



A Framework for Successful Environmental Education

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August 2023

Summary

In the second half of the 20th century, warnings regarding the degradation of our environment began to emerge and escalate in their frequency. Various conferences surfaced to discuss and to tackle the rising issues from different angles, and towards the end of the century education was likewise given importance in this battle towards sustainability. From 1977 onwards, following the first conference on environmental education, although progress was made on paper, there have not been significant results in action. Likewise, within academia, environmental education is gradually gaining value, but here too there is a long way to go.

This research aimed to contribute to these developments by expanding the literature on environmental education through research into alternative pedagogies. The research helped formulate a conceptual framework to measure effective environmental education under the name: Conscious and Critical Environmental Education (CCEE). By focusing on an existing alternative pedagogic approach, it answers the following question: *To what extent does the Waldorf pedagogic approach embody features of critical and conscious environmental education as presented within the CCEE framework?*

To achieve this, first an in-depth literature review was carried out to gain an understanding of what is already known within the field of environmental education. Using the gathered information, a conceptual framework was created to propose what critical and conscious environmental education should entail. To observe the prevalence of the framework within Waldorf school settings, interviews were conducted with teachers from two Waldorf schools, one in Brasil, and one in the United Kingdom.

What was found is that indeed all elements of the proposed framework are prevalent within the Waldorf methodology and actively incorporated by all teachers. As such, effective environmental education (as proposed by the framework) is a reality in the schools, both in the United Kingdom and in Brasil. While there were differences found in the implementation, the intentions within both schools are shared and it may be that the variations are rather caused by external factors such as geographical locations. The effects of the education on the lives of students in the long term suggest too that the method promotes conscious and critical thinking of reality and oneself, which in turn can be said to benefit societies on a general scale.

The research demonstrated the effect which educational methods can have on students and effectively on the society they live in. Still more research on environmental education and particularly on pedagogic methodologies around the world is necessary so that an understanding can be formed of what works, as well as which shifts need to take place.

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1. Introduction

1.1 Research statement

The first UN conference to address climate change and environmental issues internationally was the 1972 Conference on Human Environment held in Stockholm:

“To achieve this environmental goal will demand the acceptance of responsibility by citizens and communities and by enterprises and institutions at every level, all sharing equitably in common efforts.” (United Nations, 1973, p. 3)

Such international conferences became an increasingly frequent occurrence and began to expand in the environmental focuses they embraced. In fact, just recently the 26th United Nations Climate Conference, commonly known as COP26, was held in Glasgow. After two weeks of negotiations, it was closed with a final agreement, signed by 197 countries with yet another promise to commit to the effort to tackle the global climate change (UNFCCC, 2021). Here we are, decades since the first conference, continuing to formulate and develop the targets necessary to achieve the wide array of environmental goals, but where is the action?

Undoubtably the issue is multifaceted and extremely complex. With every new conference and summit, new targets, new measures, and new spheres enter the debate.

A pivotal moment in this continuing process was the realisation that “education is an indispensable element for achieving sustainable development” (United Nation, 2005, p. 2). After some years of preparation, in 1977 in Tbilisi, the first intergovernmental conference on Environmental Education was held, organized by UNESCO (United Nations Education, Scientific, and Cultural Organization) in cooperation with UNEP (United Nations Environment Programme) (Fensham, 1978). This marked the beginning of the global recognition of the importance of environmental education, after which international conferences on the topic became frequent in the decades to follow and to this day. Despite the growing importance of environmental education, a key concern emerged after 1987, when the term was changed to Education for Sustainable Development at the World Commission on Environment and Development (Jickling and Wals, 2008). Among scholars such as Dobson (1996) and Hopwood (2005) the term sustainable

development was critiqued for its emphasis on economic growth and development, factors believed to be key causes of environmental problems.

Within the field of environmental education this sparked debates and a multitude of perspectives. When an international online debate on the topic of Education for Sustainable Development (the ESDebate) was held, with experts from 25 different countries, one point was generally agreed upon; if sustainable development were to be prioritised in education, this would create an environment in which students would not have space for reflective and individual thinking, as well as for exploration of alternative pathways and solutions towards problems (Hesselink et al. 2000). Sustainable development is a widely accepted term, but its underlying notions, meanings and values have been considered to lack critical exploration or explicit international consensus (Robinson, 2004). These concerns, and the general emphasis of sustainable development on growth, likewise spread to the field of environmental education, where, effectively, focus began to be placed upon promoting Education for Sustainable Development, setting standards, and creating mechanisms through which to assess its progress (Jickling and Wals, 2008).

Bearing this in mind, although environmental education has been on the international radar for several decades, it is essential to be critical and to question the ways in which it has been developed in line with sustainability, and the extent to which environmental concerns and strives for progress have found their way successfully into school settings worldwide. Taking into consideration the point made about ‘sustainable development’, this investigation will refer to the topic under discussion using the term ‘environmental education’.

Scholars, such as Freire (1994), have written extensively about education as we know it and the ways in which the conventional pedagogic approach acts as a barrier to teaching young individuals to become conscious, critical, and autonomous. Considering these factors are important when thinking about creative solutions and building a sustainable future, it seems appropriate to question whether there could be useful insights within alternative pedagogy methods in terms of successful environmental education. A pedagogic method of particular interest in this sense is the Waldorf Education (also known as the Steiner Education). Created by Rudolf Steiner, the pedagogic approach has existed for around a century with an increasing presence all over the world applied in different cultural and social contexts (Stehlik, 2019). It revolves greatly around inspiring young individuals, especially by encouraging their natural creativity, curiosity, and motivation to

learn, doing so in a holistic and supportive manner, in which independence is greatly emphasized (Stehlik, 2019). Mazzone describes the nature of this education in the following way:

“Waldorf education aims to lay the groundwork for the development of a healthy soul-life, characterised by creativity in thinking, a feeling for morality, and willingness to be a socially responsible member of the community, or in Steiner’s own words: ‘The need for imagination, a sense of truth and a feeling of responsibility—these are the three forces which are the very nerve of education’” (Mazzone, 1995, p. 5).

With these values being at the core of the Waldorf pedagogy, it seems that an investigation into their commitments to the environment seems to be an appropriate starting point in understanding in what ways there may, or may not, already be effective environmental education in certain school environments.

1.2 Research Aim and Questions

The motivation for conducting this research developed from an internship opportunity with Wigrow, a UK based charity aiming to provide disadvantaged children in Uganda with an education. Hoping to develop a strong sense of sustainability among the children, I was assigned to lead one of the projects which revolved around integrating environmental education into the Good Shepherd School, one of the partner schools of Wigrow.

Hence, to visualise which tools and resources will be essential to guide the project to its goal, along with any other future projects implementing environmental education, in-depth investigation is necessary, looking into which pedagogical characteristics may be of benefit in the drive to sustainability. Thus, the aim of this research will be to identify tools and resources that are essential to implement environmental education. For that, based on an in-depth literature review, a conceptual framework will be created to analyse what critical and conscious environmental education entails. The framework will then be applied as a lens to analyse the Waldorf pedagogic method. The research will have an exploratory nature focusing its analysis on two Waldorf schools in different locations in the world (Brasil and the United Kingdom). Social theories will be consulted and used in the process from various fields of study, including pedagogy,

psychology and sociology. With a hope to contribute to the global goals of achieving sustainability, in this case through education, this research will aim to answer the following research question:

RQ: To what extent does the Waldorf pedagogic approach embody features of critical and conscious environmental education as presented within the CCEE framework?

Note: CCEE is an abbreviation for critical, conscious environmental education

To aid the process of finding an answer to the overarching main question, several sub-questions will be addressed throughout the investigation:

1. Which qualitative indicators determine what critical and conscious environmental education should entail?
2. To what extent do the theoretical indicators of critical and conscious environmental education (from the CCEE framework) and the methods applied within Waldorf schools correspond?
3. Does the prevalence of these indicators in the Waldorf method generate productive long-term results?

1.3 Scientific and Societal Relevance

In the following paragraphs, the relevance of this research will be discussed. Firstly, the scientific relevance will be examined to indicate in what ways the investigation would add to existing academic literature. The second section will then present the societal relevance of the topic, namely how it is of importance to our societies.

1.3.1 Scientific Relevance

Environmental Education is nothing new and has continuously been critically reviewed not just by intergovernmental organizations such as the United Nations, but likewise by educators themselves, and academics studying it. There is a wide range of focuses, rooted in different disciplines, which have been taken on in research. A great deal of literature has delved into psychological and learning

theories to understand their potential in enhancing or contributing to environmental education (see Koutsoukos et al., 2015; Ata, 2018; D'Amato & Krasny, 2011). Others have looked at specific behaviours and how environmental education can shift them to becoming more sustainable (see McGregor, 2009). Additionally, there have been empirical studies conducted to investigate how particular schools promote sustainability using distinct factors of influence, as was done in the case of the Green School Bali, for example (see Alimin et al., 2021). The literature is vast, and most definitely covers a wide range of matters. Bearing this in mind, there does not seem to be many empirical studies around the Waldorf education method in relation to environmental topics. Considering their worldwide presence, and unconventional ways of teaching, it seems suitable to investigate whether these successfully contribute to sustainability, especially since it may also become appropriate for more schools to begin adopting the Waldorf method of teaching.

1.3.2 Societal Relevance

At the COP21, held in 2015 in Paris, an agreement was made by all countries to maintain the global average temperature at a maximum of 1.5-degrees Celsius above pre-industrial temperatures (UNFCCC, 2015). Leading up to the COP26, it became evident that targets of the Paris agreement were not being met and that global temperatures continue to approach a dangerous tipping point, beyond which the environmental destruction will increase very drastically (Biol, 2021). There has never been a more urgent need for transformative change in all sectors and institutions of society. Considering that educational environments comprise an integral factor in the development of children, it is crucial to direct a fair amount of attention to developing future agents of sustainability and transformative change. Currently trends in environmental education seem to take on the nature of evolving from policy to innovation, meaning that policies are developed and integrated through the use of logic and reason, and are then put into action (Jickling and Wals, 2008). The drawback here is that solution-oriented policies are put into place to direct innovation, when in theory it would be more efficient for innovation strategies to go through a series of trial and error – to understand what work most optimally – after which policies can be implemented in line with that. With the need for action being higher than ever, and only continuing to grow, contributing to the literature on how to achieve effective environmental education is of utmost importance. Only as such will be able to educate the future generations to be conscious and critical

citizens who understand their position in the world, how they may be impacting the environment around them, and who consequently take action in mitigating climate change.

2. Literature Review and Theoretical Framework

2.1 Literature Review

The literature review presented below is of extensive nature for the purpose of generating a broad and in-depth understanding of the entire existing discourse on the topic. A historic overview of environmental education and an explanation of the shift from environmental education to education for sustainable development will be provided to shape an understanding of the conceptualisations the topic has on global/international and academic agendas. This is of significance to provide context by both presenting information, as well as expressing which elements of this information have been chosen and prioritised, and why. With the constructed lens, a literature review of existing research on environmental education will then be put forward. Lastly, the Waldorf method will be discussed. With consideration of all of the discussed elements in the literature review, a carefully formulated theoretical framework will be written out in the section to follow (section 2.2).

2.1.1 Historic Overview of Environmental Education

As aforementioned, the 1972 conference in Stockholm marked the beginning of environmental concerns entering the international debate (United Nations, 1983). Following the conference, there was a gradual development of events related to what became recognized as Environmental Education (from here on EE). Towards the end of 1972, after the UNEP had been set up and was receiving allocated funds to conduct projects concerning environmental issues, UNESCO was asked to develop and encourage EE together with UNEP on an international level (Fensham, 1978). In 1974, the first UNESCO and UNEP programme began (Fensham, 1978). Consequently, as has been previously mentioned, in 1977 UNESCO and UNEP held the first Intergovernmental Panel on Environmental Education in Tbilisi (ibid.).

In the years to follow, international conferences regarding the environment became more frequent, and the relevance of EE continued to increase. A major evolution, however, was the shift from what was known as Environmental Education to Education for Sustainable Development (from here on ESD). This shift was launched in 1987 by the World Commission on Environment and Development, after which it was driven further in 1992 at the World Conference on Environment and Development in Rio de Janeiro (Jickling and Wals, 2008). The switch from EE to ESD was greatly emphasized in these conferences, as well as others, which led to the launch of the Decade for Sustainable Development (from 2005-2014) at the World Summit on Sustainable Development in Johannesburg in 2002 (Jickling and Wals, 2008).

Although a change in terminology may appear to be of minimal importance, there have been concerns surrounding its implications, which have been discussed in section 1.1. This point will be deconstructed slightly further to help provide an understanding of how education can be, and is, contextualised in different ways. The reason for this is that it will help shed a light upon the ways in which some conceptualisations may be more relevant when addressing EE in this study.

2.1.2 A Shift from Environmental Education to Education for Sustainable Development

As has already been stated, within the social sciences, in the debate of whether sustainable development or sustainability is the correct term to use, sustainable development is primarily seen as an anthropocentric concept; a concept in which the role of economic growth and development is greatly emphasized (Dobson, 1996; Hopwood et al., 2005; Robinson, 2004). In line with this, within EE, Jickling and Wals (2008) discuss this emphasis on ESD to be a result of globalization and the spread of neo-liberalism. According to them, globalization both reinforces the tendencies of neoliberalist thinking within education, as well as allows EE to be largely and predominantly influenced by large international organizations such as UNESCO, the World Bank, and the World Trade Organization (2008). Some believe that this results in pressure being placed upon environmental education to work in line with an ESD and generally neoliberalist agenda (Jickling and Wals, 2008). Others consider the benefits of globalization on education (see Wells et al., 1998; Waks, 2003). Waks (2003) especially highlights the fundamental educational changes the process

of globalization can enable in terms of instruction methods, utilization of technology, subject-matter selection among other elements.

To reiterate: how EE is discussed and applied depends to a great extent upon how education is conceptualized, and by whom, and for what purposes. The scholars Jickling and Wals (2008) make a distinction between education which is transmissive versus education which is transformative. Transmissive education is a process in which facts and skills are transmitted to students, meaning that learning is a one-directional and fairly closed process relating largely to notions of efficiency and reproduction of information (ibid.). Alternatively transformative education revolves around co-creation of knowledge, considering previous knowledge and cultural experiences, and allowing for self-determination and autonomy of students (ibid.)

This comparison is largely in line with Freire's understanding of education, expressed in his book: *Pedagogy of the Oppressed* (1996), where he distinguishes it into what he calls 'banking education' and 'problem-posing education'. The idea of banking education is found frequently in school systems, and much like transmissive education is a process in which students are passive listening objects of active teachers, making the learning relationship narrative (Freire, 1996). This results in mechanical memorization where students are simply receivers and storers of information (ibid.). Problem-posing education is similar to transformative education and is a process in which humans and reality are understood as being an ongoing process, meaning they are always incomplete, and ever-evolving (ibid.). As a result, there is always room to explore new pathways, apply creativity in understanding the given reality and a presence of an environment in which students and teachers engage in learning cooperatively (ibid.).

This investigation will have its foundation within the conceptualization of education as something transformative and of a problem-posing nature, since the creativity and solution-generating thinking it encourages may be highly beneficial in the field of sustainability and environmental concerns. Keeping this conceptualisation in mind, the following section will examine the research which has been conducted on EE specifically to form a knowledge base of the learning methods or theories of education which will be relevant and useful.

2.1.3 Existing Literature on Environmental Education

Learning generally consists of “acquiring or changing knowledge, skills, strategies, beliefs, attitudes and behaviours” (Ata, 2018, p.54). Over the course of the last decades many theories, particularly in Psychology, have emerged and been studied in various forms to understand learning processes. Some of these include theories of behavioural learning, social learning, information processing, experiential learning, transformational learning, among others (Ata, 2018). Through extensive studies, a wide range of useful and insightful focuses or elements from these theories have become important reference points for the study of EE (see, Moseley et al. 2019; Pinho et al. 2020; McGregor, 2009; Koutsoukos et al., 2015). Nevertheless, an issue which remains, is that the application and use of the theories do not frequently extend past the research, and as such, environmental education continues to be taken on in a predominantly conventional manner, what was previously described as transmissive or banking education (Ata, 2018).

