how “the child is connected to land and the respect they offer to the natural environment”. Four teachers made specific links between *Te Whāriki* (MoE, 2017), Environmental and Sustainability Education and te ao Māori (the Māori world) in relation to the curriculum Principles, Strands, and Learning outcomes. This interpretation is consistent with the findings of a study by Ritchie et al. (2010) where ECE teachers identified links between *Te Whāriki* and environmental sustainability practices through the Learning outcomes in the curriculum framework.

The nature of these connections between the curriculum, environment, and sustainability appeared to be influenced by the individual teachers’ environmental identity, and their respective ECE contexts. For example, Prachi, Riya, Chery, and Sheila had made clear and holistic connections between the curriculum and Environmental and Sustainability Education as their ECE settings supported some nature-based curriculum features and experiences which was evident through interviews with the teachers, their managers/head teachers and setting observations. For these migrant teachers, establishing connections between the curriculum and Environmental and Sustainability Education were prompted by a positive interaction between their psychosphere or environmental identity and the ecosphere or the environment,

also termed *oïkos* or shared ecological spaces of being (Berryman & Sauvé, 2016; Payne, 2009; Sauvé, 2009, 2017) as facilitated by the strong influence of the sociosphere or ECE context (see Figure 6.3). These findings highlight the ways in which the teacher participants' environmental identities were often shaped by the environmental identity orientation of the early learning service (Almeida et al., 2018).

Figure 6.3 *Distinct Positive Connections Between Teacher Participants' Psychosphere and Ecosphere Facilitated by Favourable Sociospheric Elements*

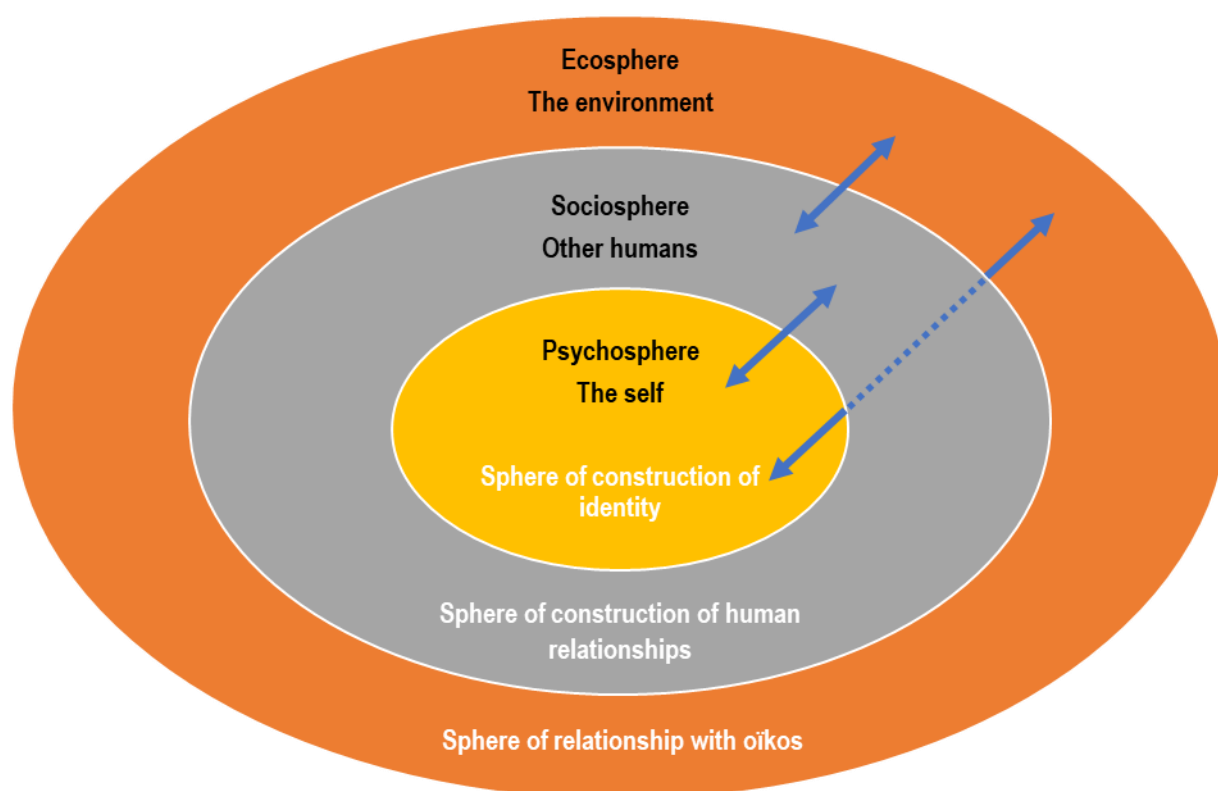


Note. Thickness and Darker Shade of the Arrow Indicates a Strong Influence of the Sociosphere. The broken arrow indicates weak sociospheric support. Three interrelated spheres of personal and social development. Adapted from “Being here together”, by L. Sauvé, in M. McKenzie, P. Hart, H. Bai, & B. Jickling (Eds.), *Fields of green: Restorying culture, environment, and education* (p. 330), 2009, Hampton Press Inc. Copyright 2009 by Hampton Press Inc.

However, other teachers such as Aisha and Meera could make connections between the curriculum and Environmental and Sustainability Education because of their positive

environmental identities, despite not having an environmental programme or component within their setting. In these cases, the sociosphere was not viewed as favourable for making these connections between *Te Whāriki* and Environmental and Sustainability Education, hence the teachers' psychosphere or environmental identity transitions appeared to be dependent upon their personal connections with the ecosphere (see Figure 6.4).

Figure 6.4 *Distinct Positive Connections Between Teacher Participants' Psychosphere and Ecosphere with Weak Sociospheric support*



Note. The broken arrow indicates weak sociospheric support. Three interrelated spheres of personal and social development. Adapted from “Being here together”, by L. Sauvé, in M. McKenzie, P. Hart, H. Bai, & B. Jickling (Eds.), *Fields of green: Restorying culture, environment, and education* (p. 330), 2009, Hampton Press Inc. Copyright 2009 by Hampton Press Inc.

6.2.3. Teachers' Perceptions of their Environmental Identity Transitions and Influences on Teaching Practices in Aotearoa New Zealand ECE

This section begins with a discussion of Indian teacher participants' interpretations of their environmental identities, followed by their environmental and cultural identity transitions as teachers in the Aotearoa New Zealand ECE context, and the influences of these transitions on their early childhood Environmental and Sustainability Education philosophies and practices.

Teachers' Perceptions of their Environmental Identities.

Teachers' perceptions and understandings of nature are likely to be connected to their interest in and inclusion towards Environmental and Sustainability Education (Torquati et al., 2013). Thus, their understandings and descriptions of nature enabled a better interpretation of their environmental identities and environmental and sustainability philosophies. The teachers defined their environmental identities and experiences in terms of personality, values, and actions in relation to the environment (Blatt, 2014). They shared diverse interpretations of their understandings of the natural environment and their personal connections with the natural world. The participants interpreted the natural environment as the "elements of nature", naturally occurring physical and geographic features of the planet as opposed to the manufactured or manmade ones (Torquati et al., 2013). Prachi reminisced about her childhood experiences and expressed her concern at the changing context and depletion of the natural environment in her rapidly changing home context. Significant life events and experiences appear to have been influential in Prachi's environmental identity development and transitions, similar to studies that explored connections between childhood experiences and sustained environmental interests and commitments (Bixler et al., 2011; D'Amore & Chawla, 2020; James et al., 2010; Scopelliti et al., 2022).

Some teacher participants perceived their environmental identities as connections between themselves and the natural world. These connections possibly reflect teachers' rootedness in the ancient Indian spiritual philosophies of human-environment interconnectedness (Almeida, 2015; Jain, 2010; Singh, 2012). These descriptions could also be considered an indication of their positive environmental identities since they saw themselves as part of the natural environment, rather than as detached entities where humans and the environment are not viewed as linked (Blatt, 2013). These views and environmental identity orientations could be rooted in their home cultural systems and influenced by their host cultural systems as well

(Blatt, 2013; Bronfenbrenner, 1979; Sauv , 2009). This finding also highlights the spiritual connections that Indian teachers made between the two cultural contexts where wairuatanga or spiritual connectedness with the natural environment is a significant feature of kaitiakitanga (Ritchie et al., 2017). As also reflected in Indian and Hindu philosophies, te ao m rama (the physical world), te taiao (the natural world) and te ao wairua (the spiritual realm) in te ao M ori are interconnected. For instance, Chery provided a philosophical perspective highlighting her admiration for the perpetuity of the natural world, yet she was cautious of humankind’s role in nature’s sustenance stating, “Nature is very giving, it’s continuous, it’s permanent. No, I won’t say permanent, it just depends on humankind to look after it to make it permanent.” Rosie talked about the interdependence and interconnectedness of humans and the environment, while Riya highlighted connections and relationships between children and nature. These descriptions are also akin to Sauv ’s (1996, 2002) paradigmatic conceptions of the environment as the teacher participants identified with the environment in several ways including: environment as nature to be appreciated, respected, preserved; environment as a resource to be sustainably managed, environment as a problem to be solved; and environment as a place to live.