The focus of environmental education should be to promote environmental knowledge in a way which will influence behavioural change (Pooley and O’Connor, 2000). To induce such behavioural change environmental education needs to be a dynamic process, one which enables personal development, critical thinking, and experiential learning (Koutsoukos et al., 2015). According to Wilson (2009), to raise awareness about the environment most efficiently, this should be introduced from early childhood.

These ideas are underpinned by other scholars who point out that the outcomes from transformative, social, and experiential learning increase student interest in outdoor recreation and learning about nature, and furthermore, generate positive attitudes and commitments to the environment and its conservation (Kellert, 1998). Ata (2018) reinforces this, suggesting that children gain the most environmental knowledge in activities such as games, hiking, fishing, picking fruits, and more, particularly when in accompaniment of role models. Williams and Brown (2012) likewise advocate for the implementation of places in which pupils can engage directly with sustainability at school, such as a school garden. Indeed, it is important to keep in mind that children are active learners, and as such, that using a garden as an “alternative model for learning about plants and human relations with them” (Pierce, 2015, p.463) could be greatly beneficial for their learning experiences.

In a study conducted by D'Amato and Krasny (2011), participants who had taken part in Outdoor Adventure Education (OAE) programs were interviewed to form an idea of their experiences and the changes the programs had led them to experience. OAE programs refer to trips which consist of full submersion in nature, where individuals sleep outdoors, navigate themselves, and cook their food from scratch (D'Amato and Krasny, 2011). What the researchers found is that among most participants the following trends were present: an increase in psychological well-being, being part of a community, expressing that the connection to nature led them to want to conserve it, inspiration and awe, as well as more (ibid.). Evidently, the submersion had beneficial effects in multifaceted ways. Schusler and Krasny (2010) also encourage such experiential and transformative learning, pointing out that it promotes positive development for the youth socially, physically, psychologically, and intellectually, to which Martin and Leberman (2005) add that it increases confidence, self-awareness, and respect for others.

These resulting qualities and competences relate to what Sterling (2010) coined as 'the resilient learner'. He refers to environmental education which focuses on the acquisition of skills (e.g., social competence), and personal growth (e.g., sense of purpose) needed for healthy life development (ibid.). Wals and colleagues (2008) bring forward two other types; the emancipatory environmental education, which relates to engaging pupils in active dialogue to help them generate plans and goals for action; and there is instrumental environmental education, which aims to change pre-learning behaviours.

Environmental education of such nature may be highly useful, especially in educating long-term agents of change. To consider sustainable behaviour not as a goal, but rather a lifelong pursuit, a successful education will "involve[s] the development of learners' abilities to make sound choices in the face of uncertainty and complexity of the future" (Scott and Vare, 2008, p. 3). Coming back to the methods of achieving this, Markaki (2014) adds that to help students understand such real-world problems and navigate them better, methods like case studies, experiments, excursion, role playing, and other active learning techniques will be most helpful.

However, despite these advancements in research, what is currently the case is that the base for EE set forward internationally by UNESCO continues to be too vague to deem effective (Sterling, 2010). Framed as ESD the emphasis remains behaviourist and instrumental and mostly oriented to a goal or a destination rather than a mentality or lifestyle. The drive forward will require creativity, problems solving and attitude changes, something which can be developed with the help

of “learning by doing” (Koutsoukos et al. 2015). The theories briefly mentioned in this section carry a lot of potential for EE, and will be elaborated upon in detail in section 2.2.

Before delving into the theoretical frameworks in more detail, the Waldorf approach will be discussed in somewhat more depth in the next section, to provide an awareness of the reasons behind choosing this pedagogy, and why there may be a potential in analysing it through the theoretical frameworks chosen.

2.1.4 Waldorf Education

The Waldorf pedagogy method was developed by Rudolf Steiner in 1919, which was also when the first Waldorf school was opened (Stehlik, 2019). While Steiner generally considered the existing formal methods of teaching at the time, his method stretched further by extending towards “esoteric and complex theories on human consciousness, development and relationships that underpin what he termed the ‘hidden curriculum’” (Stehlik, 2019, p. 25).

Easton (1997) puts together a straightforward list of fundamental elements in the Waldorf method which create the basis of the approach. They are the following:

- (a) A theory of child development
- (b) A theory of teacher self-development
- (c) A core curriculum that integrates artistic and academic work
- (d) A method of teaching as an art that pays careful attention to synchronizing teaching methods with the rhythms of the child’s unfolding capacities
- (e) Integration of teaching and administration
- (f) Building the school and the great Waldorf community as networks of support for students, teachers and parents

(Easton, 1997, p. 88)

The theory of child development (point (a)) relates to the idea that every child is an individual made up of three components: body, soul, and spirit. Furthermore, educational practices, are divided into 7-year intervals relating to the children’s development; “the preschool years (0-7), the elementary school years (7-14), and the adolescent years (14-21)” (Easton, 1997, pp. 88). Effectively, within the first stage, elements such as imitation and play are prioritized, while in the

last stage with the development of abstract thinking, students are encouraged to make judgements about subjects, ideas, and reality and what is meaningful to them (Steiner, 1965). Regarding point (b), teachers traditionally remain with the same class throughout their elementary years, up until 8th grade, which allows for trust and continuity, but also for teachers to engage in own development (Steiner, 1965).

The curriculum integrates artistic features in academic format through the visual, musical and tactile elements of art that it integrates within all subjects and throughout the years until high school. This takes on the form of using poems and storytelling within classes like history and languages, or using art and nature to guide understandings of geometry through objects like spiderwebs and snail shells (Easton, 1997). These are a couple brief examples of the many methods applied, but the main takeaway is that practices are used to “deepen intellectual experiences with images, sounds, and textures that stimulate the sense, enrich feelings, and discipline activity” (Easton, 1997, p. 90) (point (c)). In a similar manner, the method of teaching is encouraged to be an art, placing a lot of emphasis on how material is delivered and advocating to create beauty in the classroom, so that the environment is both healthy and enables growth and nurture (Steiner, 1965). Using rhythms, storytelling, music is a standard practice and allows for harmony in the teaching method, in transitions, but especially in helping keep children engaged (Stehlik, 2019) (point (d)).

The last two points put forward by Easton (1997) relate more to how Waldorf schools are administered, with point (e) relating to the idea that leadership in schools tends to be shared by the entire faculty, where a steering committee of teachers with a head teacher is chosen, but also re-evaluated when circumstances require. The community which the schools build and encourage is something which both occurs at the level of individual schools, but likewise on a global scale. The general intimacy shared within the schools provides comfort and well-being for students, teachers and parents. Furthermore, the Waldorf community consisting of countless schools worldwide holds annual meetings and smaller gatherings in which teachers are able to build support networks and share insights and tools that could benefit the teaching and learning processes (Stehlik, 2019). Referred to as the International Forum for Steiner Waldorf Education, the community likewise ensures that the method is applied appropriately and that it is implemented in accordance with cultural, political, and geographical contexts (Stehlik, 2019).

The description provided of the Waldorf method has been gathered using academic resources and is solely to provide a general idea and introduction to the pedagogy. The true nature and everyday application of the method will be explored and presented using the data gathered.

2.2 Theoretical Frameworks

2.2.1 Experiential Learning Theory

The Experiential Learning theory (ELT) comes from sociocultural constructivism in which learning is seen as an interaction between individuals and their environments (Kolb, and Kolb 2005). The theory was developed by Kolb (1984) and relates to the idea of learning by doing, specifically the “process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (p. 41). It is a holistic process through which individuals experience the real world, and with it learn to adapt to it, acquiring creativity, problem solving skills and attitude changes (Moseley et al. 2020).

A crucial emphasis of this theory lies in the active role given to the students, something Smart and Csapo (2007) believe largely optimizes the learning process. In this method of learning there is a four-stage cycle proposed by Kolb: concrete experience, reflective observation, abstract conceptualization, and active experimentation (McCarthy, 2010). Concrete experience refers to the act of seeing or experiencing new information concretely using one’s senses; reflective observation relates to the reflection and discussion which the learner undertakes internally or with their peers about the information acquired; abstract conceptualization is the way that the information is integrated using modes of thinking and analysing to learn from it; lastly, active experimentation refers to the planning or trying out of new skills or knowledge in a similar or different situation (McCarthy, 2010). The cycle is not fixed and does not have to follow this order, and as such, learners can enter at any stage (Moseley et al., 2020). Furthermore, the strengths and motivations of learners may lie in varying stages, positioning them as different types of learners. As a consequence, the process of learning can be seen to be better at accommodating a wider range of students (figure 1 below demonstrates this coherently).

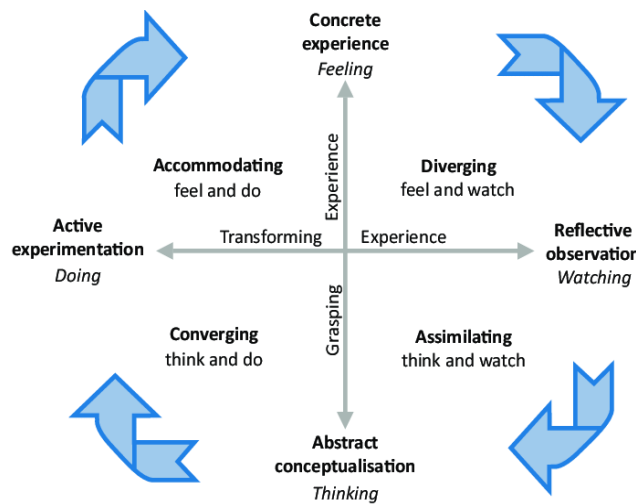


Figure 1: Diagram demonstrating the different stages of the experiential learning process (van der Horst, 2018).

Effectively, the use of experiential learning, such as outdoor trips or scavenger hunts, can allow students to experience the world outside the boundaries of a classroom, where engaging in active learning can expand and challenge pre-existing beliefs or ideas (Kolb, 1984). Some researchers (see Markaki, 2014; Kellert, 1998; Ata, 2018; Williams and Brown, 2012) stress the idea that the dynamic nature of this approach is highly beneficial for environmental education since students can interact with nature directly, using their senses, which allows for better integration of knowledge and more positive attitudes. Kotsova and Atasoy (2008) also underpin the usefulness of ELT, stressing that it can allow for environmental thinking and values to be integrated into everyday life, which Koutsoukos and colleagues (2015) further support.

Overall, the applicability of the theory in environmental education is already present and widely respected. Among the theories which will be presented in this section, ELT will act as the basis for the conceptual framework in this exploration. The diagram demonstrating the different stages will be used and further elaborated upon with the remaining theories to create the conceptual framework.

2.2.2 Freire's Pedagogy of the Oppressed

As was briefly touched upon already, Freire distinguishes conventional education, which he refers to as 'banking education', from the approach he encourages which he refers to as 'problem-posing

education'. According to Freire (1996) banking education revolves around students memorizing mechanically what is being narrated by teachers. As a result of such an approach lacking creativity and transformation, students not only become alienated but are deprived of their critical thinking abilities (Freire, 1996). Consequently, for Freire (1996), this method of education resembles the oppressive nature found in the world generally and promotes an idea in which humans are *in* the world, rather than *with* the world. The latter point is especially of importance when thinking about the environment and the conservation thereof. In that light, Freire (1996) points out that those who are truly committed to liberation (in this case the liberation of nature) will reject such conceptions and instead look to replace them by questioning and problem solving in the reality around them.

In line with this, Freire notes that education should: have a dialogical relationship between educators and learners, be co-intentional, involve critical thinking, and strive for social transformation (Shugurensky, 1998). By presenting students with problems and questions, they are pushed to be innovative and creative to find solutions (Freire, 2000). Freire's belief is that with the use of such methods, students should be encouraged to explore the possibilities of what it means to be a critical citizen who can think beyond the present moment (Giroux, 2010). This belief refers to what Freire calls conscientization and is greatly emphasized in his pedagogic approach. Conscientization conveys the idea of increasing consciousness and critical awareness of students, enabling them to think critically about reality, why it exists in the way that it does, and their position within it (Shugurensky, 1998). Inevitably, by inspiring students to become critical agents, human agency is encouraged (Giroux, 2010), which is of immense importance for social transformation, which in this case means creating and building sustainable futures.

Furthermore, the relationship of educators and learners deserves a great deal of attention. By emphasizing dialogue, these relationships can build trust and evolve, and by making the learning process co-intentional teachers and learners can simultaneously be both teachers and learners (Freire, 1996). In an arrangement of such kind, all parties involved are in constant a process of growth, but more importantly, what is being learned or taught is produced together. In this way, students are given an active role in their own learning and are able to directly engage in the reality which unfolds and is ever evolving around them. Freire (1996) proclaims this to be highly constructive since it results in education becoming an ongoing and evolving activity with transformational character.

With consideration of the abovementioned points and that the Pedagogy of the Oppressed was constructed to counter the same societal systems which perpetuate the oppression of the environment, an application of Freire's methods seems relevant in relation to EE.

2.2.3 Transformative Learning Theory

The transformative learning theory was put forward by Mezirov to propose how ways of thinking could be transformed through learning. Mezirov's (1997) approach starts from what he calls frames of reference. Frames of reference are one's thought patterns and mental structures; the concepts, values, feelings, conditioned responses or associations which one carries and through which one understand their experiences (Mezirov, 1997). These are based on past experiences (Mezirov, 1994) and generally a result of primary relationships (with parents or other influential figures) and cultural assimilation (Mezirov, 1997).

Considering that one's frames of reference are programmed a certain way, what transformative learning does, in theory, is it transforms these "sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets) – to make them more inclusive, discriminating, open, reflective, and emotionally able to change (Mezirow, 2003, p. 58). According to Mezirov (1994) such transformation happens through reflection of one's thoughts and of reality in general, which usually occurs in the contexts of problem-solving. Hence, in relation to EE, such contexts appear to be most efficient when generated through hands-on experiences which have a purpose, and a presence of meaningful relationships and teamwork, since this prompts students to apply their creativity and think critically (Mezirov, 1994; Southern, 2007). When presented with something new, they are able to observe, establish new points of views, reflect on how the experience fits into their own frames of references, and if applicable adapt and transform the frames based on the experience (Mezirov, 1997).

To understand in more detail the relevance of transformative learning to EE, Aboytes and Barth (2020) conducted a systematic literature review of 226 academic articles. It was noted that the presence of transformative learning is increasing dramatically in regard to EE, with the number of publications reaching a peak in 2019 with 41 academic articles (Aboytes and Barth, 2020). The researchers stated that the theory's increase in popularity is linked to the growing understanding

that it is valuable for developing and implementing sustainable interventions within educational settings (ibid.).

Furthermore, it has been found that such learning has elements in common with experiential learning theory (Kolb and Kolb, 2005). Within the experiential learning theory ‘concrete experience’ and ‘active experimentation’ are two of the four key components, which in transformative learning were found to appear in the form of students taking part in hands-on experiences and problem-solving exercises (Aboytes and Barth, 2020). Additionally, within such activities students engage in “social interaction, reflection and dialogue in the form of discourse and thereby complete the experiential learning cycle: abstract conceptualisation and reflective observation” (Aboytes and Barth, 2020, p. 1005). Ergo, it can be said the theory of transformative learning reinforces the experiential learning cycle and contributes to it, and as such to EE likewise.

In a similar manner, transformative learning was also found to contain two elements of Bandura’s social learning theory (will be briefly discussed in section 2.5.4). According to Barth and colleagues (2017), social learning is generated firstly because of the social environment in which learning takes place but also through the social interactions (using conversations and active engagement) which are present during the process. They especially highlighted the importance of community, group and societal togetherness for social learning, and effectively for transformative learning likewise (Barth et al., 2017).

Bearing this in mind Mezirov’s theory of transformative learning has some valuable insights for EE, whether by underpinning other learning theories or in the way it contributes additional ideas and concepts, as is the case with the frames of references.

2.2.4 Social Learning Theory

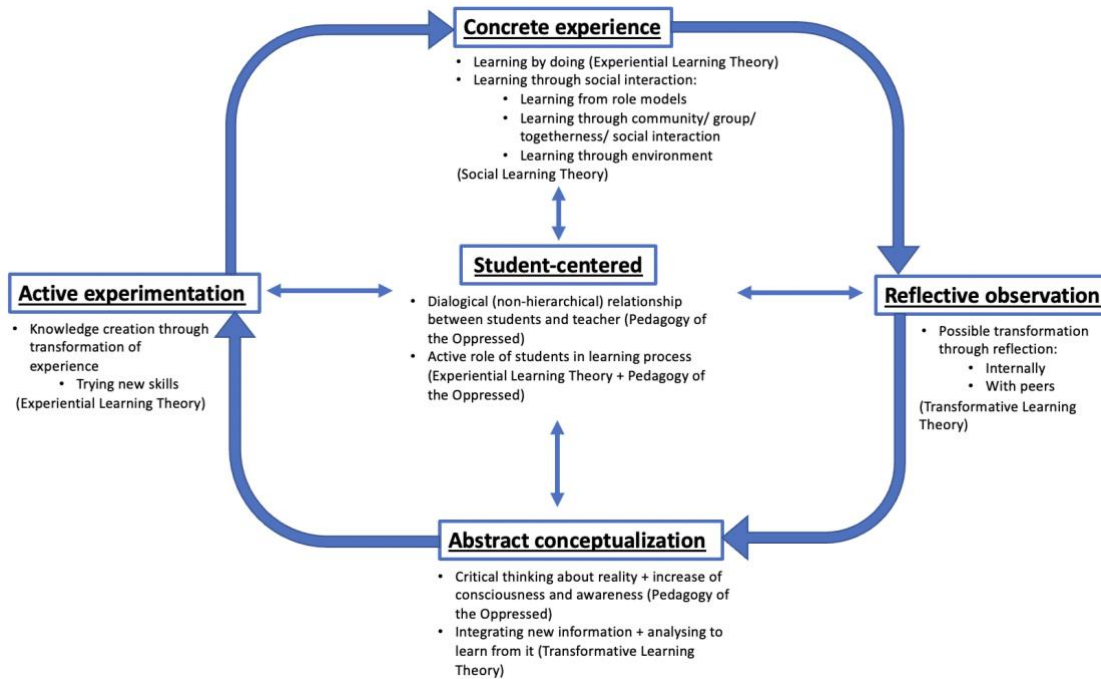
The theory will be just briefly discussed in this section due to its relevance being less prominent and some information already being provided in section 2.2.3. The theory states that children learn behaviours by watching how others display them, specifically through processes of attention, retention, reproduction and motivation (Bandura, 1997) Moreover, for these, motivational conditions are important, as well as a presence of incentives (Bandura, 1969). When information is observed (watching others), it becomes coded into a student’s mind into images or verbal memories. The frequency of the observation, or intimacy of the relationship with others, both

influence one's ability to retain the memories they form through this social learning (Bandura, 1969). Additionally, who the role model is carries significance with it being the case that influential figures like parents and teachers will be more likely to have an impact on a child's behaviour (Bandura, 1977).

Considering the hands-on nature of the experiential learning theory and that it will be used as the main base for this study, incorporating elements of the social learning theory seems necessary so that emphasis can be placed upon social interactions within learning. There is recognition within literature that the social learning theory is crucial in the study of pro-environmental attitudes and behaviours (McGregor, 2009; Glanz and Rimer, 2005; Martiskainen, 2007), and as such, is applicable for the study of environmental education. For these reasons, it seems appropriate integrate it in my own research.

Through an extensive review of literature on EE and theories which have already been researched in relation to it, a conceptual framework was generated which incorporates them all in what was seen as the most suitable manner. Kolb's experiential learning theory was chosen to act as the main frame because of the well-roundedness it is seen to have (the incorporation of a wide array of learning processes) and because it can be complimented coherently by the rest of the relevant learning theories. Every element of the learning cycle expresses a different learning process. As a result, having all learning process separately allows for the pedagogic method to be researched and analysed by coherently deconstructing it. Moreover, within every element of the learning cycle, the other learning theories contribute their knowledge and ideas, which enables the analysis process to be even more thorough and multifaceted. Lastly, the element at the centre of the framework is a student-centred approach. This also relates back to the literature which was consulted and has been placed as a centre piece due to the belief that education is a process which should align with the ways of learning which are most beneficial for the students.

2.2.5 Framework for Critical and Conscious Environmental Education (CCEE)



Operationalization of Framework

The operationalization process will follow the three steps which Van Thiel (2014) puts forward. Firstly, the theoretical concepts are defined, which here are visible within the blue boxes. These have been established by consulting EE literature. Next, indicators are identified for each of the concepts, which in the CCEE framework are visible as the bullet points below each box. The last step is to measure these indicators on a nominal scale, which means that within the data, the indicators will be measured in terms of their presence, and frequency in the datasets.

3. Research Methodology

3.1 Research philosophy

The philosophy which a researcher adapts or utilizes within their study is of significant importance, since it actively defines the ways in which research is conducted, analyzed and interpreted (Van Thiel, 2014). Effectively, the preexisting assumptions and beliefs a researcher carries is something they need to both understand and recognize, so that the validity and integrity of their research can

be ensured and maintained throughout (Moon & Blackman, 2014). The research philosophy can be broken down into the ontology, epistemology and philosophical perspective. This section will provide an explanation of each of these three components and demonstrate the philosophy which has been applied within this research.

3.1.1 Ontology

The ontology of a researcher can be defined as what their perspective on reality is, which can be found on a spectrum between realism and relativism. Realism rests in the belief there is solely one reality that exists which can be discovered (Moses & Knutsen, 2012). Relativism on the other hand sees reality as something which human's construct within their minds, meaning that reality becomes understood as something relative, which will vary from person to person (Moon & Blackman, 2014). For this study relativism has been adopted, more specifically bounded relativism, since it deems itself as most appropriate (Van Thiel, 2014). Bounded relativism revolves around the idea that different groups will have varying perspectives by group, meaning that a shared reality can exist within a specific group, but that other groups may have a different perception of reality (Moon & Blackman, 2014). This difference can be caused by varying elements, such as morals, or culture or other aspects.

Education relates to the passing down of knowledge about how one should understand the reality they live in, which varies greatly depending on factors such as culture, religion, geographical location, history, as well as others. Considering that the aim of the study is to understand a specific educational method – one which is believed to be unconventional in nature – a bounded relativist ontology seems applicable. Education is constantly evolving and new pedagogic methods emerge, and as such, when studying these methods it is crucial that research both recognizes and understands the belief systems and principles in which they are rooted.

3.1.2 Epistemology

Epistemology is the study of knowledge, namely how it is that the knowledge is created by individuals and what there is to know. Moon and Blackman express that it is concerned with “all aspects of the validity, scope and methods of acquiring knowledge, such as, what constitutes a knowledge claim; how knowledge can be produce or acquired; and how the extent of its

applicability can be determined” (2014, p. 1171). For this investigation, the most appropriate approach is a subjectivist epistemology. Essentially what this entails is that there is no objective reality to be uncovered, and instead, meaning is produced as a result of our perceptions and understandings of reality – hence, we as researchers impose our values upon the reality we are studying (Crotty, 1998). This study is hoping to uncover whether the Waldorf method shares the characteristics which successful environmental education entails, through the use of interviews. Since there is no direct interaction with the pedagogic method itself, data will solely be gathered through the accounts of others, which means that meaning will be constructed by the researcher in the interpretation of this data (which is based on prior conducted literary and theoretical research).

3.1.3 Methodological Perspective

The last component is the methodological perspective. One’s perspective consists of one’s philosophical orientation, which in turn is what guides one’s choices and actions when conducting research (Van Thiel, 2014). In line with the chosen epistemology the most applicable perspective in this research is social constructivism. It implies that individuals, in this case the researcher, do not understand and experience reality objectively, but that it is transmitted and processed through one’s mind and perceptions (Van Thiel, 2014). An acknowledgement and expression of the chosen perspective is important, since it has an influence on the chosen methods.

3.2 Research Design

For this research a qualitative approach has been selected. Qualitative approaches have the practical quality of ‘accessing values, interpretations of events, understandings, experiences and opinions’ (Seale, 2004, pp. 182). As opposed to quantitative approaches, a qualitative approach will allow for a greater breadth and depth to be acquired, in terms of meaning, which will enable for a better and more rounded understanding of the Waldorf pedagogy. Since a pedagogy is something which often varies between schools; is generally multifaceted in nature; and is made up of diverse corresponding components, a qualitative approach will be most effective in unravelling as much information as is necessary to form an understanding of all that constitutes this specific pedagogy.

Before clarifying the methods further, it is useful to reiterate the aim of this study, which is *to understand to what extent the Waldorf pedagogic approach embodies features of critical and conscious environmental education as presented within the CCEE framework?* This research question was accompanied by two further sub-questions: (1) Which indicators determine what critical and conscious environmental education should entail? (2) To what extent do the theoretical indicators (from the CCEE framework) and the methods applied within Waldorf schools correspond? The first sub-question was addressed through an extensive literature review and theoretical investigation which was presented in section 2. In addition to the CCEE framework and its indicators, the second sub-question also requires a first hand and in-depth understanding of the pedagogy itself, as applied in practice, in order to understand whether there is a correspondence. For this reason, a choice was made to conduct semi-structured interviews with members of faculty at Waldorf Schools.

3.2.1 Research Method and Data Collection

Literature Review and Theoretical Investigation

A literature review and theoretical analysis have been presented in section 2 of this study. In essence the process involved gathering a vast range of literature surrounding the topic of EE. Specifically, the research consulted was chosen based on whether it focused upon practical applications of methods of EE, or psychological learning theories and their effectiveness in regard to EE. This allowed for an understanding to be shaped of the factors, or elements of learning theories which, through research, have demonstrated themselves to be beneficial for EE. Consequently, based upon this review, factors which recurred most frequently, or which presented the most significant or relevant results, were chosen and compiled to form the CCEE framework for this research (presented in section 2.3).

This step of the research method is crucial, since the CCEE framework which was generated acts as a foundation for the rest of the study. The indicators within the CCEE framework were created by reviewing existing literature on the topic and understanding which factors occurred most frequently or carried the most prominence within the field already. Effectively throughout the analysis process of this study, these factors (or as they were presented in the CCEE

framework: indicators) were used as key drivers in the construction of interview guide. In line with this, they were likewise used to create a structure (themes and codes) through which the data was interpreted. With this in mind it is important to remind oneself of the research philosophy which was presented in section 3.1, to accept that to an extent the perspectives of the researcher may have played a role in how this process was conducted and the output which was generated.

Semi-structured Interviews

To gather the relevant data about the Waldorf pedagogy to which the CCEE framework can be applied, semi-structured interviews with faculty members at these schools seemed to be the right choice. While they have disadvantages, such as their labor intensity and time-consuming nature, they do provide an opportunity to uncover the thoughts and understandings of independent individuals (Adams, 2015). Semi-structured interviews have a “thematic, topic centered, biographical or narrative approach where the research has topics, themes or issues they [the researcher] wish to cover, but with a fluid and flexible structure” (Edwards and Holland, 2013, p. 3). The way such a structure is generated is through the application of an interview guide, which is a list of topics and questions to be covered during the process, but which still carries a flexibility in how interviewees can respond and in which order (Edwards and Holland, 2013).

Hornton and colleagues highlight this feature of flexibility to be the “key to success” (2004, p. 340) of this method; it allows interviews to have the nature of an “interactional exchange of dialogue” (Edwards and Holland, 2013, p. 3). At times, interviewees can even go off at tangents and ramble on, yet this too is something which is “often encouraged – it gives insight into what the interviewee sees as relevant and important (Bryman, 2015, p. 467). The development of responses in terms of what is of importance for every participant individually generates data which is less restrictive and with great diversity, enriching the data set (Blee and Taylor, 2002). Nevertheless, with the application of an interview guide, a general structure of topics and themes remains, which enables there to be grounds on which the researcher can compare and contrast responses after the interview process (Gilbert, 2008).

For this study, an interview guide was created, which can be found in the appendix X. Questions were constructed bearing in mind the CCEE framework (in section 2.3). This was done by generating questions which were generally inquisitive about the method, yet additionally with

a focus on key concepts from the framework, such as critical thinking, or student-teacher relationships for example. The questions chosen for the interview guide were not constructed in a way that directly asked about the presence of environmental education in schools. Since sustainability is something more and more encouraged in modern societies, a weariness in asking direct questions about the topic was present, since it may create room for exaggerations on behalf of participants regarding the commitments their schools make to environmental issues. To tackle this, the interviews integrated grand-tour questions. When using grand tour questions, the interviewer asks for descriptions of how things are and these typically “encourage informants to ramble on and on” (Spradley, 2003, p. 50). Spradley notes that “typical grand tour questions ask the informant to generalize, to talk about a pattern of events” (2003, p. 50). The intention of using such a method was to come to the center of how the Waldorf education functions as a whole and to understand all the elements which it is made up of. Effectively this allowed for the descriptions of the method to be more authentic, and at the same time, for the topic of environmental education to take up as much space as the interviewees gave it. This was done with a hope to observe how much importance was given to the topic of environmental education without exclusively asking about it.

Interviews were scheduled and held with individuals from outside the Netherlands, specifically from Brasil, and the United Kingdom, meaning that they were conducted online, using the application Zoom. All interviews were conducted in English. On average interviews lasted between 25-35 minutes and were all recorded. All interviews were transcribed manually before data analysis.

After the data of the Waldorf faculty members was gathered and analyzed, further interviews were scheduled with three parents of pupils enrolled at either of the two schools. The reason for this was to gain a deeper understanding of the environmental behaviors and attitudes which pupils express or engage in outside of the school setting, as observed by their parents. For these interviews the interview guide was not followed. Instead, parents were provided with an overall description of the study and the intentions behind it and were asked to discuss anything they found relevant concerning their child’s commitment to sustainability, and to what degree they may associate this with the Waldorf pedagogy. For these interviews, there was no full transcription process. Instead, notes were taken based on what was believed to be most relevant for the research at hand, and where it was relevant full quotations were recorded.

Sample

Participants needed for this study were chosen to be members of faculty from two different Waldorf schools from different countries. The justification for choosing this target group was that faculty members are those who are directly involved in the application of the Waldorf method, and as such understand its structure, values and effectiveness in a school setting. Additionally, the reason for using schools from two different countries was to understand whether the method may be applied in varying ways throughout the world or whether consistency exists. As aforementioned, the International Forum for Steiner Waldorf Education is in place to ensure the method is being applied appropriately, and in context with cultural, political and geographical contexts. Hence it is interesting to investigate into what variances may exist between, in this case Brasil and the United Kingdom.

The sampling method which was chosen for the study was snowball sampling. Edwards and Holland define this to be “a process in which contact is made with participants appropriately for your research through whatever access route you can find, and through these first participants you are introduced to other of similar/relevant characteristics for your research” (2013, p. 6). Initial contact was made through a third party who had a connection to a member of faculty at the Escola Waldorf Moara in Brasilia, Brasil. After the first interview, further interviews continued to be scheduled through a snowball effect. For the United Kingdom, approximately 8 different schools were contacted in the Greater London area per email, of which a reply was received from someone at the Greenwich Steiner School, after which further interviewees were likewise contacted through a snowball effect, using this first participant. Despite initially hoping for a larger sample, the time constrictions of the master program, together with the busy schedules of schoolteachers enabled for solely 6 interviews to be conducted in total – with 3 per school/country. Nevertheless, considering that teachers are experts in their field, rich data was generated. Additionally, the sample was diverse, consisting of both males and females, as well as teachers of different subjects and of different ages. As such, the participant pool allowed for both valuable and diversity in-depth data to be gathered.

The follow up interviews with parents consisted of two parents from the Moara school – one female and one male, and one parent from the Greenwich school – one female. For the Moara

school, the contact was established through a third-party individual, followed by a snowball effect. For the Greenwich school, contact with a parent was established through the faculty members, who used their school platform to send out a request. The sample of parents may be considered small. However, the purpose of the follow-up interviews was to deepen the already existing understandings of the data gathered, and since this goal was achieved, the sample size can be considered satisfactory.