Teacher participants’ environmental literacy (Capra, 2007; Hollweg, 2011; Orr, 1992) was reflected in their interpretations of their relationships with and interactions in the natural environment within their home cultural context of India and their host cultural context of Aotearoa New Zealand. This understanding of their environmental literacy showed that their environmental identities and cultural identities were closely connected where the context determined their interactions in or with the natural environment. Within their home cultural context of India, all of the teachers made connections between their environmental and cultural identities with reference to their personal identities and spaces as discussed in Section 6.2.1. This focus on personal identities could be due to the fact that for all teachers their early childhood environmental experiences were initiated by them or a family member within the home context rather than in the formal educational setting. On the other hand, within the host cultural context of Aotearoa New Zealand, the teachers interpreted their environmental identities and related connections to their cultural identities in terms of their interactions in and with the environment. This included their home and ECE contexts or personal and professional identities. They also highlighted the perceived positive influences on the self because of these environmental associations and experiences. These findings seem to depict the teacher participants’ experiences of the broader national culturally-oriented environmental

identity in the Aotearoa New Zealand context (MfE & Stats NZ, 2022) as part of their host cultural macrosystem. The connections between identity and environment were experienced as part of their transitioning personal and professional identities within the host cultural microsystems. However, unlike their experiences in the home cultural context these connections were not restricted to the microsystem but were infused within the home and ECE contexts, thus permeating the microsystem, mesosystem, and exosystem.

Within the ECE setting, three of the nine teachers, Meera, Prachi, and Aisha discussed how their environmental interactions were influenced by their personal interests and inclinations of being outdoors. For example, Meera considered it as a way of “connecting with natural elements within the ECE setting context.” With reference to their personal environmental and cultural contexts in Aotearoa New Zealand, Meera, Riya, Prachi, and Chery shared their passion for gardening as their way of connecting with the natural environment. For Chery interacting with plants and trees was “a form of emotional bonding” with the environment. For Riya the simple act of walking barefoot on the ground was a way to “feel the connection with the earth”. Thus, environmental connections such as gardening, feeling the earth, and emotional bonding all reflected teacher participants’ environmental literacy in the form of knowledge, motivation, confidence, and inclination to make direct contact with the natural environment (Eames et al., 2018; Hollweg, 2011; Orr, 1992).

Teachers’ Indian cultural and environmental identities enabled them to recognise and make spiritual connections between themselves and the environment. Indian philosophy encourages spiritual connections to ancestors and places (Singh, 2012). Spiritual development was also one aim of Gandhi’s Nai Talim or Basic Education philosophy (MGNCRE, 2018). Additionally, the teachers were able to make links between these ideas in their home cultural identities and their host cultural identities. For six teacher participants, their interactions in and with the natural environment were spiritual and philosophical in nature. According to Ila, connecting with the natural environment made her think about the bigger picture in life and her place in the world. Simran, Sheila, Riya, and Chery talked about how being in natural fresh air brought them a sense of calm, tranquillity, and relaxation that relieved stress. For Sheila, it was also a way of connecting with God and experiencing spirituality. She likened her spiritual experience to that of *te ao Māori* (the Māori world) through a “sense of identity that is based upon affiliations to ancestors”. This sense of identity and spirituality based on connectedness to ancestors, place and people has also been discussed in literature related to

the significance of kaitiakitanga in te ao Māori (Alcock & Ritchie, 2018; Ritchie, 2017; MoE, 2017). Teacher participants' spiritual and philosophical connections with the natural environment are indicative of their perceptions of the interrelatedness of all life systems and a sense of wonder at the beauty of nature, also considered integral to environmental literacy development (Capra, 2007; Orr, 1992).

All of the teacher participants highlighted the significant connection between environmental and cultural identity that influenced their understanding and interpretation of Environmental and Sustainability Education in ECE. For instance, Meera's interpretation of her environmental identity and ways of connecting with the natural environment appeared to be embedded in her cultural identity based on the Hindu philosophy of respect and reverence for all life and species (Jain, 2010; Singh, 2012). She made clear connections between her environmental and cultural identities. She believed that her cultural orientations and upbringing in the past influenced her positive interactions and connections with the natural environment in the present. According to her, "My mother feeds birds, cows, and I think that's who I get it from, but I have just developed my own ways of doing things, connecting with nature". Similar links between te ao Māori (the Māori world) and the natural environment have been highlighted in studies by Alcock and Ritchie (2018) and Ritchie (2017) among others. *Te Whāriki* (MoE, 2017) also makes connections between cultural and environmental identity where teachers are expected to understand and include the ways in which diverse children, families, and cultures express their respect for the natural world.

Teachers' Environmental Identity Development and/or Transitions in their Aotearoa New Zealand ECE Contexts

The Indian teacher participants shared similar educational experiences in their home cultural context and had common experiences of cultural crossovers or transitions in terms of similar ECE qualifications from Aotearoa New Zealand. However, each teacher's cultural, professional, and environmental identity and ECE philosophies and practices appeared to be dependent upon their ECE setting (as detailed in Section 5.5). These contexts were significant due to the diversity of early learning services in Aotearoa New Zealand. Moreover, since *Te Whāriki* (MoE, 2017), the early learning framework, is non-prescriptive (Tesar, 2017; Tyler-Merrick et al., 2019) in nature, each setting creates its own philosophy and curriculum. Thus, the inclusion and implementation of Environmental and Sustainability Education varies from

one context to another providing unique conditions for each teacher participant to develop their environmental identity and/or transition.

Some teachers were part of what were viewed as favourable early learning contexts that enabled them to explore and build upon their environmental identities, while others did not have similar opportunities within their settings and were dependent upon their own initiatives. These contrasts and variations in context were highlighted in the form of the ECE setting curriculum or the manager's/head teacher's environmental philosophy and support; infrastructure or space; financial and other resources; and opportunities to learn about environmental and sustainability programmes. Similar findings were evident in studies that found school leadership and support to have a significant impact on migrant teachers' cultural and professional identity transitions (Yip, 2023; Yip & Saito, 2023).

Contexts varied in terms of a favourable or unfavourable curricula or programme. For instance, Riya had the apparent advantage of teaching in a kindergarten that was part of the EnviroSchools programme (Toimata Foundation, 2023). Her context provided her with numerous opportunities to learn about and get involved in environmental and sustainability teaching practices, which facilitated a positive exploration of her own environmental identity. Similarly, Simran was teaching at a not-for profit organisation run centre with a prominent nature-based programme where the settings had been planned around the nature-based programme. The multiple settings located on the expansive premise had spacious outdoor natural spaces, regular nature and community excursions, and natural resources. Rosie and Chery seemed aware of the environmental ideas of their setting and curriculum but within the reference of their specific Montessori philosophy and practices. In contrast to these contexts, Meera highlighted her setting's inability to participate in certain environmental and sustainability programmes due to financial constraints. Aisha was part of a faith-based private ECE setting, where the faith was central to the setting's curriculum and practice, and Environmental and Sustainability Education did not appear to be dominant in the context.

The manager's/head teacher's environmental and sustainability philosophy and level of support were also found to be a significant factor in teacher participants' environmental identity development and transitions. In the case of Simran, the setting's environmental and sustainability features were strongly supported by the director who appeared to be influential in Simran's environmental identity transitions. Prachi and her ECE setting manager appeared

to be environmentally-inclined in their philosophies and practices and hence despite the limited environmental spaces and features her environmental identity transitions were encouraged with the manager's support. This has been commented on before through the importance of leadership in fostering teachers' identities and experiences within Environmental and Sustainability Education specifically (Almeida et al., 2018; Miller et al., 2022b; Ritchie, et al., 2010) and ECE broadly (Kaur, 2017).

In terms of infrastructure and/or space factors in the contexts, availability of or access to natural areas within and beyond the gate appeared to influence the nature of teachers' environmental identity transitions and their environmental and sustainability philosophy and practices. Ila was a manager at a farm-based private ECE setting where teachers and children had several advantages such as access to wide open natural spaces, presence of farm animals, and ample natural resources. These and other features of the setting provided for rich environmental and sustainability experiences for children and teachers alike. On the other hand, Aisha's ECE setting had limited outdoor space with little scope for natural outdoor play or sustainability initiatives. Thus, for her, the nature of children's and her own interactions with the natural world were shaped by the need for more space and access to natural environment; connections that might not be realised within the gate in this context.

Teachers' environmental identity development and transitions were also dependent upon the ECE setting's access to resources and funds. For instance, as Simran's ECE setting had a nature-based programme, and had resources, they were able to afford transport for excursions. Whereas, according to Meera, financial constraints and staff ratios appeared to impact teachers' abilities to plan and execute sustainability and environmental programmes and learning experiences. Thus, although she appeared to have a strong culturally-oriented environmental identity and was keen on exploring it further, the context did not provide optimal conditions for such exploration.

Early learning context that focussed on environmental and sustainability components provided teacher participants like Riya, Simran, Ila, and Sheila with opportunities to become aware of other environmental and sustainability programmes and learning experiences in the Aotearoa New Zealand ECE context. For the rest of the participants, their early learning contexts did not feature, focus on, or include the natural environment within their curriculum and daily practice. Hence the teachers had little or no exposure or opportunities to learn about

regional or national ECE environmental and sustainability programmes. According to the teachers, even though their ECE setting might have had few opportunities for Environmental and Sustainability Education, they had to work upon these aspects for themselves. Thus, whilst the curriculum framework opens the door for Environmental and Sustainability Education opportunities, the way they're enacted in different settings may play a part in the development of migrant teachers' environmental identity connections to the local place (Clayton & Myers, 2015; Greenwood, 2012).