3.2.2 Ethical Considerations

When conducting social research, ethics are immensely crucial because they ensure that both the researcher and participants are in a space of comfort, trust, integrity, and safety at every stage of the research process. To ensure that this was the case, the webpage of the Ethics Assessment Committee Faculty of Law and Nijmegen School of Management (EACLM) was consulted, urging the consideration of informed consent, harm to participants or researcher, and both confidentiality and anonymity.

To approach all elements with care, a document was compiled which was both a consent form and an information sheet (see appendix Y). According to Bryman, before conducting research, first informed consent must be acquired where participants are “given as much information as might be needed to make an informed decision about whether or not they wish to participate” (2012, p. 138), so that there is no space for deception. The document with which participants were provided contained a detailed description of the study and included information on the rights which they have as participants. It likewise incorporated information on how their data was to be used (as well as their right to withdraw data), and how their confidentiality and anonymity was to be preserved. Additionally, at the beginning of every interview the participants were asked for their permission to be recorded before doing so. Once the interview was completed, the audio recordings were saved using numbers with even number representing participants from Brasil, while odd numbers represented participations from the UK. By stripping the data of the participant names, it allowed for the possibility of researcher bias to be decreased. When using the data during the analysis, pseudonyms were allocated to every data set, to ensure complete anonymity.

Effectively, by consulting literature and implementing ethical precautions accordingly, the study allowed for there to be a safe and trusting space for participants, enabling likewise for results to be generated and presented in an ethical manner.

3.2.3 Data analysis

Data Analysis

First of all, as aforementioned, the data (i.e. the audio recordings of the interviews) were transcribed manually into written form. This step of the procedure already allowed for data to be examined and reflected upon. Once the transcriptions were finalized, they were uploaded onto NVivo 12, a program with a straightforward system to both code, as well as compare documents.

The analysis which was chosen for this study is thematic analysis. According to Clarke and Braun, this method can be used for “both inductive (data-driven) and deductive (theory-driven) analyses, and to capture both manifest (explicit) and latent (underlying) meaning (2016, p. 298). Since this study has its base in theory, yet simultaneously attempts to understand in what ways the theory can be seen within education (as expressed by participants), thematic analysis seemed most appropriate. Such an analysis allows for patterns to be identified within the data, especially in relation to the lived experiences, views, practices, or behaviors of participants (Clarke and Braun, 2016). The patterns which are observed and analyzed are commonly known as themes. Once themes are identified, “codes are then typically developed to represent the identified themes and applied or linked to raw data” (Guest et al., 2012, p.9).

The transcription of the data allowed for repetition of certain ideas or topics to be observed and noted down. Additionally, the CCEE framework and interview guide likewise provided some guidance in developing themes. Once the data was in NVivo 12, the data began to be analyzed by applying codes. According to Guest and colleagues “usually there is some content that quickly begins to seem familiar” (2012, p. 64) – with a common basis for such grouping of textual content being repetition. Additionally, data which is “unusual, unexpected, interesting or emotionally compelling” (Guest et al., 2012, p.65) is likewise often included. With that in mind, it is important to note that a researcher effect on data will likely be present. The effect will be acknowledged and addressed in further depth in the analysis section, prior to presenting the result.

Lastly, the follow up data collection, which took place with the parents, underwent a different analysis process. During interviews notes were taken using Microsoft Word, and where appropriate full quotations of what a participant had said were recorded. These interviews were rather informal and were not recorded vocally. Effectively, for this part of the analysis, any information which demonstrated environmental attitudes and behaviors will be incorporated and discussed, without having undergone a process of thematic analysis.

4. Findings and Analysis

This section will explore the topics and themes which were discovered during the data collection process and analysis of data, aiming to answer the sub-questions of the research questions.

To answer sub-question 1 “*Which qualitative indicators determine what critical and conscious environmental education should entail?*” section 2 delved into literature to draw out the theoretical concepts that are most relevant in determining what indicators contribute to effective environmental education. Once these were identified, they were then assembled to create the CCEE framework. From the framework, the indicators served as a starting point in this study to guide the understanding of what effective environmental education should entail. The central indicator chosen in this framework was (1) a *student-centred* approach to education, due to its high prevalence across the wide range of existing literature. The rest of the indicators suggested which elements need to be present in the cycle of learning and were the following (2) concrete experience, (3) reflective observation, (4) abstract conceptualization, (5) active experimentation.

To answer sub-question 2 “*To what extent do the theoretical indicators of critical and conscious environmental education (from the CCEE framework) and the methods applied within Waldorf schools correspond?*” the data gathered from interviews was categorized using the 5 indicators from the framework. This section will elaborate on each of the indicators separately to demonstrate the ways in which they were, or were not prevalent within the Waldorf pedagogic method.

Moreover, as aforementioned, several further interviews were conducted with parents to understand whether they see, or have seen, pro-environmental behaviours and attitudes manifest in their children. The findings from these interviews will be presented in a sub-section (6) accounts

from parents, which will be treated as another indicator to answer the sub-questions. In addition to the accounts from parents, during the research, the indicator (7) results and long-term effects, was identified. These two indicators will be elaborated on last to answer sub-question 3 “*Does the prevalence of these indicators in the Waldorf method generate productive long-term results?*”. Effectively this last section can act as a guide in understanding whether the indicators which were determined, truly do contribute to effective environmental education.

Prior to delving into the analysis, the first section is going to briefly introduce the participants (using pseudonyms) to provide a demographic overview. Additionally, a section will be provided giving an overall structure of the method as described by the participants. Although this was already provided in section 2, information provided by the participants will enrich the understanding of the method by expressing how it is implemented in practice.

4.1 Demographic

The research had a total of six participants, of which 3 were from the Moara Waldorf school in Brasil and 3 were from the United Kingdom, specifically the Greenwich Steiner school. However, all the participants from the Greenwich school were at this point either on leave, or had transferred to another school. In the following section, all participants will be addressed by pseudonyms. To ensure a simpler distinction between participants (based on the country they are based) the participants from the Moara Waldorf school were assigned names more commonly found in Brasil, while the participants from Greenwich Steiner school were assigned names commonly found in the United Kingdom.

The participants from Moara were two females and one male. Renata, one of the females is a class teacher for the younger classes, engaging with kids between the ages of 6 and 11. She has been working in a Waldorf environment for 12 years, specifically only in Moara. Camila is a high school biology teacher and has been working in Moara for 4 years. However, she was also very familiar with the method by having been a student in a Waldorf school herself. Joao, like Camila, has been working in the Moara Waldorf school for 4 years, specifically as a physics teacher for high schoolers. All the participants from Brasil had not experienced teaching the method in a Waldorf school other than Moara.

The participants from the United Kingdom consisted of three females. Rebecca, like Renata, had been working as a Waldorf teacher for 12 years. She started out as a German teacher, after which she moved to Germany where she worked as an English teacher before becoming a class teacher. Catherine, did not specify the years she had worked but she had worked in 11 different Waldorf schools as a eurythmy teacher for all ages (a subject that only exists in Waldorf schools) and described herself as “a longstanding person working in this education”. Lastly, Jane was a kindergarten teacher for the ages 1-3 and had worked in the Waldorf environment for 3 years.

The parent participants which were introduced into the research later on were two individuals from Moara, and one from Greenwich. Carina has a 13 year-old young daughter who is currently attending the Moara Waldorf school. Rodrigo is the father of three children who attended Moara. Two of his children are currently still attending school, while one boy completed a full 12 years of education at the school. Lastly, Stephanie has a daughter at the Greenwich Waldorf school aged 10.

4.2 General Structure

Before deconstructing the pedagogic approach in line with the CCEE framework, important points which were expressed by the participant regarding the general structure of the education will be described below.

The participants occupied different kind of teacher roles. Three of them were class teachers while the other three of them were subject teachers (subjects specified in section 4.1). The Waldorf pedagogic method in theory is described to follow child development. One way that this is ensured is by having the same teacher remain with their class for up to 8 years. Rebecca mentioned this:

“a class teacher and subject teacher are with the children for so long like 8 years you can be with a class, you build a relationship. Ideally. Like, my class teacher and I are still close, like she came to my wedding and all” (Rebecca)

In this sense, the method already distinguishes itself from most other conventional school settings. The way that classes or subjects are arranged also follows a specific structure:

“We have these block classes. So, the main classes in the morning are the same subject for a month. Some subjects are for 3 weeks but in general it’s a month and there is also special projects every year.” (Joao)

“The way we do it is that subjects are taught in blocks, you know. These blocks are more or less 4 weeks long” (Renata)

Hence, the way that the learning is structured seems to be by focusing on topics, themes or subjects for shorter periods of time, but in order to cover them in more depth. This is something which Joao especially stressed to have been of importance during the pandemic, when learning was significantly disrupted:

“So, we had to choose during the pandemic. So instead of trying to do everything we try to do fewer things more profoundly. [...] I’m not really sure how my colleagues see this, but its definitely a more transformative process when you really live something more profoundly, so I think I would say that I, even as a physics teacher, prefer to cover less topics but make sure that the students really, really are in touch with them.” (Joao)

Furthermore, an important part of the educational structure to give special attention to is the implementation of the subject of eurythmy – a subject which exists only in Waldorf schools. Catherine, a qualified teacher of eurythmy described it as follows:

“It’s not taught anywhere else, and it is a movement subject. Some people describe it as a European Tai Chi. So it is about the consciousness, about the movement, about the grace. The lesson is accompanied by a live piano, so it’s a beautiful lesson and I work with poems and for example fairytales and fables for the little ones, and poems will drive the big ones. It’s all happening in the movement. The learning process which happens in the classroom in the subject of eurythmy is connected always with the development of a child. It goes also and is tied up with the season and so the children learn to be comfortable with themselves and their body, they learn coordination, they learn grace, to be skillful and nimble, to be agile.” (Catherine)

Eurythmy is a subject which is compulsory at every age level and – as both Joao and Rebecca pointed out during their interviews – carries a notable influence on various aspects of the development of pupils. For this reason, and the fact that Catherine’s expression of the Waldorf pedagogy will be mostly around the subject of eurythmy, it was worth noting it’s presence and importance to the general structure of the Waldorf pedagogy.

Thinking, Feeling, Doing

A crucial element of the approach which was mentioned by every teacher relates to the way that classes are organized and how subjects within those classes go in line with this too. It follows a structure made up of three components: thinking, feeling, and doing (or willing). Rebecca puts it into words in a very straightforward manner:

“I would call it a threefold education, so you got the head, we say that’s intellect and knowledge and thinking, and developing that critical knowledge. You’ve got the hands which is developing that creativity, to create, you make and the will, like to do something so to put your crayon or pencil on paper and actually form something, and not being worried about whether it’s going to be right. You just try. And then you have the heart, which is social, emotional, you know, having empathy, listening to stories and feeling like what does it feel like to be someone in the story – a Viking.” (Rebecca)

As much as all elements are stimulated in every class, it is also important to note that classes are integrated into the curriculum with the purpose to nurture all three elements within students. For example, eurythmy – a subject which exists solely in Waldorf schools – has the important role of helping students work on the feeling part of their development as individuals. Additionally, there are classes which are not as common in mainstream schools which have a strong focus on the willing aspect:

“They have wielding, they have blacksmithing, they have woodwork, cooking, gardening, sculpting.” (Camila)

Rebecca highlights this to be important in providing the children with “a balanced education” since they are challenged and taught in a multitude of ways. The ways in which this shows itself or affects students in the long-term will be elaborated upon further throughout this analysis. The sections to follow will deconstruct the method in line with how the CCEE framework is constructed. The influence of the general structure mentioned here must be considered while making sense of the rest of the information.

4.3 Student-Centred Approach to Learning

As was previously made clear, a student-centred approach to learning is the central piece within the CCEE framework of what is thought to produce effective environmental education. The following section is divided into three parts: the developmental emphasis which exists in the approach, the active role of students in their own learning, and a dialogical relationship between teachers and students.

Developmental Emphasis

An understanding of child development is something which every participant mentioned to be of influence towards the way that the education is both organized and conducted. When thinking about this concept theoretically, it integrates well into the idea of having an education which centres around the student. Rather than basing the methodology in terms of chronology or other possible methods, the central piece to formulating it originates in an understanding of children and their phases of development. Rebecca stated the following:

“The main thing is that it [the Waldorf method] follows child development. [...] If you look at what is appropriate at what age, it follows that.” (Rebecca)

It is indeed something which Rudolf Steiner explicitly integrated into his methodology when developing it. According to Steiner (1965), the development of a child can be divided into periods of 7 years which are the following: 0-7 years, 7-14 years, 14-21 years. Within the first stage children are guided in education using imitation and play primarily, and as time progresses, toward

the last stage they are encouraged to form judgements, use, and develop their abstract thinking skills to make sense of the reality around them, or given subjects and ideas. Camila makes a point of this in her interview:

“When we are thinking about younger ages, we don’t try to make them think, we try not to stimulate them to judge things and think about the judgmental process. We think more about the process and what was before and what was then.” (Camila)

As shown in this example, students are encouraged to be present with the task given at hand and not prompted to think further than what is logical and beneficial for them at that age. Renata, who teaches the younger children, elaborated on this idea. Although she specified different age ranges, she nevertheless made it clear that an awareness of the stages of growth in which children find themselves is indeed present:

“11 years – until the children are that age, they have a different kind of sense, perception or noticing of the world and from 12 years old onwards they kind of get – they develop themselves in a different way. Because from 12 years old children can understand time and space in a different way to before. Like, now they can understand really what is 20 years ago, or 200 years ahead. [...]. So, they understand cause and consequence. So that is why they get to learn physics for example from 6th grade. And so, the approach that teachers learn to have with the children from 12 years onwards is different from before. (Renata)

In such a sense it seems appropriate to say that as a result children may integrate more information or experience, than if the method was not set up in such a way, since what they receive in their education is tailored to them and their development specifically through every part of the process.

To demonstrate how this may show itself within a class itself, it is interesting to note how an emphasis on child development shows itself in the class of eurythmy:

“Yes, it always is bound with development. So, with the little ones I would do nature stories and fairytales and the music would be more harmonious – it would be pleasing. And then when they come to class when they are older it will be different. So, with the teenagers I

can use some jazz music, so there is this disharmony [in the music] which they then also experience within themselves, and we do this together through the social exercises and through the material.” (Catherine)

As such, one can see that the student, and their needs at a given point in time, are in fact put at the center of the education. This emphasis on development demonstrates how the structure accommodates for the learning to be student centered. The following two sub-sections dive further into demonstrating how the ways of teaching which take place further underpin this part of the methodology.

Dialogical relationship

The way Freire (1996) puts it, conventional education, referred to by Freire as banking education, operates in a specific manner and consists largely of lecture-style learning in which students are the passive listeners of teachers. As such the relationship is narrative and fairly one-directional or closed. His understanding of the alternative (problem-posing education) together with support from further learning theories and previous studies in the field, point toward education which revolves more around a relationship between student and teacher which is dialogical. The responses within the interviews did in fact point out that a dialogue exists and is encouraged within the school setting, but at the same time it was visible that a level of hierarchy or respect is present. Below are some of the responses describing the relationships:

“I think there is, there definitely is hierarchy. So, all my students call me Ms. XXX, because I feel like that is how I separate myself from the children. I’m not them, I’m not an equal to them. I’m obviously older and hopefully wiser too, and I have to separate myself and I can’t be their friend. I can be close to them, and I love them dearly but I’m not their friend. Because then when things get hard, I have to be the one that steps in you know.” (Rebecca)

“It depends. Some teachers they really like to be in higher hierarchy. Some teachers are not and actually sometimes you don’t see eye to eye. I am a teacher that usually my students see me more as a friend than someone that is above them in some way. But as long as they

respect me and they know that when we are in class and we have something that we are supposed to do, I think that it's nice.” (Camila)

“Well there is always a great respect towards a pupil. [...] But also one is an adult so we have something which children don't have so we teach them, so there is this other side and one needs to find a balance. And there is an order in the class but there is always a dialogue as well. There are always children saying what they want and the teacher listens.” (Catherine)

As Camilla stated, differences between teachers do exist and it will be dependent on the teacher, but something that did in fact correlate between the majority of responses – be they from participants in the United Kingdom or in Brasil – was that the relationships revolve around respect. Whether a hierarchy is more prominent or less prominent, respect exists in both directions, as well as a dialogue.

“If they are getting out of hand or whatever I don't have to raise my voice very much you know I just kind of call their attention. So there is definitely a respectful relationship. But there is also dialogue you know. The class doesn't work if they don't participate. Because in the end we are trying to get them to discover, to discover the laws behind things and the concepts.” (Joao)

Alternatively, to ‘banking education’ where students take on a passive role and are largely directed in terms of what they should do, it appears that within the Waldorf setting of these two schools the relationship between pupils and teachers is nurtured in a manner that creates a healthy dynamic. As can be interpreted from the quotes, the presence of hierarchy or respect towards the teacher allows for a certain order to be maintained and guidance to take place. At the same time, however, the dialogue enables students to communicate to the teachers their thoughts, or feelings regarding what is being taught, how it is being taught, or even regarding situations outside of the classroom. Camila made an interesting point highlighting the importance of such communication:

“I am a tutor and sometimes they bring to me complaints about a teacher, and I always tell them that they should go directly to the teacher and not only complain about something but try to help them how to improve their class, so tell them things that they wish could be improved, or more often, and usually they do this.” (Camilla)

The communication enables for students to be listened to and for education to take on a form which is best suited for the students, or more specifically, tailored to each group of students based on their needs. To reiterate, Freire’s Pedagogy of the Oppressed (1996) places much emphasis upon the need for such dialogue within the school setting. Such a space for communication provides students with an environment which is liberating, rather than oppressive in its nature. By instilling and normalizing such liberty in school, students can be educated to carry themselves through life in a likewise manner and be conscious and respectful of other people and the world around them.

Additionally, the voice which students are given as individuals allows them to take on an active role in their learning. This provides further agency and develops skills of being proactive. The ways in which this formulates their learning further will be described in the next sub-section.

Active role of students

In line with the communication, which is present in the Waldorf environments under study, students play a very active role in their education, which is something that teachers themselves encourage. With that said, the learning is not fully guided by what the children desire, but it appears that there is flexibility and space in shaping the education, more so as the children get older and start to form their judgements.

“Rules are set by the teacher and as the children grow, these rules can change according to the group, because the children and the teenagers can get more and more aware of what is happening, or of what is necessary so that everybody is well, not only me.” (Renata)

Ensuring that children are well was a reasoning for allowing such flexibility throughout the different age groups. It appears to come from a desire to not mould all students into a predetermined idea of how a child should behave or learn and understand what is around them.

Jane for example, who was a kindergarten teacher, noted her reasoning for being so malleable with the kids:

“So, I believe that the children are drilled into it early enough, they have to do this and do that. And that's why I want to keep them just being and playing as long as I can now. For example, if we decide that we want to go somewhere [for a walk], but we don't get there because there are too many things to discover along the way, then that's how it is.” (Jane)

In a way, enabling for things to take their course and be loose in such a way, can be beneficial in teaching the children to be adaptable, and the teacher as well. While structure provides order, it appears that room for such flexibility offers a healthy balance and can even allow for additional, alternative skills to be developed. Moreover, there seems to be a great emphasis placed upon the philosophy that every student, or every group, is different and has their own individuality. With this in mind, granting students agency in their learning process both honours their individuality and allows for the learning to take on the form most appropriate for the group at hand. Renata puts this idea into words nicely:

“Yes, they are totally part of the education. Because we totally see that self-education is present since the beginning, since they are babies. So, since the baby is born you see that the baby likes some things more than other things. And you see that in children, so it is very clear and very normal for us that children are different from one another, and that people are different from each other. They have the same things; they have the same assignments but everyone does the same assignments in different ways” (Renata)

Camila underpins this further:

“When we are thinking about problem solving there is not a correct way to solve a problem. We work a way that makes sense for the group. So, if I have like 3 groups of people. I can have three different ways of solving the same problem.” (Camila)

By fostering such individuality, it allows for students to have the space to form their own identities by trial and error and understanding which learning structures, systems or patterns work for them. Furthermore, by both allowing and encouraging such agency among the students, it can likewise act as a way of instilling habits or creating motivation for students to have initiative and apply it without it being expected of them, but rather through personal choice. Joao, for example, mentioned some of the activities the children were taking on in their free time in the new space where the school is expanding:

“I told you we are occupying this new space and they spend about an hour and half during lunch time at this place. And there is no place really nearby to do things, so they started making suggestions about what they need. Like some benches so that people would be able to sit around and talk. We need a little gym, outdoor gym so we can do a bit of exercise. And so one of the teacher together with them started getting donated materials, buying cheap material and you know they are trying to put in some structure in to the place where the school is.” (Joao)

Catherine pointed out the way in which such initiative shows itself in her eurhythmy classes:

“There are different roles. And I will let them choose the roles. So I say ‘you have this little piece of paper, you have three roles that you can write that you would like to do’ because I don’t want to put them the roles, I want them to choose. And it doesn’t matter if the lead role is done by someone who is not perfect in the subject, it doesn’t matter. It is someone who wants to do the role and who can learn a lot in the roles, and so I give them the role. I tell them ‘yes you can have the role, but you will have to work very hard, can you do it?’ and sometimes they say ‘no maybe not’, and sometimes they say ‘yes I can’. So, I let them choose the roles.”

Effectively, the ability for students to take on an active role in their education allows for their individuality and individual needs to be honoured and respected, while also fostering a sense of responsibility and initiative. In some ways this goes hand in hand with the emphasis, which is

placed on development. It both follows the students' development with the guidance from them and stimulates development by giving responsibility to them.

To summarize this section, it appears that all of the elements which make up a student-centred approach function together to create a strong base for learning. By taking into account the needs of students, and both respecting and encouraging autonomy, it seems that students take more responsibility over their education. This underpins the choice of having a student-centred approach at the centre of the CCEE framework. If students learn to take responsibility over their education, not only does this support all other learning processes, but it likewise supports their personal development and instils transferrable skills, which can in turn benefit their involvement into critical and conscious citizens. The rest of the elements, which make up the CCEE framework (concrete experience, reflective observation, abstract conceptualization, active experimentation) are learning processes, which are intertwined with the student-centred approach in supporting the development of students into critical and conscious citizens. One by one, the findings in regard to these four elements will be presented in the sections to come.

4.4 Concrete experience

Concrete experience, a key piece of the CCEE framework, refers to one of the elements of the learning cycle which was adopted from the experiential learning theory. Although it is chosen to be discussed first, as aforementioned, the cycle does not have a starting point and instead can be entered at any time depending on every student individually. Nevertheless, with concrete experience being the element which will be discussed first, the sections to follow will continue in the chronological order of the cycle. Concrete experience refers to the notion of feeling and experiencing events, or themes and ideas in the learning environment. The way that this section is divided is tailored to the information, which was gathered. It is made up of the following sub-sections: learning by doing, learning through the environment and social interaction, learning through communities.

Learning by doing

'Learning by doing', is a concept which was found to be prominent and of significance in the environmental education literature which was consulted. The CCEE framework in itself is based on the experiential learning theory primarily which has its base in 'learning by doing'. It was interesting to see how this is implemented within Waldorf settings, especially because it was present within the setting in both geographical locations. Although a lecture-style learning environment was part of the educational methodology, there were various ways in which the teachers engaged the students in other forms of learning. When asking Rebecca about these other forms of learning this is what she replied:

"Each year a class usually puts on a play, that's a big thing. And they go on class trips and day outings and so on. So, for example in class 4 you do local geography, so you look at the inside of your desk and map that, then you start looking at your classroom, then you look at your school, then you look at your grounds of your school, then you look at your neighborhood and then you go bigger and bigger, that's one example of not just sitting in class." (Rebecca)

In this way students are engaged to learn by exploring and understanding phenomena through direct and active engagement with their surroundings. Camila noted how this was something likewise present in the Moara school:

"Today in geography the teacher took the 9th grade students to a four-hour field work. They were studying about rocks and about nature. [...]. So, they went on a hike to take samples and after they will look into them and study them." (Camila)

These were some of the more specific examples mentioned by the participants of how students were engaged in learning concepts or ideas or facts through experiences. Renata, talked about the teaching more generally on a day-to-day basis explaining the way that things are usually run:

“Many, many times during the day the students also get involved in activities that are dynamic, that are active. They have to stand up, or engage in groups or take all the desks and chairs away to the walls and we have a very big space in the middle of the classroom, and there we can do many, many things, like these dynamics and activities, and we play jumping and moving and sitting on the ground in many forms, in circle or in groups or everybody together or everybody spread around the room and also outside the room. This is also a very usual way to teach here.” (Renata)

An active approach seemed to be the norm at these schools, rather than something uncommon, and one can deduct that a balance of such various forms of learning may have beneficial effects on the attention of students and general intake of information since there is a variety of sources and styles they can experience and learn from. As was mentioned already, certain classes within the school are dedicated specifically to the idea of ‘doing’ and the development of such skills within students.

“So, we have students making paper, making their own notebooks, so booklets. So doing binding, you know learning how to do booklet binding. A lot of sculpture work, so this modelling – work done with clay. There are also agriculture classes, where – it’s actually pretty varied the agricultural work, but they have a lot of contact with the land and working on it. There is also technology classes as well. They can be very basic – so trying to understand how a telephone works and simple principles of a telephone. How a bicycle works. How engines work.” (Joao)

Essentially students are taught to acquire more physical skills which can be just as beneficial to them as academic skills in their day-to-day lives. Some of the other classes they are educated in included blacksmithing, and woodwork, and sculpting and cooking too. In a later section the results this has on students in the long-term are discussed, but it seems appropriate to assume that a diversity of subjects, including specifically those where learning is experienced through ‘doing’, is in fact quite beneficial for the development of children. Even among the youngest children (in kindergarten) Jane mentioned how responsibility is fostered through acts of ‘doing’:

“For example, I then noticed that in the larger groups from the kindergarten, it was always the case that, for example, to learn responsibility alone, you already had a 5-year-old child taking care of a small child that had just come out of the nursery. And in principle every older child has a responsibility for a small child. So, he had to make sure that the child was wearing their shoes correctly, for example, which they could not yet do on their own, and that they were wearing a jacket and that he had the right backpack in his hand.” (Jane)

Such responsibility and development of qualities outside of the academic thinking domain were discussed in a positive light and for the educators appeared to be just as important to teach the students as the academic elements. When thinking about environmental education specifically, academics do stress the importance of such a dynamic way of teaching (see Markaki, 2014; Kellert, 1998; Ata, 2018; Williams and Brown, 2012). Indeed, students can interact with their surroundings directly and use all of their senses to learn. Not only does this allow for stronger knowledge integration, but by also resembling the real world, and everyday life, students are being prepared to be part of the bigger picture, as a citizen of society.

Moreover, ‘learning by doing’ which was purposely integrated into the schools, fostered further learning spaces with social and environmental interaction, through which students were all the more stimulated to learn, as will be discussed in the following sub-sections.

Learning through the environment and social interaction

What appeared to be a beneficial, additional element to the implementation of ‘learning by doing’ techniques, was the ways in which it was intertwined with the natural environment as well as social interaction between students. The schools integrated events or activities which stimulated the students to connect with their surroundings, or perhaps created surroundings which enabled the students to acquire new connections. Catherine for example mentioned one of the events they organized for eurythmy:

“We do for example, there could be a eurythmy festival and we go out and perform. So yeah, we do this with other schools, so yeah there is a social impulse, and [...] there will

be beautiful poems about nature. So, the children which will have those field trips, there is a lot of these things happening.” (Catherine)

Just like the festival, several participants also mentioned the different field trips, or travel trips which students are taken on as classes every year. Renata mentioned the following:

“So like 3rd grade for example, children are getting to the 9th birthday and here in Brasilia we have a small city 150km from here and its usual that our group go there, and they study professions. [...] They spend 3-5 days in a hotel there in this small city without their parents, only with teachers. They study professions and they watch people do and make what they do. [...] And they visit waterfalls. (Renata).

Effectively, students are taken to learn in environments which, in social terms, may be completely new to them – being away from home, and going somewhere completely new. Perhaps for some, or most, it may even be their first interactions with waterfalls in the case which Renata mentioned above. As such the learning takes place on many levels: building social competence and intelligence, engaging in learning of professions, fostering connections to nature. These learning procedures and outcomes reiterate what was mentioned in the previous sub-section about using all of one’s senses and interacting with the surroundings. If students are being submerged into the world around them, namely through social and environmental interactions, they are developing competencies and understandings of themselves and the positions they hold in society and in relation to nature.

Joao went into more detail on the various ways in which learning takes place through such engagement, specifically with the natural environment around. Below are some of the quotations from his interview:

“So, in 9th year they have an agriculture study that they do where they go and they camp, they go to a productive farm and work there for a week. And we try to find farms that use biodynamic agriculture, organic agriculture and such, so that they can experience how the actual production is.” (Joao)

“We try to direct it [projects] to social needs and needs of the land and what have you. So, one example is, there is a small creek in our school, our high school is on a – not farm but country area which is very close actually to a somewhat poor city. And so, there is a lot of trash in the creek and such. So, the first week that we had school last year you know they were repelling into this creek and into a deep part of the creek and bringing out tires and stuff.” (Joao)

As is evident, a healthy and conscious relationship and awareness of the natural environment and how the students can interact with it in a respectful, constructive manner is something that the school, in this case specifically Moara, truly encourages. On the other hand, this was an element for which there was no explicit examples given in the Greenwich Waldorf school. This may be related to the location and climate of where Moara is based, as opposed to Greenwich, which is very centrally based in London. Moara on the other hand, although based in Brasilia, is closer in proximity to natural areas. At the same time, it may also be related to the way the school’s faculty choose to do things, or the country’s culture more generally. Spending time outside with classes appeared to be frequent in Moara. As Camila previously mentioned about the geography class going on a fieldtrip to study rocks, she likewise did similar activities with her students:

“It is really cold here. I decided with the group that we would work with fire so instead of being in the class we were in the field, and we made a bonfire. And the class was about the bonfire, and we were actually [supposed to be] talking about nutrition and nutrients, but we changed the whole thing.” (Camila)

The weather and season, seem to be considered in the structuring of lesson plans. Effectively, in addition to the way ideas or topics are brought across through the exploration of nature and the surrounding environment, the current rhythms of nature are also taken into consideration. The flexibility of the pedagogic approach allows for this and can truly benefit the environmental education of the students since they have the opportunity to learn about nature by being in harmony with it. Such direct exposure to nature, and a conscious integration of it in the learning environment highlights the importance of concrete experiences (one of the five elements of the CCEE framework) as a key factor in effective environmental education.

In addition to that, outings or fieldtrips also benefit students socially, since they help the development of class synergy. Such new and proactive settings create a lot of room for observation and dialogue between students and the teacher, which can be advantageous for the social development of students. In fact, social interaction and class synergy appear to be quite central to the teaching in the schools. This goes in line with Bandura's social learning theory and the way that students take on skills, or points of view or knowledge from those around them. The next subsection dives a little bit further into how this was similarly nurtured or brought about through engagement with not only one-another, but with communities surrounding the schools.

Learning through community

In this section too, a large part of the data gathered applied specifically to the Waldorf school in Brasil and was expressed by Joao. As aforementioned, perhaps a reason for this may be the location of the school, the climate or even the general culture of the country. In Moara, Joao expressed the following elements to be part of curriculum:

“In the curriculum we have [...] sort of like a social partnership. So, in the 10th grade they do it as a group, the advisor will help them choose a place that is not too far away, where some sort of intervention is needed, some sort of social intervention and they will do a project as a group to go there and either teach something that could be useful for the community. And it could be something in agriculture, it can be something in construction.”
(Joao)

“In the 11th grade its an individual apprenticeship. [...] each student chooses a place where they'd like to try to make an impact. So that's a lot more individual and the tutor or the advisor tries to orient them, help them, make contacts for them, use the contacts and what have you, so that they can do this.” (Joao)

Thus, students are encouraged and asked to make themselves available for the greater benefit of the community around them, of their choice, to make a social impact where it is needed. As such, a form of learning is stimulated in which students are taught to be selfless, and in which they can

learn how to be part of a community and to do their part for the well-being of the group. They are encouraged to learn through concrete experiences (as seen in the CCEE framework), specifically experiences which are directly linked to the environment and social welfare of their areas. Much in the same way the Moara school has aspirations to engage as such with the community around them, which likewise acts and leads as an example for the students. Although it is not yet in progress, the presence of such a philosophy and motivation can be an impactful incentive for students to engage in such activities too:

“One of the ideas we have more for the future [...] is trying to do some education with the community. Because there is some polluting farming that is going on a bit upstream from our water source here. Well, we want to try to bring a little bit of information to these people you know and try to work together with them.” (Joao)

As Bandura (1997) mentioned, social learning occurs when individuals (children) see a behavior to be demonstrated by influential figures such as parents or teachers. The above-mentioned approach, which the teachers at Moara have, is an ideal example of a scenario in which such social learning takes place for the benefit of the environment and social change in general.