Therefore, from an ecological systems perspective (Bronfenbrenner, 1979), these findings indicate that for the migrant teacher participants, microsystem components such as their setting context and manager's/head teachers' role within that are more influential than elements of the exosystem such as the ECE curriculum policy. Hence, the nature of these connections might imply that understanding and interpreting migrant teachers' environmental identities and experiences, and how these influence children's learning and development, requires attention to their immediate and specific context, as compared to only addressing larger curriculum policies. On the other hand, with reference to Sauvé's (2009) spheres of development, all of the influencing aspects (curriculum framework, ECE context, management/leadership) lie within the sociosphere. Yet, the nature of interactions between the elements of the sociosphere and the psychosphere (environmental self) determined the teacher participants' interactions with the ecosphere (natural environment) and in turn their environmental identity transitions.

For the Indian teacher participants, in their home cultural context, the natural environment appeared to primarily be a part of their early learning experiences within the home context or microsystem but might not have been an important feature of their cultural systems or the larger macrosystem. Here in Aotearoa New Zealand, they encounter a context where environmental identity is seen as a part of not just the personal identity or microsystem but also the national and cultural identity as part of the macrosystem. It further permeated the exosystem in the form of environmental features of the curriculum framework. Thus, teachers undergo cultural and environmental identity transitions in this context as they navigate these two diverse ecological systems. This pervasiveness of the environmental identity in Aotearoa New Zealand could possibly imply the nature of cultural and environmental identity transitions that migrant teachers are required to make or the kinds of directions these

transitions might take in order for them to become acculturated into their host cultural systems and ECE context.

The sociosphere (people and socioculturally-mediated practices within the ECE context) and the ecosphere (environmental and sustainability features of the ECE context) seemed to have played a significant role and had a positive influence on the teachers' psychosphere or environmental identities in the process. These experiences implied a strong connection between their identity development (psychosphere), the setting context and management's/head teacher's support (sociosphere) and opportunities to interact with the natural environment (ecosphere) as depicted in Figure 6.3 above.

Perceived Cultural and Environmental Identity Transitional Challenges and Support Systems

The Indian teacher participants appeared to have made considerable cultural transitions when they migrated to Aotearoa New Zealand and began their journey as ECE teachers. They each described their cultural crossovers and transition experiences as a multilayered process compounded by individual differences in academic backgrounds and ECE experiences in their home country. Their culturally-oriented environmental ideas and practices were also influenced by their formal early childhood teaching qualification and practice as teachers in Aotearoa New Zealand. Teachers' environmental identities underwent transitions as they moved from one ecological system to another and negotiated their identities to suit the new cultural context (Bronfenbrenner, 1979; Vygotsky, 1978). Their original environmental and sustainability ideas and environmental identities were encouraged and challenged as they began their teaching journeys in Aotearoa New Zealand ECE. The primary step in the process was familiarisation with the Aotearoa New Zealand ECE context, curriculum, philosophy, and practices, especially with reference to Environmental and Sustainability Education as the focus of this study.

Cultural and Environmental Identity Transition Challenges.

The common thread across all types of settings appeared to be the challenges faced in the process of including or implementing Environmental and Sustainability Education ideas within their early learning contexts. Some of these challenges appeared to be primarily cultural identity related such as implementing a play-based curriculum. For some teachers the

transition challenges were focused on the close connections between their cultural and environmental identities. They referred to all-weather outdoor play, messy play, and mud and puddle play as challenging to engage with during their initial cultural crossover.

Contextual challenges were found to be the most significant determinants in the transition process, especially in engagement with Environmental and Sustainability Education. For instance, Aisha voiced the lack of outdoor natural spaces within her setting and the lack of transportation for field trips as the primary challenges. Financial constraints due to the low fee structure were a substantial challenge for Meera's ECE setting where the management had to prioritise learning experiences they could pay for. Staff shortages and hence the inability to meet the government-imposed staff-child ratio for nature-based field trips; the COVID-19 pandemic and its impact on staff numbers and outdoor excursions were cited as significant challenges by Sheila, Meera, and Aisha.

Studies with early childhood teachers in the United States (Ernst, 2014) and primary school teachers in Australia (Miller et al., 2022a) revealed similar perceived barriers to nature-based experiences or outdoor play. Lack of walking access to natural outdoor settings, transportation, lack of time, weather concerns, staff shortage, and COVID-19 disruptions were cited as common barriers to the use of natural outdoor settings by teachers in ECE. However, contrary to the findings in this study and those of Miller et al. (2022a), financial constraints were not cited directly as a barrier in the American study. It might be speculated that for corporate-owned private early learning services in Aotearoa New Zealand, financial resources, and policies, as part of the exosystem, play a significant role in determining the extent of Environmental and Sustainability Education within specific contexts. This would in turn limit opportunities and support for teachers' environmental identity development and/or transitions.

Interestingly, and in contrast to various literature (see for example, Ernst, 2014; Miller et al., 2022a; Torquati et al., 2013) on early childhood teachers' perspectives of enablers and barriers in environmental and nature-based education, confidence was not perceived as a barrier among the Indian teacher participants. Although various aspects of the environmental identity and Environmental and Sustainability Education within the Aotearoa New Zealand context were new or different for the teacher participants, they all expressed motivation and eagerness to take up this new challenge and include it within their teaching philosophy and practice like all other aspects of the curriculum. This finding also indicates the teachers'

adaptability and preparedness to acculturate themselves into the environmental context specifically within ECE and broadly within Aotearoa New Zealand, while preserving their own culturally-oriented environmental values.

Support Systems.

For the teachers who acknowledged challenges in their cultural and environmental identity transitions, their professional and personal experiences in the host cultural context of Aotearoa New Zealand ECE were cited as being instrumental in the transition process. It enabled them to adapt to and overcome cultural and environmental assimilation challenges detailed above. For most teachers, their support systems were a combined network of their personal, familial, professional experiences (microsystem) within the larger cultural contexts (macrosystem).

The most significant support systems that evidently helped the teachers mitigate some of their cultural and environmental identity transitional challenges were their host ECE settings. Support and reinforcement from within the context appeared to be a significant enabler in teachers' implementation of nature-based programmes or Environmental and Sustainability Education (Almeida et al., 2018; Miller et al., 2022b), which in turn helped nurture their environmental identities. For instance, for Simran, her setting's focus on Environmental and Sustainability Education and the director's personal nature-based philosophy and encouragement provided that vital support needed during the transition phase. As part of a supportive context, learning from peers within their teaching teams supported teacher participants' cultural and environmental identity transitions. For Rosie, Ila, and Sheila working alongside local teachers who taught in ways based on environmental and sustainability philosophies was a good learning experience. Only one teacher, Simran, shared the experience of a professional development workshop related to Environmental and Sustainability Education, an experience she viewed as valuable. Professional development experiences might be beneficial especially for migrant teachers who may be less familiar with the practices in the local context. However, despite these opportunities the ECE setting itself seems equipped to provide the support migrant teachers require to overcome challenges in their cultural and environmental identity transitions.

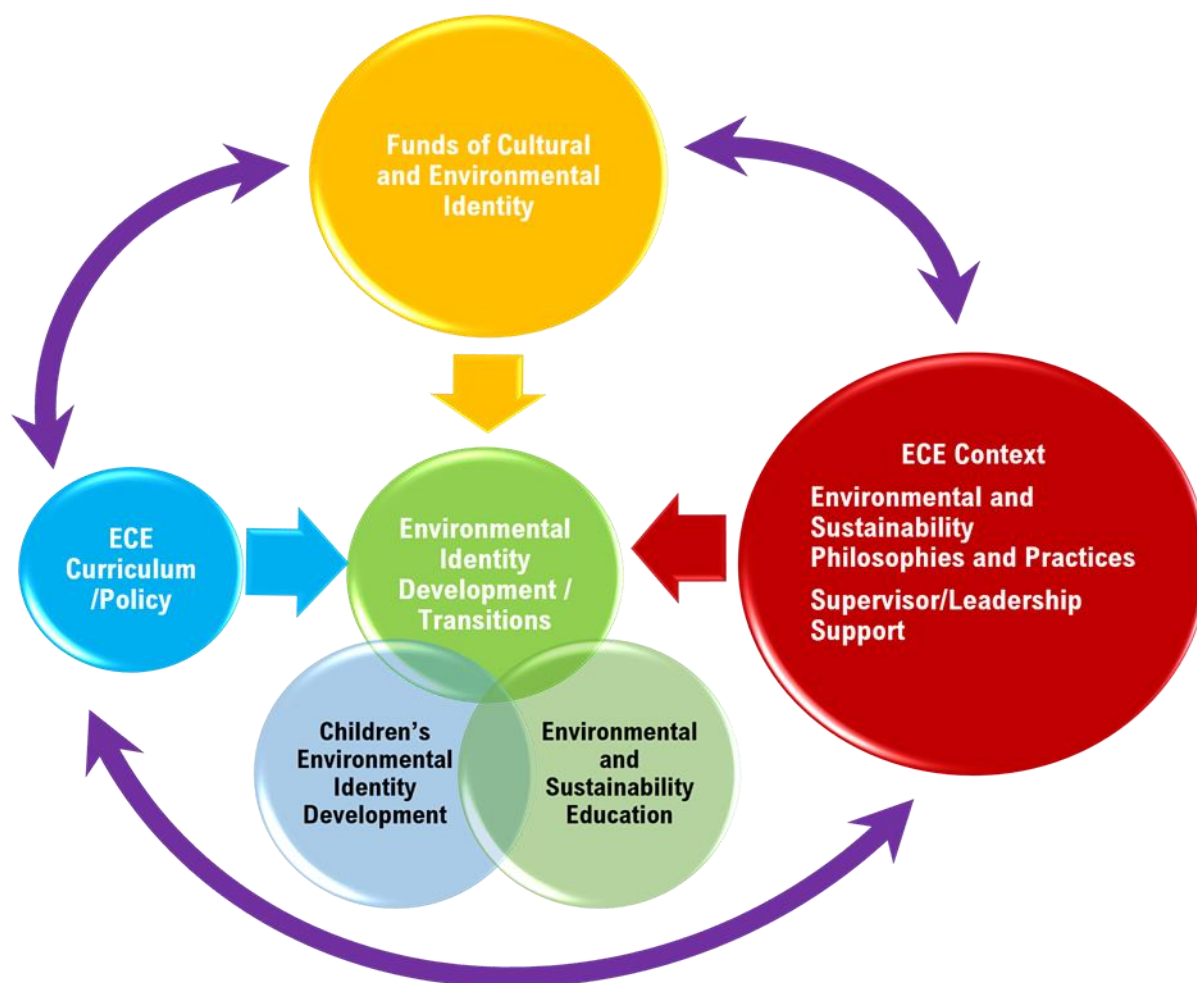
Apart from the teachers' ECE settings, teachers' professional experiences had made them aware of the significance and meaning of environmental and sustainability in the local ECE

context where years of experience in Aotearoa New Zealand ECE had enabled them to adopt a new or different perspective on various aspects of environment and sustainability in ECE. Additionally, personal experiences of having their own children grow up in Aotearoa New Zealand and attend early learning services and primary schools here also helped some teacher participants perceive the benefits of children spending time in nature. Alternately, the transition process appeared to be relatively smooth and easy for some teachers like Sheila, Prachi, and Rosie, who viewed the cultural and environmental diversity within the ECE context as new ideas that they accepted and accordingly then modified their teaching philosophies.

Although teachers' personal cultural and environmental identities played a significant role in the process, their ECE settings including the environmental and sustainability philosophies and practices and support from their teaching teams seemed to be paramount in enabling the teacher participants' environmental identities and inclinations towards Environmental and Sustainability Education. Additionally, the teacher participants' cultural funds of identity provide them with the intrinsic motivation and inclination to implement Environmental and Sustainability Education in the Aotearoa New Zealand ECE context. Thus, the contextual factors seem to either strengthen or weaken the connections between the teachers' home cultural funds of identity and environmental identity transition in the host cultural context.

Figure 6.5 depicts the influence of these contextual aspects on the environmental identity development and/or transition of the teacher participants. Teachers' specific ECE settings seemed to be the most influential factor in the transition process. This context determined the extent to which teacher participants could bring their cultural and environmental funds of identity into their teaching practice. This interaction in turn influenced the way teachers interpreted and implemented *Te Whāriki* (MoE, 2017). All of these factors and the connections between them seemed to shape the development and/or transition of a migrant Indian teachers' culturally-oriented environmental identity, environmental and sustainability practices and teaching philosophies, which could be seen to affect children's environmental identity development within the ECE context.

Figure 6.5 *Influence of Contextual Factors on Teachers' Environmental Identity Development and/or Transitions*



Note. The Size of the Three Outer Circles Depicts the Perceived Strength of their Influence.

Perceived Influences of Teachers' Culturally-Oriented Environmental Identities on Teaching Practices.

Most teacher participants viewed their culturally-oriented environmental identities as linked to their professional teacher identities. Their cultural orientation evidently influenced their early childhood Environmental and Sustainability Education philosophy and teaching practice in the host cultural context. Yet, the extent to which their cultural and environmental orientation as Indian teachers influenced their overall and specifically environmental ECE practices was varied. For most teacher participants, their cultural and environmental identities seemingly worked in tandem where opportunities to bring in and include their cultural views on the natural environment were encouraged within their ECE settings. These cultural influences were visible in the form of broader connections they made between their cultural

and environmental identity and the curriculum framework, Māori cultural worldviews; and cultural inclusion and exchange in ECE. Teachers made connections specifically between their environmental identities and te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals). They were able to use their cultural and environmental funds of identity to make these connections. If the connections were supported and encouraged by their ECE settings, they had a positive impact on their cultural and Environmental and Sustainability Education philosophies and practices which in turn would influence children's cultural and environmental identity development.

The teacher participants highlighted their cultural values of hospitality, relationships, and care for others as favourable influences on their teaching practices. The teachers also shared that they worked towards encouraging and practising these values to support children's learning about the same. These cultural identity features are also highlighted within the curriculum framework *Te Whāriki* (MoE, 2017), under the Principle of Relationships | Ngā hononga where teachers encourage children's "responsive and reciprocal relationships with people, places, and things" (p. 21). Their cultural value of relationship building was also considered significant to encouraging children's sense of belonging (MoE, 2017) to the ECE setting and to the broader cultural context of Aotearoa New Zealand. According to Sheila, these values meant "building relationships is the first key thing in any interaction, be it a child or family".

Teachers' assessment documentation in the form of Learning Stories (Carr, 2001; Carr & Lee, 2012) also reflected teachers' strong cultural identities and its influence on their teaching. This was evident in their focus on cultural aspects of children's learning and development. Simran believed that her cultural identity provided her with a culturally unique perspective on children's environmental interactions and hence recording of the related learning. According to Riya, it was extremely important for her to ensure that children's cultural identities were welcomed and included in the group. This was because of her own experiences as a new immigrant to Aotearoa New Zealand in the past. Hence her assessments often focused on children's cultural identity and sense of belonging in a new context.

As part of their strong cultural identity, the teacher participants valued diverse cultures and worldviews within the multicultural Aotearoa New Zealand ECE context. For them, it was not just about sharing their cultural identity, but more of a cultural exchange where all cultures were included and celebrated. Their experiences reflected their inclination to learn about

children's families, cultures and languages and reflect the same in the setting curriculum, also a provision in *Te Whāriki* (MoE, 2017). According to Meera, "No matter what, you can never leave your culture or nature behind, it's always with you in whatever you do. If you take your culture along, you will learn about other cultures as well".

This inclination to share their cultural identities with the children and others within the ECE context is one way in which migrant teachers might develop a shared sense of belonging in their host cultural context. It is within this sociosphere or ECE context that migrant teachers can develop a sense of belonging with reference to an awareness of their reference culture (Sauvé, 2009), which is the Aotearoa New Zealand culture in this case. A sense of belonging is also a central feature within Strand 2: Belonging | Mana whenua of *Te Whāriki* (MoE, 2017) where children are encouraged to make connections between people, places, and things. In the case of the teacher participants, it seemed that they shared this philosophy and applied this curriculum feature to themselves as well by making connections between their home and host cultural contexts. Several studies (Arndt, 2018; Gould et al., 2023; Kaur, 2017; Rana, 2020) discuss similar notions of teacher cultural identity where they argue that in order to nurture children's and families' cultural identities, all teachers, especially migrant teachers, need to feel a sense of belonging themselves. Hence, a conscious recognition and inclusion of teacher cultural identity and sense of belonging (Arndt, 2018; Chan & Ritchie, 2020) could support the cultural transitions of migrant teachers for the benefit of all participants within the ECE context.

However, two of the nine teachers shared perspectives that were significantly diverse from the other teachers. Chery and Riya believed their cultural identities did not have an impact on their ECE teaching philosophies and practices. According to Chery, the reason was because her teaching philosophy was "quite similar to the Indian ethics" of "respect and focus on the child". On the other hand, in Riya's view, the fact that she did not have any ECE qualification or teaching practice from India, meant that she had developed a professional ECE perspective only after migrating to the Aotearoa New Zealand cultural context and hence did not have an Indian reference point to compare that to.

Four of the nine teacher participants believed that their cultural identities and orientation influenced their environmental philosophies and teaching practices specifically. The nature of the cultural influences, although diverse, helped them bring their culturally-oriented

environmental ideas and inclinations into their ECE contexts. For Meera, her culturally-oriented environmental identity had a positive influence on her environmental and sustainability teaching practices where she drew upon the Hindu philosophy of karma (loosely translated as deeds/actions). Her teaching philosophy and practice were influenced by her cultural identity based on the tenets of environmental actions and the role they play in one's karma (Jain, 2010). She stated, "It's a cycle – we can call it *karma* or by any other name...What goes around comes around. If you do good to others it will come around to you. That's what we want to teach children, it's in our culture...You want your child to learn to be kind (to all other beings), how will you teach them (that) kindness?" Her cultural funds of identity (Esteban-Guitart & Moll, 2014) enabled her to share a perspective of mutual interactions among all living beings.