Such social learning, together with the active community services mentioned above both deem very useful in promoting pro-environmental behaviors. Bearing that in mind, they highlight the importance of concrete experience learning in the realm of effective environmental education and underpin its significance as a key factor of the CCEE framework.

Furthermore, in addition to this part of the learning process in which students are actively feeling and experiencing, other sections of the learning cycle are equally as important, of which the next to be discussed is the reflective observation.

4.5 Reflective Observation

Reflective observation is the reflection and discussion which the learner undertakes internally or with their peers about the information acquired during their concrete experiences (McCarthy, 2010). What was interesting to see is that the process of reflective observation is something that

teachers are aware of and actively implement or prompt among the students. Joao referred to the method used to motivate such reflective thinking as phenomenology:

“We use phenomenology. So when we try to teach concepts we start with phenomenon and observational phenomena and we’ll have a discussion with the students where they can bring in anything that they think is related to this or experiences that it reminded them of, or impressions that they had.” (Joao)

In many ways the use of phenomenology goes in line with, or resembles, Freire’s (1996) conceptualization of problem-posing education. It allows for students to develop independent thinking and apply creativity to generate solutions. In the same manner one could argue that by solely providing phenomena or problems it allows for a sense of initiative or curiosity to be nurtured since it becomes an integral skill to have in the learning process. Camila highlights Joao’s description, as well as this element of initiative, when discussing the learning process of the students:

“We talk about a subject in a class and then they have a notebook, and they will write everything that they think that is important or it’s something that was interesting to them. And usually at home they will search more deeply for something that they wish to learn more. And then the next class we can discuss everything that they wish that they decided to search or that they were writing about in their notebook.” (Camila)

In different ways this could also make learning more enjoyable or interesting for students since their curiosities about subjects or topics are respected and met with both space to reflect alone, as well as tools to deconstruct these curiosities or questions. Additionally, such flexibility and space for students enables for individuality to be encouraged and supported. Rebecca and Renata both made a point of the fact that students are all different and likewise have varying ways of approaching reality and any given problem, for which reason they see the importance in providing the right environment for students to discover their own ways:

“We see multiple abilities and ways of approaching subjects and topics so that we know that the children will, each one, find themselves in his or her own specific way. Because who you are is a unique person in the world, and what you love and what you like and what you know you can do well, you know it, right?” (Renata)

“So, I don’t teach them how to find a solution if I teach them multiplication for example. I don’t tell them how to do it and then give them a sheet and tell them to do it. There is a way that’s easier, but I love it when the children discover their own ways [...] And I think that’s really cool that they can share their ways of learning. Because one way may not always work for everyone” (Rebecca)

Renata underpinned the necessity of students discovering their own ways and drew this point further by describing the positive influence this has for students in getting to know and understanding themselves as individuals and not just as learners. Furthermore, in line with Rebecca’s point, one could argue that the knowledge sharing which takes place between the students likewise aids the personal development of pupils since it provides them with an array of problem-solving techniques to try out. Such development for pupils occurs both by attempting the variety of approaches, as well as by learning which is most suitable for oneself. The social interaction which may be present in the learning process may likewise bring several benefits. In addition to improving communication skills generally, it may aid the development of an open mindset among children since it helps them be aware of the differences which exist between them and other students. The accounts of some of the participants are representative of the healthy communication dynamic this generates. Renata mentioned the following:

“And when they are around 18 in their last year, they talk about anything, they talk about facts and they compare their opinions and they argue about things. Not argue in a bad way but using arguments that can or cannot destroy or contribute to the arguments that were presented before.” (Renata)

Forming an understanding of oneself, as well as an awareness of the uniqueness and diversity of others, are both factors which benefit the development of a critically thinking, self-aware and open-

minded perspective towards life. Although not directly linked to the environment, nurturing such individual qualities nevertheless contributes to effective environmental education as presented within the CCEE framework. In encouraging reflection and celebrating diversity, students are educated to be critical and conscious citizens. Even more so, it appears that such qualities, instilled by the Waldorf teaching method, are carried by the pupils throughout their school development, and nurtured by the teachers every step of the way. Catherine describes the ways in which she tries to help support such healthy dynamics in her eurythmy classes:

“Also, they have to for example, create some choreography. They have to look at each other and help each other. So, when they are older I put them into groups and for example one group will show them this and the other group will tell them how they can improve the piece. [...] They have to learn how to say it in a helpful way so that they can improve together in social ways.” (Catherine)

Emphasis is placed upon the collective and the benefits it has in improving individually and as a social group. The Waldorf pedagogy seems to be quite strong in this stage of the learning process (as proposed in the CCEE framework) and aware of its necessity and benefits. The formulation of an understanding that there are many different solutions, and different approaches, is in fact crucial for environmental education. In addition to generally strengthening qualities that underpin teamwork and knowledge-sharing, it also supports individual confidence of being innovative to generate solutions and willing to try new approaches.

Overall, reflective thinking is nurtured in relation to both oneself and one's needs or interests, but likewise towards others, to learn how to communicate with one another and both understand and be respectful of the differences which exist. Such characteristics can be very beneficial in the strive to tackle environmental problems, since teamwork, innovation, open-mindedness, and respect are of great importance. Moreover, by learning to be a reflective learner, children can evolve into individuals with great awareness of themselves, and the world around them. As such, it can be seen in practice how the integration of reflective observation within the school setting does underpin effective environmental education, as was proposed in the CCEE framework.

What follows this stage in the learning cycle seen in the CCEE framework is abstract conceptualization, the advantaged of which will be discussed below.

4.6 Abstract Conceptualization

Abstract Conceptualization is the way that information is integrated using modes of thinking and how these are learned from, through the process of analysis (McCarthy, 2010). This element of the conceptual framework is largely linked with Freire's Pedagogy of the Oppressed. The ways in which it was observed and deconstructed from the interviews has been separated into two sections: critical thinking, and consciousness and awareness. This section will be separated accordingly in two such sections.

Critical Thinking

The element of critical thinking goes in line with the reflective observation and thinking which was discussed in the previous section. What Renata mentioned about the way the thinking of students as they get older allows them to have discussions and arguments that are calm, and with respect and logic, demonstrates an ability to apply critical thinking. Possibly, it is a successful integration of reflective thinking that enables students to analyse and integrate the information in a critical way. A point which was noticed to be consistent among the participants was that, as teachers, they actively kept their judgements outside of the classroom so that students could completely form their judgement and critical thinking on their own terms. Some of the following quotations demonstrate this:

“So when we are about 14, 15 in age, we start to stimulate and work on the critical part of judgement, on what is wrong and what is right but mostly we try not to put the teacher's thinking in the classroom so we stimulate them to put what they think in context and to work with each other and to think about something else or think about something in common among the class” (Camila)

“They start to learn how to tell their opinion, or form their opinion, in a kind of, we say freedom concerning the opinion of the adult who is around, who does not give his or her

own opinion. He or she, the teacher does not show, even in the facial expression what he thinks or feels about what is being taught.” (Renata)

In this sense, the analysis process and modes of thinking, which students use to integrate the information which they are receiving, are in accordance with their own understandings of reality and own learning techniques. By enabling such freedom, students are encouraged to explore themselves the possibilities and what it means to be an individual on this planet. Joao expresses his explanation of why they use such methodology as they do:

“That’s exactly why we try to bring this phenomenological methodology, where you actually look at the phenomenon instead of reading a summary or explanation of the phenomenon. And when you do that, you create your own understanding of it. In principle it protects you a little bit, from just going along with standard lines, but you know it’s hard. In the society we live in it’s hard, because you have to question everything right? But we definitely try, we are definitely trying to instill that in them” (Joao)

Such pedagogical methodologies, and the beliefs behind it appear to develop and enrich what Freire refers to as conscientization. Conscientization in students, refers to the idea of increasing consciousness and critical awareness, specifically in relation to how they think about reality and why it is the way it is, or what their position is in it. Having such internal dialogue with oneself and investing time in deconstructing and questioning the world around oneself is crucial in becoming a conscious, critical and educated citizen, especially when it comes to the environment. The conscious implementation of such teaching, which can stimulate such critical thinking about reality, is indeed visible in these Waldorf settings. While this is the account of a teacher of older classes, Rebecca on the other hand gave a description of this approach or understanding in the way that it is found among the younger classes:

“I think the class have to take responsibility of themselves. They have to think. Like what kind of class do I want to be part of? They have to create that. It’s not about the teacher just saying ‘you have to behave like this and do this?’ – I think there is a lot of trust and responsibility given to the children to say this is your class, you take responsibility, you

have to look after the classroom and sweep the floor, you know why should the cleaners have to pick up after you?” (Rebecca)

Students are provided with the responsibility to think and act individually, even from a younger age. In the case of critical thinking, granting such responsibility to students can truly act as a pillar for effective environmental education, since a key element of becoming a conscious and critical citizen is to be able to understand one’s position in the world, and be conscious of the effects one may have on others, their immediate environment, or the planet as a whole. Rebecca made an interesting point in regard to what teaching is like when the agency of incentivizing such critical thinking students is not there:

“Whereas in my opinion if you give them nothing, you are just standing there and telling them how to think and what to do it doesn’t lead to independent thinking, it doesn’t lead to creativity and you just raise a lot of people that are the same, and that’s a shame. The world needs individuality” (Rebecca)

Indeed, the world does need individuality. It allows for innovative and problem-solving thinking to be diverse and expand further, which in turn is very effective when thinking about all the ways humans can use to shift our societies towards sustainability. By encouraging students to practice independent thinking, teachers are providing them with the tools and skills which can be considered crucial to being a conscious citizen in our modern societies. It directly influences the awareness and consciousness which students carry towards the reality they find themselves in. These characteristics will be discussed in greater detail in the next sub-section.

Consciousness and Awareness

In addition to stimulating independent thinking, it became evident that there was an intention within the methodology to help students increase their consciousness and awareness, no matter what the subject was, so that it aids them in the lives they choose to follow. Joao referred to the role of teachers in this case as those who plant the seeds:

“Because if you really think about it, we are planting seeds, we are helping create an emotional structure which is strong, we’re developing an intellectual capacity which does not take things for granted you know, if we do our job right the person will actually look at things and form their own judgement. And we have a large emphasis on doing. So, you are not just thinking and feeling things, you are actually doing things and interacting with the world and so that is everything you need to make a positive impact.” (Joao)

He refers to the importance of encouraging such qualities not only for the individuality which Rebecca mentioned earlier, but likewise for the benefit of the world on a larger scale and how one can move through it. When one interacts with the world directly and consciously, they are living as part of it, and can become aware of their role within it and how they can contribute to bettering it. Such emphasis on doing and making a positive impact is key for environmental education, and pro-environmental behaviors more broadly. Moreover to what Joao mentioned, it was also evident that such qualities were being both fostered through community work as well as the incentives pushing this work – what Joao referred to as social estágio (in Portuguese) which translates to social apprenticeships:

“So, in these social estágio, we’re trying to involve the students more in the choice of where they really look into the community around and try to choose what the community needs, and how they can bring that and interact with the community for that. So, in that case it is actually looking for problems and trying to solve them right.” (Joao)

Such an active application of conscious thinking and awareness among the students regarding the environment around them is indeed important in cultivating such a mindset for the long term. Implementing social apprenticeships into the school curriculum, while still incentivizing personal choice and responsibility truly influences students to integrate and analyze the information, and act upon it. Such learning exercises enable students to practice being conscious individuals, which in turn may aid the development of such qualities into their adulthood. Bearing this in mind, the application of abstract conceptualization within the school setting shows to be of significance in fostering an effective environmental education, as presented within the CCEE framework.

Eurythmy is especially an active element within the Waldorf method in generating such an awareness and consciousness:

“So, it [eurythmy] is something which we will do with our body but it develops the inner abilities so for example the inner flexibility which might be very useful in life or confidence or social awareness. Social awareness is something which eurythmy fosters in many, many ways. And this is something which you see to be connected with a social awareness of being a citizen, to care for others, to care for the environment. So, this is what eurythmy brings, so we will do a lot of exercises which are social and of social quality.” (Catherine)

Catherine elaborated upon how this comes about and the way that she understands the process to take place and why an awareness is fostered among the students:

“They really have to learn to move with each other and to be harmonious with each other and this ability then comes into life. So, they will when they speak together, they will have this in themselves. So that will make them caring for each other, but also it will make them caring for the environment because they move in space and they care for the space., They learn to experience beautiful poems about nature for example, so they will have a reverence towards the nature. If they do something deeply in themselves, if they experience a poem about a tree, it will be so easy for them to do something to the tree or to the world.” (Catherine)

As is noticeable, eurythmy as a single subject already appears to play a great role in educating conscious individuals who are aware of the world in a social, and in an environmental sense. Social awareness is crucial in the strive for sustainability, since humans not only have to work together, but also support one another and show compassion. Much in the same way, such support and compassion are needed towards the environment, and Catherine’s words seem to suggest just that. One can see that there is a harmony which is cultivated with the space, that poems about nature are used, and indeed, such simple factors, may carry an long-lasting effects which promote pro-environmental attitudes. What is further interesting to add, is that teachers found this way of

teaching and learning to be beneficial for the children on a personal level in terms of their own development and motivations, especially leading into adulthood:

“We get very close to the families of children who study with our children and I see that these young adults that I know today, I can tell you that I feel they have more truth in their lives about what they do and who they are and how the relationships they have are and they know themselves much better than my generation for example. And you know I think the truth and the respect among people, in relationships... there is consequently more love in their lives, I think so. Self-knowledge, self-esteem.”

By giving the space for students to form their own judgements and to develop themselves in line with their own interests, while simultaneously fostering a social awareness, there seems to be a healthy mindset which this develops in the students, both for themselves, and effectively for the environment around them, be that humans, animals or nature in general. Joao underpinned this when sharing his thoughts on the healthy attitudes towards the environment which he believes students maintain after leaving school:

“We see them worried about the environment. [...] I believe that they have a certain consciousness about these things and are living lives that are more in tune with the environment let's say.” (Joao)

The faculty seem to believe that their students develop an environmental consciousness which they carry within them after finishing school. What the curriculum offers, like the social apprenticeships and eurythmy, foster environmental consciousness and awareness. In addition, the modes of teaching which induce such qualities, as well as critical thinking skills only further support and compliment the visible social and environmental attitudes.

To summarize the Waldorf method within the given schools is employed with a strong presence of abstract conceptualization learning, which, based on the accounts of teachers, shows itself to be integral to environmental education, as proposed in the CCEE framework. The next sub-section will cover the last element of the framework, discussing in more detail the more hands-on aspect of the learning process.

4.7 Active Experimentation

Active experimentation is the application of what was learned by planning or trying out new skills in the same situations or alternative situations. With the amount of responsibility placed on students in regard to their own learning and development, encouragement towards trying out new skills is likewise very present within the school environments. As was previously mentioned, students do various apprenticeships over the course of their school years (for the most part in higher classes). Joao mentioned two examples of such instances:

“So, in the 10th grade they do it as a group, the advisor will help them choose a place that is not too far away, where some sort of intervention is needed, some sort of social intervention and they will do a project as a group to go there and either teach something that could be useful for the community” (Joao)

“And then when you get to the 12th grade, they do a professional apprenticeship where they spend like a week in some sort of organization. And it can be a purely working environment, but it can also be an environment like an NGO, if they want to try to work there for a week.” (Joao)

It is visible in both instances, that students are pushed out of the comfort zone of their school to apply their knowledge to new environments. This allows them to experiment with what they learned in the real world and in new situations. Such practices may help students discover ways in which they can make their skills transferable to various scenarios and possibly even help them develop a flexibility or adaptability to different situations. Moreover, the nature of some of these scenarios is guided by social or environmental awareness, which in turn not only provides practice, but also familiarizes students with the notion of actively engaging in communities and organizations. The education and development of such skills contributes to effective environmental education since students are learning to make themselves useful to the surrounding environments and communities.