Some teacher participants perceived similarities between te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals) and the Indian culture in terms of reciprocal relationships with the natural environment (Alcock & Ritchie, 2018; MfE & Stats NZ, 2022). They highlighted the relationship between culture and environment through encouragement of respect for the natural environment as also included within the Belonging | Mana whenua Strand of the curriculum document *Te Whāriki* (MoE, 2017).

Meera made explicit connections between her sociocultural identity and the ancient Hindu beliefs of nature deities (Jain, 2010; Singh, 2012) and te ao Māori notions of Atua (Māori Gods or deities). "The Māori culture is similar to ours in many ways. They consider all beings and things sacred or God - like food, air, plants." Meera's experiences seemed to indicate that teacher participants' cultural transitions were supported by their cultural funds of identity. She especially highlighted the environmental beliefs and philosophies embedded in the Indian culture. Perhaps in addition to the existing five funds of identity types (Geographical; Practical; Cultural; Social; Institutional, as detailed in Section 2.8.3) described by Esteban-Guitart and Moll (2014), it would be valuable to add Environmental Funds of Identity that includes the culturally-oriented environmental beliefs, values, experiences, and practices that a migrant teacher might bring into a host cultural context. Thus, environmental funds of identity may be defined as "historically accumulated, culturally-developed, and socially distributed resources that are essential for people's self-definition, self-expression, and self-understanding" (Esteban-Guitart & Moll, 2014, p. 37) in relation to the natural environment.

Therefore, the teacher participants seemed to make meaning of their professional identities and teaching pedagogies by means of their cultural and environmental funds of identity and the comprehension, participation, and interaction within the host sociocultural group. They used these cultural funds of identity in the form of cultural values, beliefs, and practices to facilitate their cultural and environmental identity crossover into the host cultural context. They could tap into their “experiences of biogeographies, sociocultural and socioecological histories” (Eames & Cutter-Mackenzie, 2017, p. 69) or funds of identity (Esteban-Guitart & Moll, 2014), specifically their cultural (values such as relationships, care), social (influence of significant others such as parents in childhood), institutional (family, school, early learning context), and environmental funds of identity to facilitate their environmental and sustainability practices within ECE. The role of acknowledging and including teachers’ funds of knowledge (Moll et al., 1992) in the ECE context has also been highlighted by Rana (2020) in their study with migrant Indian teachers.

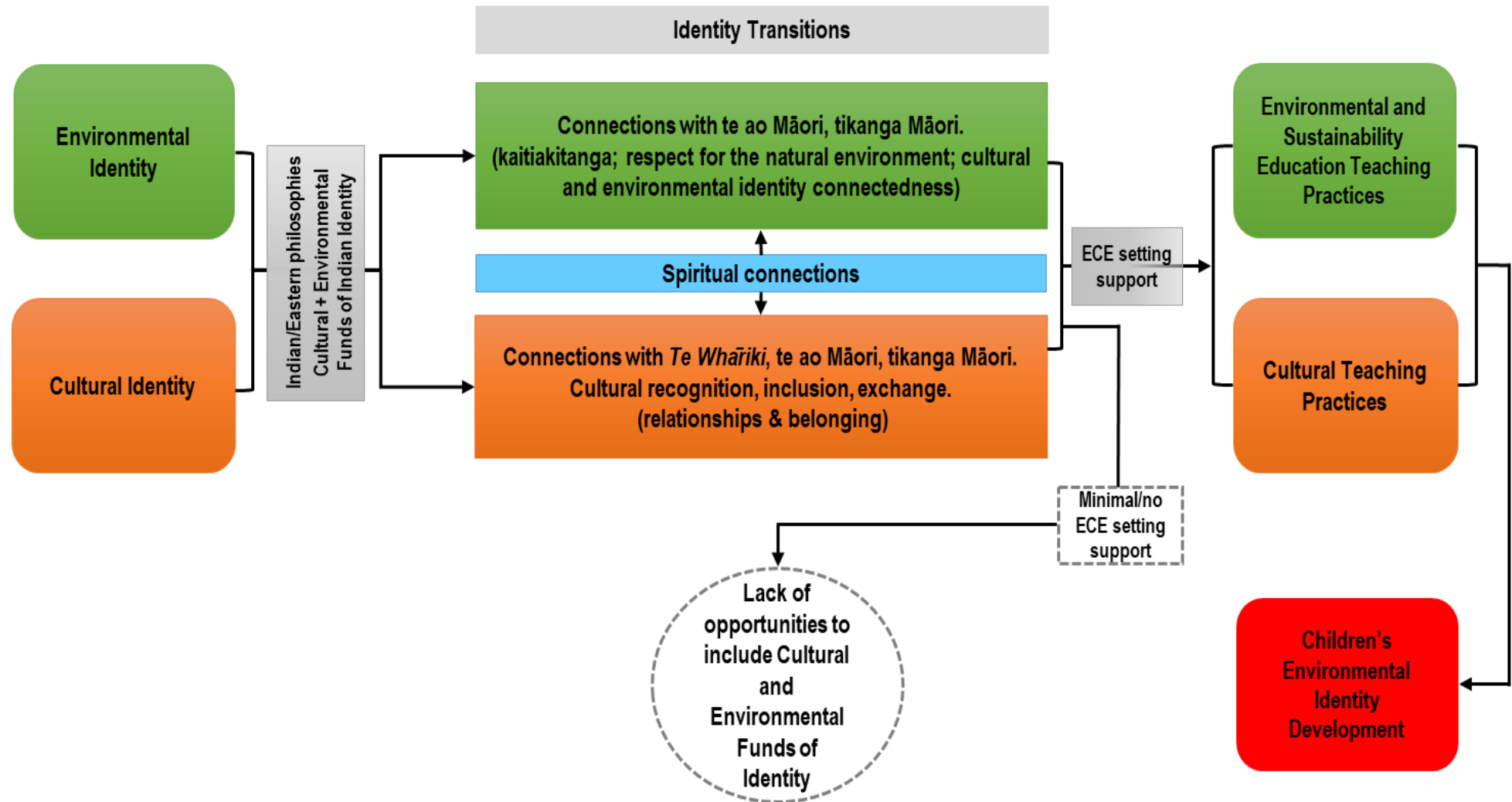
The cultural associations made by the teacher participants highlighted meaningful connections between migrant Indian teachers’ cultural values and the expected professional practices within ECE. It is also within this sociosphere or ECE context that migrant teachers can experience difficulties and advantages of living and working with others (Sauvé, 2009). The shared cultural associations between their home and host cultural systems can then become advantages through cultural exchange of environmental and sustainability philosophies and practices.

6.3. Conclusion

The teacher participants’ experiences reflect their culturally-oriented environmental identity transitions. They perceived close connections between their professional and culturally-oriented environmental identities, and their cultural and environmental identities within the host cultural system. Their cultural identities and environmental identities were inseparable from their teaching practice and added value to it. The influence of these identities was experienced in the form of their teaching philosophies, assessment process, and environmental and sustainability beliefs and teaching practices.

There is an evident interweaving of culture and environment, two elements of the macrosystem, and its interaction with *Te Whāriki* (MoE, 2017) within the exosystem. Similarly, there is an interweaving of cultural and environmental identities within the microsystem for migrant Indian teachers. Their environmental identities are intrinsically bound to their cultural identities. These connections can be highlighted through an analysis of their cultural and environmental identity transitions and influences on their teaching practices within the context of interactions between their psychosphere, sociosphere, and ecosphere, within their home and host ecological systems. Figure 6.6 presents a conceptual framing of these culturally-oriented environmental identity transitions and influences as detailed in the conclusion.

Figure 6.6 *A Conceptual Representation of the Perceived Influences of Teachers' Culturally-Oriented Environmental Identities on their Teaching Practices*



The teachers bring their cultural and environmental funds of identity from the home cultural context or sociosphere determined by significant life experiences in their early childhood and adulthood. As the teachers transition from their home ecological system to the host ecological system, they are required to revisit their culturally-oriented environmental identities to integrate themselves with the host cultural and environmental context. This reorientation is based upon their teacher education, ECE setting context, experiences of the Aotearoa New Zealand culture, and their environmental literacy in the new context. Migrant Indian teachers' identities and experiences (psychosphere) that are influenced by their home and host cultural perspectives (sociosphere) determine their way of viewing the natural environment and their connections with it (ecosphere). This transition process denotes a clear interaction between the teachers' psychospheres, sociospheres and ecospheres.

The teachers' culturally oriented environmental identity transitions were facilitated by their perceived cross-cultural and cross-identity connections. In terms of their cultural identity transitions, the teachers identified similarities between their Indian cultural identity as ECE teachers and *te ao Māori* (the Māori world) and *tikanga Māori* (Māori ways of doing including practices, customs, and rituals). These similarities were viewed primarily in terms of the importance given to relationships and belonging. As a result, teachers perceived the importance of cultural recognition, inclusion, and exchange within a multicultural ECE context. These connections in turn influenced their teaching practices where they worked towards children's cultural identity recognition and inclusion while encouraging a sense of place and belonging within the ECE setting. The teachers used their cultural and environmental funds of identity to interpret the curriculum framework and translate it into practice accordingly within their settings. The teachers made similar connections between their cultural identities and elements within *Te Whāriki* (MoE, 2017). These connections were also focused upon the culturally-shared notions of relationships and sense of belonging.