In a similar manner to the apprenticeships, there are class projects which are integrated into every grade level. In these projects students can apply the skills they have been learning in class in a new and independent manner. Rebecca gave an example of one of these projects:

“There’s a project every year. Like the children will be doing projects. For example, class 3 they do a house building object, so they have to build a house. They can choose any kind of dwelling, it can be an igloo, a teepee, a modern apartment, and do that.” (Rebecca)

Similarly, Catherine noted some of the activities they transfer from the class of eurythmy into activities in the real world, like a flash mob for example:

“But you could also do something like a flash mob you know. So, with the big children we can have a performance. I haven’t done it, but I am yearning for it and it has been done. So, we will go somewhere, like a main train station and we will share a piece from like Mozart and so we will kind of change the environment with this performance.” (Catherine)

With the integration of such activities, there is always opportunities for students to experiment with the skills that they have acquired. Consequently, they are able to test and play with their skills in new situations, and secure these skills both through practice, and through the confidence it grants them in a certain skill or space.

Furthermore, in one of the previous sections of the findings it was mentioned by Renata how they take students on a several day trip where they engage in active experimentation. Students are taken to a small city for 3-5 days, without parents, where they study and put into practice skills together with professionals. Such activities link largely to do the ‘doing’ element of the Waldorf approach. One could suggest that such submersion into reality truly allows for skills or experiences to be engrained in the students a lasting way, since they must analyze what they know theoretically and integrate it or adapt it to the given situation or reality around them. Such skills are crucial for any individual since life is an ever-evolving process in which new situations will always emerge and knowledge will continue to be formed or expanded. Considering that the goal towards sustainability is multi-faceted, innovative and an also ever-evolving process, having confidence and being able to use one’s skills in a transferrable manner improves one’s ability to participate in

the common sustainability goal. With this, the last element of the CCEE framework demonstrates both its presence in the Waldorf schools, and the benefits it carries towards environmental education.

Lastly, to reiterate what was mentioned at the beginning of the findings section, although active experimentation was discussed last, the learning cycle from the CCEE framework can be entered at any stage, meaning that trying out new skills as such could also be the starting point in the learning process for some.

Having analyzed all the elements that make up the CCEE framework, the next section will delve into what some of the parents of students had to say regarding the environmental attitudes and behaviors of their children.

4.8 Accounts from Parents

Following the data collection and analysis of the interviews held with teachers, the interviews with parents enriched the findings and provided more depth in the understanding of the effects the Waldorf method has on environmental behaviors and attitudes. As mentioned in the methodology section, these interviews were not transcribed manually, and instead notes were taken based on the important elements of the participant's responses with some integration of full quotes when relevant. Generally speaking, more relevant content was generated in relation to Moara, rather than Greenwich. As aforementioned, this may be due to the diversity of geographical locations, local surroundings, and culture. Nevertheless, it should be considered when reading this section.

First of all, it seems logical to mention what the parents had to say about the schools themselves and the material elements that make up the learning environment. Carina, a mother of a young girl at Moara, mentioned a couple points about the way the school is. She said that the school itself is very simple, things are made of wood, and that children are able to be barefoot. Rodrigo, a parent who has three kids who have gone to the Moara school, elaborated on the way that nature makes it into the classroom, stating that it is not necessarily something they academically teach, but instead that nature is something which the students live by. This included the following examples: using seeds as material to count, playing songs on instruments made of wood or natural materials, letting students play in the mud and be free in nature, and lots of

planting (Rodrigo). Essentially, one can deduce that the school environment functions in a harmonious way with the surroundings and nature. Rodrigo added:

“It is more about living the nature and the rhythms of nature. So, classes will be adjusted to the weather and time of year outside – so they really live the nature” (Rodrigo)

This idea of living with the rhythms of nature, which was deduced from the interviews with teachers too, seems to be strongly prevalent. This, together with the other ways natural elements are integrated into the classroom, provide a strong foundation for students to be connected to the environment, or at least feel comfortable within it. Such a connection to nature, in turn, is beneficial for environmental education.

Moreover, it appears to be that the methods of entrusting students with responsibilities complements the connection to nature, which is fostered, visible in the pro-environmental behaviors which they express. Stephanie, the mother of a young girl in the Greenwich school, mentioned that children help around all day, be it cleaning, making food, planting, or making things with art. Carina backed this statement up stating that they put the *“young people on the front line with responsibility”*. Effectively, a result of this which was visible, is that students take control of their learning environment and approach it with care, the way that one usually expects the faculty to. Carina mentioned the following about her daughter:

“She [Carina’s daughter] explained to a teacher about separating waste and now in this year they have started to separate waste at Moara” (Carina)

She followed it up with the following:

“It [separating waste] is new even at Moara, but at the Waldorf school it is a lot easier to implement new elements like this. They are more open to new things because the children are prepared to do things and to participate in all the things of the school” (Carina)

Evidently, in this case a student was promoting and integrating sustainable practices within the school setting. While the Waldorf setting and methodology enable such influences, credit must

also be given to the pro-environmental act of the student herself. Although this is a single act within this research, it can be linked to the environmental aspects integrated into the schools and the empowerment which students are given through the assigned responsibility.

Furthermore, in relation to the responsibility of cooking, which Stephanie mentioned earlier, she likewise noted that cooking is something commonly done together:

“They need to cook together. They plant and take the plants and then cook. They understand the entire process from farm to fork” (Stephanie)

Rodrigo also had some interesting points to add. He compared the food to that served in traditional schools and considered it to be better, claiming that it is not industrialized or processed. He proceeded to add:

In the early years and beginning of the school food is made in the classroom and it is part of the pedagogy. They get to see the transformation from raw materials to a cake or something like that. They make bread, it is an integral part. My oldest son was doing it when he was two years old and now the youngest is doing it too. It is part of the routine” (Rodrigo)

A key point to extract from both of these quotes, besides the emphasis placed on cooking, is the way that students are taught and familiarized with the process of food all the way from the beginning (the seed) through to the end. Such learning practices may be likely to foster a consciousness of the natural world and the way it functions. Additionally, it may also nurture the understanding that humans are dependent upon nature and that it requires to be taken care of if one is to reap its benefits. Although the notion that such understandings may be cultivated within the students is solely a speculation, exposure to such methods does indeed go hand in hand with environmental education.

A last point of interest mentioned by a parent is regarding the way that students actively do or create things when necessary. Carina mentioned several examples in which she compared her daughter to some of her daughter’s friends, who attend mainstream schools. The following was said:

“She [Carina’s daughter] wanted to create something where she can put her bottle of water. So, she did crochet and create a little bag so she can put her bottle inside and carry it across her shoulder to take places. The other kids [from other schools] don’t do that. They want to buy a place to put their bottle.” (Carina)

“When she was younger [Carina’s daughter] she would love to play in the garden, creating a house of wood and put stuff in the house. When the other friends come to our house they want to buy a house [doll house] and they don’t understand the behavior of building a house.” (Carina)

Although this point was only brought forward by one of the parents, it does suggest that such behavior may be nurtured through the Waldorf environment. Indeed, it may be that the three-fold education aids this process, since an emphasis is placed upon the ability to achieve things by ‘doing’. As a result, children are more inclined to both take initiative and be creative in coming up with their own solutions, and moreover, they are less inclined to consume, which in itself is an environmentally unfriendly behavior.

Bearing in mind all the points brought forward by parents, it does become apparent that pro-environmental attitudes and behaviors are indeed visible amongst children, and often parents link these to the Waldorf pedagogy at school. Such accounts indicate the ways in which the Waldorf method does indeed correspond with effective environmental education. The next section will inquire into the accounts of teachers and the effects they see in the children, especially when thinking long term.

4.9 Long-term Results

Participants delved into the effects this kind of education has on students, both in the way they can deal with things that come their way while still in school, as well as in the long term once they go on into the real world. A very interesting point which Joao brought forward was in relation to the Covid pandemic, and how students dealt with it:

“During the pandemic these three students that have been in the Waldorf school since kindergarten, were the students [...] in my class that best adapted. So, I think when you look at the overall education, we do have certainly an emotional structure that has definitely developed and that has a lot to do with the artistic work that is done. There is a lot of expression that comes out through artistic work that you would not necessarily express in other ways and so it’s really a way to get in contact with things and not keep them bottled up.” (Joao)

It is interesting to see how teachers relate the artistic elements of the education to the emotional structure of students and to see that prolonged practices of such nature influence the ways in which new, difficult, or unusual situations are dealt with. In a similar manner, it is possible that the skill to cope as such, could be transferrable to the social and environmental crises which we face in our time. The ability to maintain a harmony or balance within oneself can be crucial in aiding an individual through the mental and emotional hardships which accompany the understanding that our planet, our ecosystems and all biodiversity are under threat. To add onto this, Rebecca likewise made a note of the effect that she believes the education has on the emotional capabilities in the lives of students:

“Thinking with the head, feeling with the heart, and willing is doing. It gives you a balanced education, and I think most forms of education focus on the thinking part, and less so the doing and creativity and the social emotional part of life. I think more schools around the world are becoming aware of that education and the necessity of it, but I think because you are developing these three different components, you have less materialistic thinking, anxiety, and depressions. You have children who love learning and I think that lifelong love for learning is instilled in them.” (Rebecca)

Catherine likewise made a note of the importance the three-component education carries for providing a sense of balance in the students and helping them be well-rounded as individuals:

“So, the academics they learn with their head, but they need space for this learning and that space is created by the artistic and it’s like breathing. ‘Ahh now we are relaxed and

now we can learn again' – so this is harmonious. So, then the pupils which come out of the Waldorf school are not kind of imbalanced by this only academic side. They are balanced people, and they can come into the life in a different way.” (Catherine)

Moreover, Camila placed some emphasis upon how this translates into happier lives:

“I think that usually our students they appear more happy and more satisfied with their lives than most students with other schools.” (Camila)

This seemed to be something which most of the teachers agreed upon in general. Bearing in mind that contemporary life is full of constant stimuli, media, personal matters, and environmental and social issues, the way in which the Waldorf education prepares its students emotionally for the real world gives these individuals a big advantage in how they approach life. Furthermore, in terms of practical skills, participants from both Brasil and the United Kingdom pointed out that how hands-on skills are something which students carry with them into adulthood. Camila and Rebecca, both of whom were Waldorf students themselves, expressed what they took with them into adulthood from their schools:

“I was a student there and now I sew all the pillowcases of my house, and all the curtains of my house and I build my table that I use to work. So yeah, I'm pretty sure that they use some of the skills that they learn at school. [...] I have a house that I am building with my husband and we are building it ourselves and we are trying to make it as sustainable as we can.” (Camila)

“I notice that I have a general knowledge of so much and how to just live in the world. Like when I went to university, I was astounded at how so many people didn't know how to cook for themselves or how to do their own laundry. You know it's just basic things that most people don't know like fixing a bike tire even. Most people don't know these things and for me they are kind of basic. Like I'm not doing anything crazy by fixing a car's tire. [...] They are practical skills, life skills.” (Rebecca)

As such, it becomes evident that there are benefits which students acquire and take with them into their adulthood both in the form of practical skills, as well as emotional. Although there may be a bias regarding the method and its effects, there was a consistency in the answers among participants both in the UK and in Brasil, indicating a truth to be present.

5. Conclusion and Discussion

The following section will firstly delve into a discussion of the findings and what can be drawn from them, especially when relating them to existing literature. This will then be followed by a conclusion which will aim to provide an answer to the research question which was presented at the beginning of the paper. It will then finish off with a deconstruction of the limitations which the research carried, as well as suggestion for future research.

5.1. Discussion

As aforementioned, the data gathered was analyzed by breaking it down and relating it to the CCEE framework. It was then presented in the findings and analysis section using a structure generated by the framework, specifically the components which it is made up of. In addition to the main CCEE framework components, several other indicators, or relevant information arose and were integrated in the analysis process. These include: the general structure, accounts from parents, and long-term results. The discussion will follow a similar pattern, interpreting the components of the framework one-by-one to understand in what ways they were present within the pedagogy.

At the center of the CCEE framework was the emphasis on a student-centered approach, one in which students both have an active role in their own learning, as well as that the relationship with teachers is dialogical rather than hierarchical (Freire, 1996; Smart and Csapo, 2007). It appeared to be that students truly engaged with the learning material and that they were in fact very active in shaping their learning environment. Firstly, the general pedagogic structure already reinforces this by emphasizing the importance of child development and working in line with it, both on a group level but also on individual levels with students. So, students already engage in learning which is tailored to them, for their own benefit of greater engagement and information

intake. In addition to this, the data made it clear that students are given a great deal of responsibility to determine what shapes their learning takes on. This was visible in both school settings and showed itself in various ways.

One way in which this manifests itself is through the feedback to the teachers, which is present and encouraged. Such a dynamic enables the class to take on a form depending on the interest and learning speed of the students. Effectively, agency among students is fostered and skills of being proactive, involved, and motivated are as well – all of which are beneficial for any individual moving through life. Freire (1996) noted in his pedagogy that such an approach gives students the ability to directly engage with the reality which unfolds and evolves around them, which helps their adaptability in an everchanging world. Indeed, it was seen that through the way students are given liberty in their learning space, they practice autonomy and responsibility, which in turn helps them be aware of themselves and their surroundings and engage accordingly. Besides supporting their learning process, such an environment also supports the personal development of students and instils transferrable skills, which can benefit their evolvment into critical and conscious citizens.

Many of the participants praised this dialogical relationship, the responsibility which it fosters, and dynamic it creates. However, the majority of the teachers also made a note that despite the room for dialogue, they did value a dynamic in which the teacher holds a higher position than the students. There were different reasons for this, but a common element which was mentioned by all within this context was respect. Hence, to some extent a hierarchy is favored and present, but it originates in a base of respect, rather than for the purpose of hierarchy. Such dynamics go in line with Freire's pedagogy too, since the lack of hierarchy means that there is little space for oppressive dynamics. This in turn aids an understanding of reality which revolves around respect, rather than oppression – something of great significance in educating conscious and self-aware citizens of the world.

Besides the prevalence of a student-centered dynamic, an element of the conceptual model which appeared to be highly prominent within the Waldorf settings was 'concrete experience'. Dynamic activities, be it in the classroom and school grounds, or outside of the school environment and possibly even on school trips, appeared to be an integral part of the school settings in both cases. Ata (2018), among other academics (Williams and Brown, 2012; Pierce, 2015) have found the implementation of such active learning to be highly beneficial for the development of

environmental knowledge and attitudes within students. Something which was observed in relation to this element of the framework, was that the constituent parts which it was made up of (e.g., learning by doing, learning through community), are much more prevalent in the Moara school setting than in Greenwich. This may be dependent upon the geographical settings though. Moara is based in Brasilia, a somewhat smaller city, has a farm, and is closer in proximity to rural areas around. Greenwich school on the other hand is within London, a metropolitan city, and does not have rural areas as accessible. As such it may be easier for the Moara school to implement outdoor excursions and activities of the kind, especially spontaneously. Nevertheless, the emphasis of integrating learning that is not just in lecture-style form but also through active doing and through participation in the real world was present in both schools, just implemented to different levels. Such experiential learning has been found to promote positive development for children socially, physically, psychologically and intellectually (Schusler and Krasny, 2010). Markaki (2014) adds that methods like excursions and role playing or case studies help students understand and navigate real world problems, which in turn can have an effect on their behaviour towards the environment. It's benefit towards shaping environmentally conscious individuals was praised by the teachers and the parents. As a result of the integration of such learning, students can use all of their senses and interact with their surroundings directly. Besides increasing knowledge integration, by submerging students into the real world through social and environmental interactions, such pedagogic approaches help students develop an understanding of the world around them and especially their position within it. Such competencies of being self-aware and critically deconstructing the reality around them, rather than just taking it for granted, are crucial in educating conscious critical citizens who can understand how their behaviours interlink with the environment and its wellbeing.