The cultural and environmental identity transitions of migrant Indian teachers is brought about by the interaction between three cultural milieux they traverse – the Indian, Māori, and Western New Zealand sociocultural contexts. A significant finding that has emerged from this study is that there appear to be spiritual and Indigenous connections between the Indian and Māori cultures with an overlaying colonial English system. The Indian teachers bring with them their cultural and environmental philosophies and identities and find similar beliefs and

notions in te ao Māori such as the diverse understandings of kaitiakitanga. They recognise cultural and environmental philosophies and ideas that they have been thinking about and practising within their own cultural contexts. It is likely that teachers are influenced by Indian and Eastern philosophies (as discussed in Section 2.8.3) that have an impact on the way they perceive or form connections between their home and host cultural identities as well as between their cultural and environmental identities. Hence, the teachers think about and draw on their funds of Indian identity and make connections with the Māori as well as broader New Zealand culture. These similarities in notions, ideas, and values bring about a sense of familiarity and a sense of comfort and confidence in the teachers and hence enable the transition process. These connections act as bridges that facilitate their transitions across the cultural and environmental contexts enabling them to merge their home and host cultural and environmental identities. These links might be further fostered within ITE programmes to facilitate migrant teachers' cultural and environmental transitions and to better prepare them for their teaching practice.

Focussing on their culturally-oriented environmental identity transitions, teachers used their cultural and environmental funds of identity to make meaningful connections between their culturally-oriented environmental identities and the host cultural context. They interpreted the interweaving of their cultural and environmental identities by making connections between their environmental orientations, te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices, customs, and rituals). They believed that culture and environment were intrinsically connected within the Indian and Māori culture where both cultural orientations encouraged mutual and reciprocal relationships with the natural environment, also a feature of kaitiakitanga (Waitangi Tribunal, 2004). These cross-cultural connections also reinforce the idea of going beyond physical spaces and national boundaries to achieve a broader and more collective sense of planetary citizenship (Orr, 1992). Cultural commonalities can enable stronger connections between cultural and environmental identities across nations and cultures towards the collective goal of planetary wellbeing.

Altogether, teachers' environmental and cultural identity transitions were interwoven and interconnected. The teachers harnessed their cultural and environmental funds of identity to make these connections between their cultural and environmental identities as well as cross-cultural connections between their culturally-oriented environmental identities and te ao Māori (the Māori world) and tikanga Māori (Māori ways of doing including practices,

customs, and rituals). If these connections made by migrant teachers were supported and encouraged by their ECE settings and management/leadership, they had a positive impact on their cultural and Environmental Education teaching philosophies and practices. Conversely, minimal or no context support resulted in a lack of opportunities to include their cultural and environmental funds of identity into the ECE setting and hence minimal or no possible influence on children's environmental identity development (see Figure 6.4).

There was a significant connection between teachers' cultural and environmental identity transitions from their home cultural context to the host cultural context. Thus, while considering Environmental and Sustainability Education within the Aotearoa New Zealand ECE context, we must consider similar connections between cultural orientations and environmental understandings for children from diverse cultural backgrounds. Children's environmental identity development would be influenced significantly by their cultural identity where children's cultural values, beliefs, and traditions are woven into the process. The inclusion and support of teacher identity development and/or transitions could facilitate children's cultural and environmental identity development within the ECE settings. Respect for and inclusion of diverse cultural and environmental identities of teachers and children would further reinforce the idea of a planetary community of humans and all other beings (Orr, 1992). The impact of a teacher's environmental identity on children's environmental identity is a significant factor in ECE settings. A teacher with a strong environmental identity could encourage children's experiences with nature, in turn mentoring lifelong environmental connections, stewardship, and citizenship.

6.4. Limitations

The limitations for this research study are presented in this section.

This study was conducted with a limited number of Indian teachers from eight ECE settings within one city in the North Island of Aotearoa New Zealand. Thus, the participant sample cannot be considered representative of all Indian teachers in ECE services across Aotearoa New Zealand. The prospective participating settings and/or teachers were also dependent upon and limited by the willingness and availability of settings and Indian teachers to participate in the study post the onset of the COVID-19 pandemic. However, I did attempt to include a cross-section of early learning setting types. Data were obtained from multiple sources and triangulated to provide a holistic context of the participating teachers and services

with reference to the research topic. Additionally, as an interpretivist study, the purpose was to understand teachers' interpretations of their realities and meaning making rather than achieve generalisable and replicable results. Thus, due to the limitation of participant numbers and restricted geographical location, the data from the study cannot be generalised to all Indian teachers across all ECE services in Aotearoa New Zealand but can be used as a reference for future studies.

Although the original research objective was to recruit participants from a diverse range of ECE settings including not-for profit/community-based centres, Kindergartens, and corporate ECE chains, I was unable to do so primarily due to the circumstances created by the COVID-19 pandemic. Although I approached various centres, organisations, and private chains, I did not receive a positive response due to the unprecedented and extreme conditions that the education sector was grappling with in dealing with the pandemic and during the post-pandemic recovery phase. This included the few ECE corporate chains identified that employ significant number of migrant Indian teachers. Few settings were willing to participate in the study and permitted me to approach Indian teachers working there, and hence I had to recruit more than one teacher from any particular setting if available in order to obtain a sample. Additionally, the Kindergarten Association contacted apparently had only Indian teacher working with them, who I did interview. Therefore, considering that the diverse types of ECE settings provide very different Environmental and Sustainability Education affordances, as the research originally aimed to study, the final sample was not representative of the various types of ECE settings in the country.

As discussed in the literature review (Section 2.3.) and methodology (Section 3.4.2.), the diverse ECE service types, ownership and leadership play a significant role in the extent to which Environmental and Sustainability Education is a feature of a setting and in turn affects the teachers and children within the context. This notion was evident in the data from managers/leaders at the Indian teacher participants' settings. However, data on the influence of leadership was obtained primarily to supplement that from Indian teacher participants and for triangulation purposes. An in-depth exploration of leadership practices and their role in promoting Environmental and Sustainability Education within the settings was beyond the scope of this study.

Although the study used multiple sources for data collection, the personal circumstances of individual teacher participants and contextual circumstances within their ECE settings presented certain limitations. One Indian teacher participant could not provide Learning Stories for analysis as she changed her employer/ECE setting during the course of the study. For another participant, I could not access Learning Stories, conduct ECE setting observations, or interview the manager due to the manager's non-participation.

In terms of trustworthiness, two Indian teacher participants did not complete a member check of their interview transcripts due to personal and professional circumstances. Although ethically I was able to use the transcript data for analysis, I remained conscious of how this affected the trustworthiness of my study and used this data accordingly in my analysis (detailed in Section 3.6.4). These data were analysed with reference to the other interview data and for the purpose of triangulation.

Although I use the term Indian identity as indicative of this national identity to the group of participants, I am aware of the limitation this poses. An Indian identity can be indicative of any person from India, while bearing in mind that India has an immensely diverse culture with a wide variety of subcultures, religions, other cultural affiliations, and geographies. Thus, in this study an Indian identity was used in the broadest sense of the term denoting the holistic cultural identity and philosophies of people of Indian origin. Hence, the findings may not hold true for all Indian teachers from various Indian subcultures living in Aotearoa New Zealand ECE as their experiences within their home culture may have varied significantly. Yet, as a growing subpopulation of migrant teachers from the same country, who have experienced a common educational system in India, and undergone similar academic and professional ECE preparation in Aotearoa New Zealand, the national identity unifies them as a cultural group with a shared Indian identity.

The last but biggest challenge that presented several limitations for my study was the onset of the COVID-19 pandemic in early 2020, precisely when I was approaching ECE services to recruit participants (detailed in Section 3.4.1). Initially, ECE settings were closed during the numerous lockdowns that year which delayed the recruitment of participants. Additionally, when the services reopened intermittently, due to the unprecedented circumstances, ECE services and teachers were faced with numerous and tremendous challenges such as adjustments to new COVID-19 containment and prevention systems and the resulting increase

in workload. This made recruiting participants difficult and hence I had to limit my sample, modify sampling procedures, delay the data collection process significantly and extend it over a longer period.

6.5. Implications and Recommendations

An understanding of how migrant teachers transition from one socio-cultural context to another with reference to their environmental identity can provide several inputs for research, policy, and practice. This section includes the implications and recommendations that arise from my study.

6.5.1. Implications and Recommendations for Policy

Indian teachers typically gain their ECE qualification and experience after migrating to Aotearoa New Zealand, as was the case for all participants in my study. However, as the findings indicated, despite *Te Whāriki* (MoE, 2017) as the overarching curriculum framework, teachers' understanding and interpretation of Environmental and Sustainability Education and the development and/or transition of their environmental identities within the host cultural context were shaped by their individual experience and practice based upon the respective ECE setting philosophy, and support from their managers/head teachers. They often had limited or no opportunity to explore the place and value of kaitiakitanga and Environmental and Sustainability Education as recommended by early learning educational policies and documents, specifically the early childhood curriculum framework *Te Whāriki* (MoE, 2017). They had limited awareness of the kinds of Environmental and Sustainability Education programmes available for ECE, also determined by their ECE context. Thus, migrant teachers are expected to implement Environmental and Sustainability Education with a focus on kaitiakitanga without a substantial orientation to the same within the specific context of Aotearoa New Zealand.