In a similar manner, the presence of reflective observation, which likewise has a beneficial effect on the critical thinking and awareness of students, was greatly present in both the schools. All participants agreed on the fact that the students carried the responsibility in their own learning, and in generating their own understanding of the world around them. Joao referred to the method commonly used to facilitate this as phenomenology, where students are presented with problems or phenomena, and are expected to figure things out themselves, or amongst each other. This not only allows students to apply more thinking (since the answers are not spoon-fed to them), but also gives them the space to find their own ways of doing so. Freire (1996) calls this kind of education

‘problem-posing education’ and brings attention to the creativity which it stimulates. He even elaborates further by saying that those who replace conventional (‘banking’) education with one which involves questioning and problem posing, are truly committed to liberation. Indeed, students were found to be problem solvers, looking for their own ways to find solutions. It was even found that they would carry these problem-solving skills further into daily life. As one of the parents mentioned, when presented with a problem, task or challenge, her daughter would come up with solutions herself and follow through in achieving the result (as was the case with the water bottle holder). She compared this to the way that kids from mainstream schools went around the process of thinking and solving, and instead would just purchase whatever it was they desired.

Hence, the data showed how creativity was indeed nurtured and stimulated within the learning environment together with a desire to apply these skills and to be proactive and innovative in generating solutions. It was interesting to see that such behaviours expressed themselves already at very young ages. One of the young students at Moara even pushed for the separation of waste to be implemented at the school. With that being said, whether students carry themselves in their everyday life with such an approach, or whether they become active agents of environmental justice and climate change mitigation, the skills which reflective observation instils in them are essential towards building a more sustainable future. With that being said, the findings reinforced the importance yet another one of the CCEE framework elements for effective environmental education.

Additionally, the thinking processes which fit under the element of abstract conceptualization, are intertwined with the reflective observation in the school and seem to extend further too. Here, critical thinking, consciousness and awareness are of utmost importance and their presence and importance was certainly expressed by all individuals. While the previous point was related more to how students receive information or how they reflect, this part of the learning process is more focused on how they integrate it and what they do with this information. Within the school settings it is visible that what the curriculum offers is productive in giving the students the opportunity to integrate and apply their knowledge in a manner which nurtures environmental consciousness. The implementation of social apprenticeships, for example, especially with the duty for the students of finding these on their own, incentivizes active analysis and conscious thinking of what the surrounding community, or world more generally may need. This promotes pro-environmental behaviours in a literal sense, but also pushes students to understand themselves

as part of a community, especially through the responsibility they take on of truly understanding what it is what the community may need. What can be gathered from this, is that it seems that the curriculum is set up to work in harmony with the pedagogic method so that the two can complement one another to educate individuals into conscious individuals with a motivation to be active in making a positive difference.

An important feature which greatly linked to this too, was that the opinions of teachers were to be kept out of the classroom, so that thinking could form itself on the terms of the students. This allows for individuality and, according to Giroux (2010), by inspiring to think critically and be critical agents as such, there is a human agency that evolves among students. Such human agency is of immense importance for social transformation. Koutsoukos and colleagues (2015) support the idea that such dynamic processes where critical thinking and personal development are enabled are among the drivers towards behavioural change.

Moreover, other drivers that emerged from such teaching methods, which promote pro-environmental behaviours and attitudes, are the increased awareness and consciousness among students. Freire calls this conscientization and points out that such mindsets allow students to think critically about reality, about its causes and especially their position within reality (Shugurensky, 1998). The sole presence of eurythmy within the methodology already seems to bring out conscientization among the students, as was described by Catherine. Encouragement of moving through a space, and sharing a space with other students, while also honouring one's own process of movement can truly benefit individual perceptions of how to navigate certain environments and how to be conscious of one's surroundings. Furthermore, this consciousness of one's surroundings was only further nurtured through the way that the school operates in rhythm with nature. Alongside being in tune with the seasons, within classrooms natural materials, such as seeds, are used, and processes such as the life-cycle of food from farm to fork are incorporated so that students are aware of how nature works and is intertwined with our daily lives. Using teaching methods which promote conscientization, combined with integrating nature and its rhythms into the learning environment, produce an environment in which students become aware of the natural world and how they fit into it. Such results are only further reinforced through the emphasis placed on making a difference within oneself, the nearby communities, or the world in general. As aforementioned, this was actively communicated and integrated in both schools, be it through social projects and apprenticeships or just in the day-to-day life activities. What all of these factors,

and the combination thereof, result in individuals who are both connected to nature and have developed the qualities of being conscious and helpful, which in turn reinforces pro-environmental behaviours and attitudes.

Lastly, and much like the rest of the elements of the CCEE framework, active experimentation was also greatly encouraged. Whether it was through the use of class projects, school trips, flash mobs (in eurythmy) or social apprenticeships, students are in many ways pushed to try and explore the skills which they acquire through school. The dynamic nature which such active participation and experimentation has, has been expressed by various researchers to be beneficial for environmental education (Kellert, 1998; Ata, 2018; Williams and Brown, 2012). Kotsova and Atasov (2008) also add on that such practices can help foster proactive ways of thinking and values which in turn can be integrated into the everyday life of students. Considering the fact that students, in both schools, are pushed to try out new skills in new environments and to do so from the origins of their knowledge and previous experiences, one could argue that it builds strong foundations on which students can continue their self-development. With strong foundations for individual development, and by engaging with the world outside of the school environment, Kolb (1984) expresses that students can continue to challenge pre-existing beliefs and ideas, and possibly influence their surroundings with such attitudes too. Active examples of this were visible in the social and environmental projects which Moara implemented in their school. The way that parents and teachers described the pro-environmental behaviours of students outside of school likewise demonstrates how the ability to try out new skills in new environments is transferred into their daily lives outside of school, and into adulthood too. Hence, the way that the Waldorf school guides active experimentation through the channels of environmental and social justice carries great significance for effective environmental education because these behaviours are internalized and taken further into the real world where they can help foster sustainable transformations.

With this in mind, and the other four elements discussed, it becomes evident that the Waldorf setting is rich in all of the sections. Although there may have been some differences, for the most part, the two different school settings align and the indicators from the CCEE framework are present in a manner where the benefits they carry for effective environmental education are visible. The following section will delve into formulating what this means for environmental education.

5.2 Conclusion

This paper aimed to answer the following question: *To what extent does the Waldorf pedagogic approach embody features of critical and conscious environmental education as presented within the CCEE framework?*

The indicators which were used to determine and measure effective environmental education were established using the existing literature on the topic, which at this moment is still relatively scarce. The CCEE framework assumed for a student-centred education to be at the heart of an effective method and additionally involved four elements of a learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

What was found, was that in fact every single element of the conceptual model was present within both of the Waldorf schools, and on top of this that these elements were something which teachers were actively aware of and implementing. During the interview processes (which had used a grand-tour question approach), although not always explicitly stated, accounts demonstrated that the schools do incorporate ways of learning, and activities which concern the environment and do promote a connection to it, as well as behaviours of sustainable nature.

The constituent elements of the CCEE framework themselves played a crucial role in developing ways of thinking and behaviours which in the right setting could be, and showed themselves to be, effective in generating pro-environmental behaviours and attitudes.

Students were given an active role in their education; they were pushed to think for themselves; to think critically and to develop an awareness of the reality around; they were pushed to learn by doing and by submerging themselves in new environments; and they were likewise pushed to apply what they have learned in new situations that the school but also reality present them with. In such a manner they were being provided with an educational base which not only educates individuals to be independent, responsible and think critically of their existence in the world, but likewise provides them with a balanced education that allows for their skills to extend into different levels of everyday life. The school complimented such pedagogic approaches with active implementation of situations, scenarios or materials which related to the natural environment, or the surrounding communities. Effectively, students were receiving an education in which they could experiment by applying their knowledge and skills to the world around them. It could be noted that it was in fact not solely the presence of the components of the CCEE

framework which promoted effective environmental education in the Waldorf schools, but indeed the blend of their presence and an integration of nature and its significance in the school setting and curriculum. The positive effects of the way the Waldorf method integrates effective environmental education are underpinned with the statements made by teachers regarding the long-term effects which they see the methodology have on students, as well as the parents who comment on the sustainable behaviours they notice in their children. The parents commented on the way that students are more environmentally friendly and conscious of creating solutions, especially when comparing them to other children not educated in Waldorf environments. In the words of the teachers, the students were believed to grow up into conscious and critical citizens, whom they believe to carry environmentally and socially constructive mindsets in life regarding the world around them. Those of the teachers who had once been students themselves in Waldorf schools expressed the commitments they themselves make as critical and conscious citizens, by incorporating sustainable practices into their everyday life.

Hence, to answer the question, the Waldorf method does in fact incorporate all the indicators of critical and conscious environmental education as presented within the framework. The ways of thinking and carrying oneself are fostered through the integration of them in a manner which educates students to be critical, active, creative, problem-solving, innovative, and many other qualities which all benefit their evolution into critical and conscious citizens with agency. In that sense, especially when complimented in the learning environment by environmental or sustainable elements and topics, the Waldorf pedagogy does demonstrate itself to be a method which promotes effective environmental education.

With such awareness, it could be beneficial to start incorporating elements of the Waldorf pedagogy into school settings to test whether they can be implemented in conventional schools successfully. This research was motivated by a collaboration/internship with the Wigrow charity. With the findings, which have been generated and presented, my collaboration with the organization will continue to attempt an implementation of the elements from the CCEE framework into the school setting of the Good Shepherd school in Masaka District, Uganda.


5.2.1 Limitations and Suggestions for Future Research

One of the main limitations of this study was the sample. Although it enabled for rich and meaningful data to be gathered for the purpose of this study, the sample size was relatively small. One of the reasons for this was the pressure for time in relation to the master's programme. Additionally, such time pressure or lack of time was present on the side of teachers, who were still tackling complications of teaching during a pandemic as well as recovering from it. For this reason, too, snowball sampling was used as a sampling methodology, which also resulted in the sample consisting of mostly females, with just one male taking part. If the study were to be conducted again, it would be optimal to generate a larger sample that would include a greater diversity and possibly even take into account several schools within the countries being researched.

Although this was originally the intention, another aspect of the research which could be improved is to exclude the grand-tour question methodology. Despite the intention being optimistic, and the result still providing answers, it is likely that incorporating subtle or possibly even direct questions regarding environmental education can provide a greater depth of information regarding the results which the method carries in the day-to-day learning environment. This would possibly also make the process of analysis more straightforward when forming links between the data and theories of environmental education.

Overall, the research has a lot of potential and is currently still a highly understudied field. Taking this research further by expanding the sample sizes, numbers of schools researched and possibly even a greater variation of countries would greatly enrich the understanding of how the Waldorf pedagogy can benefit the environmental education in our societies. It would likewise be a worth researching other alternative pedagogies such as the Montessori method, to further elaborate on the understanding of what additional factors there are that can truly contribute to effective environmental education. Education is a crucial tool towards building a more sustainable future and there is no better time to start than now, so that the next generations can increasingly become agents of change.

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Appendix

X. Interview Guide

Demographic:

1. What is the Waldorf school at which you are situated?
 - a. Which role do you occupy there?
 - b. How long have you been working there? (or at any other Waldorf school)

2. Could you just provide a **brief description of the method** itself in a couple of sentences?

Forms of teaching:

3. How would you describe the ways in which **learning** takes place **within the classroom**?
 - a. Which kind of **techniques** do you use?
 - b. How do you think they are different to conventional learning techniques?

4. Which forms of learning takes place **in addition to classroom** style learning?
 - a. Ask for more details if needed

5. To what extent does the method integrate **learning through experiences / learning by doing** (i.e. learning outside the classroom/lecture style) e.g. field trips, scavenger hunts, case studies (ELT)
 - a. In what ways do you think this **contributes to the learning** of the student?
 - b. Is it something happens **commonly**?

6. Would you say that **problem-posing** is an element of education which is **integrated** into your school?
 - a. If so, in what ways? And **how frequently**?

7. In a similar vein to what extent would you consider **critical thinking** to be of importance in your learning environment?
 - a. How/in what ways **is it encouraged**?
 - b. **How much importance** is it given?

8. Is there emphasis placed upon **new skills** and individual development through the learning environment?
 - a. Could you give **some examples** of how this is done?

Student-Teacher relationship

9. How would you describe the **student-teacher relationship**?
 - a. Is it **dialogical/non-hierarchical**?
 - b. What **benefits/downsides** do you think this has?

10. What **role** do the **students play** in their own education?
 - a. Would you say they occupy an active role in their learning?

11. To what extent do you think **autonomous thinking/reflecting/learning** is present in your school?
 - a. What effect do you think this has on the students?

12. Overall, in what ways do you think the Waldorf method **benefits the students**, be this academically, individually, emotionally etc.?

13. Would you say the **skills** which students **attribute are beneficial** for them in the long term (e.g., their everyday lives)?

Y. Consent Form and Information Sheet

INFORMATION AND CONSENT FORM

You are invited to participate in a research project. This research project is being conducted by Nicole Reich from the Nijmegen School of Management of Radboud University.

The procedure involves being interviewed. The questions concern the Waldorf school at which you are a member of faculty. The interview will take approximately 30-40 minutes. The interview will be audiotaped (unless you explicitly state that you would not like that to be the case). Your contact data (name email address etc.) will be securely stored by the researcher and destroyed once the research is complete.

Information about the research project

The research project is being conducted as part of a thesis for a master in Environment and Society Studies. The topic of the thesis revolves around environmental education. Since research has shown that traditional ways of teaching have not quite succeeded yet to integrate pedagogic methods which promote environmental education, a choice was made to investigate whether alternative pedagogic approaches have managed to do so, in this case the Waldorf method/education.

Following an in-depth literature review on environmental education in the fields of pedagogy, psychology, and sociology a conceptual framework was created to propose a way of measuring environmental education in school (upon request this framework can be available to you after the interview).

This study looks to interview faculty of several different Waldorf schools to gain a deeper understanding of the pedagogic methods they apply. The interviews will be transcribed manually, after which they will be analyzed using a coding system with relevant themes (that appear to emerge recurrently). The results of the interviews will then be analyzed using the conceptual framework created to understand whether there are correlations.

Confidentiality of the research data

The research data will be made anonymous and pseudonymized and safely stored according to the research data management guidelines of Radboud University and conform General Data Protection Regulation. When saving the recording/notes of the interview a random number will be given. In the process to follow (when writing up the research project) the numbers will be replaced by a pseudonym. This will ensure that the researcher does not associate an interview with an individual, and that the project provides no clues of the identity of an interviewee. As soon as possible, any personal data will be deleted. The research project will be shared with the project supervisor only.

Voluntary participation

Your participation in this research is voluntary. This means that you can withdraw your participation and consent at any time during the data collection period, without giving a reason. Even up to six weeks after participating you can have your research data /personal data/ contact data removed, by sending a request to Nicole.reich@ru.nl

More information

Do you have any questions about this research, now or in future, please contact:

Nicole Reich

Email: nicole.reich@ru.nl

Telephone: +491629539406

Address: Staringstraat 3, 6511PC Nijmegen Netherlands

Should you have any complaints regarding this research, please contact:

- The researcher *or*
- Contact the confidential Advisors Academic Integrity via email: vertrouwenspersonen@ru.nl *or*
- Contact the Committee Scientific Integrity of Radboud University. The committee's secretary is Mr. M. Steenbergen, (m.steenbergen@bjz.ru.nl or 024 3611578).

More information on the Committee Scientific Integrity can be found here: <https://www.ru.nl/english/research/other-research/academic-integrity/>

CONSENT:

Signing this form indicates that:

- you have taken note of and you understand this information
- you voluntarily agree to participate
- you are at least 18 years of age

If you do not wish to participate in the research study, please decline participation by not signing this form.

Date:

Name:

Signature (you are welcome to write type your name electronically or to sign manually):