These findings indicate scope for an orientation to kaitiakitanga and Environmental and Sustainability Education values, philosophies, practices, and programmes within Aotearoa New Zealand for Indian (and possibly other) migrant ECE teachers. Such an orientation could provide the required support during the cultural crossover and identity transition phase. Migrant teachers could benefit from opportunities that move beyond a preliminary understanding of the curriculum document and dig deeper to explore the implicit and explicit

notions of kaitiakitanga and Environmental and Sustainability Education within. These explorations and understandings could be shared within their Initial Teacher Education programmes to initiate the process of environmental identity development and/or transformation with reference to the curriculum. This knowledge exchange might better prepare the teachers for ways in which they can initiate and include Environmental and Sustainability Education within their ECE setting teaching teams in the future. One way of supporting this preparation would be Environmental and Sustainability Education units or papers included in initial ITE programmes that provide a strong and common foundation to all teachers before they begin their qualified teaching practice. These programme components or papers could be designed to also provide opportunities for migrant teachers to share their existing culturally-oriented Environmental and Sustainability Education orientations. Migrant teachers bring their own funds of cultural and environmental identity and experiences that could facilitate sharing of Environmental and Sustainability Education ideas and approaches from various worldviews and perspectives. Their input could strengthen the collective learning of the group of teachers. Such interaction could also provide opportunities to examine cultural similarities and variations within the teacher education space where migrant teachers can bring and explore their cultural and environmental identities and ideas.

According to *Our Code Our Standards* (Education Council Aotearoa New Zealand, 2017) the promotion and protection of human rights, sustainability, and social justice is required to be embedded in ITE programmes, such that student teachers develop a better understanding of this expectation as part of their teaching profession. This provision has a significant implication for migrant teacher identities in general and Indian teacher identities in particular where a teacher's inclination towards Environmental and Sustainability Education is likely to be influenced by their personal and academic values and beliefs. Since teachers' knowledge, interests, and initiative are likely to influence children's environmental attitudes and behaviour, it could be important to address these teacher dispositions within ITE programmes. Migrant teachers could be provided opportunities to explore, share, enhance and add to their context-specific environmental values and beliefs. Such an enabling of their identity transitions would in turn enable them to adhere to the Teaching Council Code and prepare to facilitate children's environmental identities in their future roles.

Additionally, this study revealed the significant connectedness between teacher participants' cultural and environmental identity and the meaning it holds in the increasingly multicultural

ECE context of Aotearoa New Zealand. However, their cultural identities appeared to be their strengths, especially in the case of Environmental and Sustainability Education. Moreover, cultural inclusion and exchange facilitated their sense of belonging and Environmental and Sustainability Education practices within their respective ECE settings and the broader ECE context. As discussed in Section 6.2.3 children's cultural identity development and belonging within an ECE context would likely be influenced directly by teachers' cultural identity and sense of belonging. Then it could be considered important to address these features of the curriculum, especially from the perspective of an ECE workforce with an increasing proportion of migrant teachers. Thus, akin to children's identity and sense of belonging, teacher cultural identity and belonging could also be highlighted within *Te Whāriki* (MoE, 2017), the early learning curriculum framework.

Financial constraints, limited teacher-child ratios, lack of access to natural spaces, no transportation provisions, and limited or no orientation and access to Environmental and Sustainability Education experiences and programmes were cited as common structural barriers that impeded teachers' pedagogical aspirations and capacities to facilitate children's engagement and experiences with nature. While the teachers from the not-for-profit community setting and the kindergarten did not have such experiences, these issues were commonly shared by teacher participants who worked in the majority of private/corporate-owned ECE services. These findings highlight the disparity between different types of ECE settings, which directly impacts the extent to which Environmental and Sustainability Education can be included and encouraged within that setting. Therefore, this disparity can and must be addressed at the policy level where the regulation and funding of ECE service providers requires monitoring and regulation. These policy provisions could ensure more equitable conditions that could ensure the inclusion and provision of Environmental and Sustainability Education for all ECE settings. Equitable conditions across ECE settings is one way to ensure that access and opportunities for environmental interactions and learning become rights for all children rather than a privilege for a few.

6.5.2. Implications and Recommendations for Practice

The teachers worked towards sustaining their home cultural context while becoming acculturated into their host cultural context. This co-existence and healthy balance of dual cultural identities might be facilitated by the conscious inclusion and encouragement of

migrant teacher identities within the ECE context. The perceived cultural connections and shared cultural values could provide ideal spaces to facilitate the inclusion and facilitation of migrant teachers' cultural and environmental identities. They could also become sites for cultural exchange where teachers from diverse cultures can share knowledge, information, and unique perspectives to enrich the ECE environmental and sustainability context.

The recognition and inclusion of teachers' cultural identities has implications for children's cultural identities and sense of belonging where teachers and children both feel confident and encouraged to bring their culturally-oriented environmental identities as strengths to the ECE contexts. As is also evident in the discussion of the findings, managers/head teachers play an important role in this regard. Reorienting ECE managers/head teachers through cultural development and inclusion programmes might provide the impetus and conditions to ensure that cultural and environmental identity development and sustenance for migrant teachers and children occurs.

The findings from this study have implications for migrant teachers as they transition from their home cultural context to the host cultural context where the natural environment has a different meaning and relevance in the two ecological systems or sociospheres. Considering that the natural environment is understood to be a significant element of the Aotearoa New Zealand identity and the ECE curriculum framework, migrant teachers are required to add this dimension to their developing or transitioning host cultural identities, environmental identities, and teaching philosophies. It would benefit the broader ECE sector to learn more about this transition process for migrant teachers so that their transitions can be supported, which would in turn facilitate children's environmental identity development.

ECE managers/head teachers play a crucial role, and their Environmental and Sustainability Education philosophies and practices could also be facilitated through additional professional learning and development. They can be provided opportunities to learn more about and experience such programmes that they are then required to include within their settings through a nature-based curriculum, orientation of teachers and parents, and support from the Ministry of Education and other concerned or designated organisations.

Considering that migrant teachers might not have had environmental and sustainability experiences in their home cultural context, professional development programmes and

opportunities focussed on Environmental and Sustainability Education might be beneficial. They would enable migrant teachers to get an orientation to Environmental and Sustainability Education in ECE, Environmental and Sustainability Education programmes and practices, ways to include Environmental and Sustainability Education into their daily practice, related policies, programmes, and resources. Teachers could also benefit from hands-on experiences in the local natural environment and from workshops about Environmental and Sustainability Education learning experiences that they might include in their settings.

However, all the above recommendations are made with the awareness that the ECE sector is currently facing numerous challenges that create barriers to implementing the recommended changes. Common concerns for the teacher participants and some managers/head teachers appeared to be financial constraints, inadequate teacher-child ratios, limited/no access to natural outdoor spaces, minimal or no natural spaces within the setting, logistical challenges for outdoor nature-based field trips such as lack of transportation, access to information and awareness about Environmental and Sustainability Education programmes and learning experiences. These barriers could be addressed to facilitate the implementation of Environmental and Sustainability Education within the ECE settings.

6.5.3. Implications and Recommendations for Further Research

A significant finding that emerged from the study is the spiritual connections that Indian teacher participants made between their home and host cultural identities as well as their cultural and environmental identities as they transitioned into and practised in the Aotearoa New Zealand ECE context. Indian and Eastern philosophies reflected through their cultural and environmental funds of identity seemed to play a significant role in how the teachers perceived, formed, and voiced these connections. A deeper understanding of this process was beyond the scope of this study but would be an interesting and valuable subject to explore in the future.

The findings of the study indicate that migrant teachers' cultural transitions and teaching philosophies are rooted in and influenced by their home cultural identities and philosophies. Hence, a deeper understanding of these underlying cultural identities and the values and philosophies that underpin them would be beneficial to study for other migrant teachers from diverse cultures that transition into the Aotearoa New Zealand context.

Most teacher participants' experiences in and with the natural environment within their home cultural context were based on their personal and home experiences in early childhood. Yet, their environmental identity transitions and experiences in Aotearoa New Zealand were considerably influenced by their professional ECE contexts as well. Thus, it is important to know more about the kind of transitions their environmental identities undergo from their home cultural context to the host cultural context. With limited or no environmental and sustainability experiences, yet with vivid memories of environmental connections in childhood, it is important to consider how migrant Indian teachers prepare to take up Environmental and Sustainability Education and include notions of *kaitiakitanga* as expressed in *Te Whāriki* (MoE, 2017) and in Aotearoa New Zealand ECE settings. An ethnographic study would enable an immersive investigation of the process and experiences of migrant teachers to explore how they interpret and implement ideas of *kaitiakitanga* and Environmental and Sustainability Education as they transition from ITE programmes to ECE settings. A longitudinal study could provide an insight into the cultural and environmental identity transitions of migrant teachers since the time they transition into their first ECE setting to a year or more after their transition.

The ECE settings and manager/head teacher support were found to be major determinants of migrant Indian teachers' cultural and environmental identity transitions, and inclusion, within their early learning services. A case study approach could be used to explore the inclusion and implementation of Environmental and Sustainability Education in a variety of services or settings as cases. This could provide a detailed picture of the possible barriers and enablers experienced by migrant teachers and the strategies to overcome these challenges. Alternatively, an interpretivist study focused on managers/head teachers of ECE settings could also provide insight into their perceptions of migrant teachers' cultural and environmental identity transitions.

The Indian teacher participants shared that the bulk of their understanding and learning about Environmental and Sustainability Education within early learning in Aotearoa New Zealand, emerged from their professional experiences and exchanges with other colleagues. Hence, an aspect worth exploring would be how collaborative learning in teaching teams enables migrant teachers' environmental identity development and/or transitions and awareness of Environmental and Sustainability Education and its inclusion in ECE.

Action research can be designed to initiate and evaluate a support system for migrant teachers in the form of collaborative teaching groups (within or across cultural groups) to share their cultural and environmental identity transitions. These groups could be formed across settings within one early learning organisation or across learning organisations and types of early learning services as well. This could also be explored as a platform to share their cultural funds of identity specifically with respect to Environmental and Sustainability Education.

Significant connections between cultural and environmental identities of migrant Indian teachers influence their teaching practice. This research can be used as a model to design and conduct further research within other groups of migrant teachers from the same country or across groups of migrant teachers from diverse countries. Such a study would be designed keeping in mind the specific context such as the type of early learning service/organisation and location. A similar study could also be designed for within a particular type of early learning service, or across all the various types of early learning services to represent each type. This would help develop a picture of kinds of Environmental and Sustainability Education programmes within and across early learning services and identify the strengths and challenges for migrant teachers and services in the process.

Cultural identity appears to be intricately linked to environmental identity for migrant teachers. These connections were impacted by their teaching qualifications and the learning experiences these qualifications could or could not provide, specifically with reference to opportunities to explore their cultural and environmental identities, the interconnectedness of the two, the links to the curriculum framework, and the influence on their professional practice. Thus, future research could explore the content of various ECE ITE programmes concerning the Environmental and Sustainability Education components and how this engages the sociocultural aspects of the early learning curriculum framework *Te Whāriki* as well as the diverse sociocultural identities of student teachers.

6.6. Concluding Thoughts

An exploration of my own culturally-oriented environmental identity led me to this journey. The study was an exploration of the cultural and environmental identity transitions of one of the fastest growing groups of migrant teachers, like me, in an increasingly multicultural Aotearoa New Zealand ECE context. The aim was to interpret migrant Indian teachers'

perceptions of the influence of cultural identity on their environmental identities and how this influences their practice in Aotearoa New Zealand ECE. The findings showed that the migrant Indian teachers tapped into their cultural and environmental funds of identity to enable their cultural and environmental identity transitions from their home cultural context to their host cultural context. The teachers made connections between their cultural identity, environmental identity and te ao Māori (the Māori world), enabling their transition and acculturation into the host cultural system. The ECE setting context and the respective leadership appeared to play a significant role in facilitating migrant Indian teachers' identity transitions. Favourable ECE contexts and support from leadership enabled the teachers to bring their cultural and environmental identities into their ECE settings to enrich the Environmental and Sustainability Education curriculum provisions. Opportunities to explore and further develop their own culturally-oriented environmental identities would play an important role in teachers' abilities to facilitate children's cultural and environmental identity development within the Aotearoa New Zealand ECE context. These processes could further contribute to the rekindling of the human-environment relationship, the very premise of this study, bringing this piece of work full circle to where it began as an endeavour to 'be here together' with our interconnected earth family in our shared oīkos.

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Appendices

Appendix A: Interview Schedule for Teachers

Background information

Name:

ECE setting:

Age bracket: (20-30) (31-40) (41-50) (51-60)

Educational qualifications:

Current study if any:

Years of ECE teaching experience in India:

Years of ECE teaching experience in Aotearoa New Zealand:

Years of teaching experience at the current kindergarten/centre:

Other work experiences (job title and duration):

Years of residence in Aotearoa New Zealand:

Please note: Environment here refers to the natural environment.

Rapport building leading into ECE teaching experience.

1. How was your day today?
 - Teaching at the centre/kindergarten
 - Time spent outdoors at the centre/kindergarten
2. What do you like the most about your day at the centre/kindergarten? What is your favourite time/part of the day?
3. Do you like spending time outdoors/in nature with the children? Why/why not?
 - Comfort with the environmental aspects
 - Strengths and challenges
4. Do you think it is important for children to be in nature and interact with the environment? Why is that?
 - Character building/identity/holistic development/citizenship
5. How do you include the natural environment in the centre's learning experiences?
 - Time spent outdoors at the centre/kindergarten
 - Natural resources/sustainable practices
 - Frequency of field trips/excursions
 - How do you feel about these trips – purpose/need/value?
6. Are you aware of any environmental programs in NZ ECE? How do you know about these?
7. Do you think *Te Whāriki* talks about the natural environment in ECE? How?
8. According to you, what are the main goals of ECE?
9. What is most important for children at this stage of development?

10. As you mentioned, you were teaching in India for some years. How was that experience for you?
11. How do you think working in ECE in NZ is similar and/or different? Could you talk about the experiences that have been new for you?
 - Focus; curriculum/routines/rhythms, teaching practices, resources.
 - Natural/environmental spaces/facilities/environmental practices/field trips/nature visits.

Personal background/experiences

12. Do you recall your early years in India? Can you talk a little about your childhood there?
 - Place of residence
 - Personal/educational early childhood experiences
 - Family activities
 - Access to/time spent in natural spaces
13. How would you describe the natural environment or nature?
14. Do you believe you have a relationship/association with the natural environment? Why? How would you describe that?
 - Experiences/interactions with the natural environment

Identity

15. Being an Indian born person, how would you define an Indian identity in general?
 - Important features - values, cultural beliefs.
16. Since you have lived in NZ for a few/significant number of years, how would you describe a Kiwi identity in general?
 - Important features - values, cultural beliefs.
 - Why do you say this?
17. Do you think your Indian identity; Indian cultural beliefs affect your teaching ideas and current practice in NZ ECE?
 - Learning Stories?
 - Suggestions/support/help/preparation

Any further comments you wish to make regarding your ECE practices that are a reflection of your cultural identity; especially related to the natural environment?

Appendix B: Interview Schedule for Managers/Head Teachers

Background information

Name:

ECE setting:

Educational qualifications:

Current study if any:

Years of ECE teaching experience in Aotearoa New Zealand:

Duration at the current setting:

Rapport building leading into ECE experiences.

1. How is your day going today?
 - Time spent with the children.
 - Any special learning experiences?
2. Could you tell me a bit about your background as an ECE teacher/head teacher/centre manager at this centre/kindergarten and elsewhere?
 - Nature of centres
 - Roles and responsibilities
3. How would you describe your professional philosophy as a head teacher/centre manager?
4. How would you describe the centre's/kindergarten's vision and goals?
 - What is important for the centre/kindergarten to accomplish?
 - How are these goals reflected in the centre's/kindergarten's daily practices?
5. What is the centre's/kindergarten's philosophy regarding the outdoors and the natural environment?
 - How is that implemented in daily practice?
 - Nature visits/field trips?
6. Do you consider it important for children to interact with/be in the natural environment? Why do you believe that and include it in the curriculum/goals/philosophy?

Appendix C: ECE Settings Observation Guide

ECE setting:

Date:

Time:

Indoor spaces

- Number and types of rooms
- Books/Reading Material (environment/nature themed books)
- Nature-themed spaces/corner/table
- Natural/environmental displays
- Natural resources/furniture/material (art and craft resources etc.)

Outdoor spaces

- Approximate time spent outdoors daily.
- Size
- Equipment (swings, slides)
- Daily set up of the space (natural material/resources)
- Sand pit
- Water play area/source/access
- Trees//flora/garden/green spaces
- Material/resources in all outdoor spaces
- Kind of outdoor learning experiences: gardening/water play
- Physical space: natural grass, artificial turf, bark bed, concrete.
- Vegetable garden/patch
- Sustainability practices (composting/gardening/recycling)
- Creature/Insect/bug space/habitat
- Weather policy (all weather policy?)
- Any animals within the setting

- Enviroschools association/related learning experiences

Appendix D: University of Waikato Division of Education Ethics Approval

Te Kura Toi Tangata
Division of Education
The University of Waikato
Private Bag 3105
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18/11/2019

Dear Devika Rathore

Division of Education Ethics Application Approved FEDU084/19

I am pleased to advise you that your ethics application for the project entitled "Indian early childhood teachers' environmental identity in New Zealand education." was approved by Te Kura Toi Tangata Division of Education Ethics Committee on November 18th, 2019.

Please be aware that the Te Kura Toi Tangata Division of Education Ethics Committee must be advised (by memo) of any changes to the details recorded in your ethics application. Please send any such advice to fedu.ethics@waikato.ac.nz. You will receive a memo of approval once the change(s) has been considered.

Kind regards

Co-chair

Te Kura Toi Tangata Division of Education Ethics Committee